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Updating the Framework for Agency for Healthcare Research and Quality's National Healthcare Quality and Disparities Report

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None of the investigators have any affiliations or financial involvement that conflicts with the material presented in this report.

The information in this report is intended to help healthcare decision makers—patients and clinicians, health system leaders, and policymakers, among others—make well-informed decisions and thereby improve the quality of healthcare services. This report is not intended to be a substitute for the application of clinical judgment. Anyone who makes decisions concerning the provision of clinical care should consider this report in the same way as any medical reference and in conjunction with all other pertinent information, i.e., in the context of available resources and circumstances presented by individual patients.

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Preface

The Agency for Healthcare Research and Quality (AHRQ), through its Evidence-based Practice Centers (EPCs), sponsors the development of evidence reports and technology assessments to assist public- and private-sector organizations in their efforts to improve the quality of healthcare in the United States. The reports and assessments provide organizations with comprehensive, science-based information on common, costly medical conditions and new healthcare technologies and strategies. The EPCs systematically review the relevant scientific literature on topics assigned to them by AHRQ and conduct additional analyses when appropriate prior to developing their reports and assessments.

This EPC evidence report is a Technical Brief. A Technical Brief is a rapid report, typically on an emerging medical technology, strategy or intervention. It provides an overview of key issues related to the intervention—for example, current indications, relevant patient populations and subgroups of interest, outcomes measured, and contextual factors that may affect decisions regarding the intervention. Although Technical Briefs generally focus on interventions for which there are limited published data and too few completed protocol-driven studies to support definitive conclusions, the decision to request a Technical Brief is not solely based on the availability of clinical studies. The goals of the Technical Brief are to provide an early objective description of the state of the science, a potential framework for assessing the applications and implications of the intervention, a summary of ongoing research, and information on future research needs. In particular, through the Technical Brief, AHRQ hopes to gain insight on the appropriate conceptual framework and critical issues that will inform future research.

AHRQ expects that the EPC evidence reports and technology assessments will inform individual health plans, providers, and purchasers as well as the healthcare system as a whole by providing important information to help improve healthcare quality.

If you have comments on this Technical Brief, they may be sent by mail to the Task Order Officer named below at: Agency for Healthcare Research and Quality, 5600 Fishers Lane, Rockville, MD 20857, or by email to epc@ahrq.hhs.gov.

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The authors gratefully acknowledge the following individuals for their contributions to this project:

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Key Informants

In designing the study questions, the EPC consulted a panel of Key Informants who represent subject experts and end-users of research. Key Informant input can inform key issues related to the topic of the technical brief. Key Informants are not involved in the analysis of the evidence or the writing of the report. Therefore, in the end, study questions, design, methodological approaches and/or conclusions do not necessarily represent the views of individual Key Informants.

Key Informants must disclose any financial conflicts of interest greater than $5,000 and any other relevant business or professional conflicts of interest. Because of their role as end-users, individuals with potential conflicts may be retained. The TOO and the EPC work to balance, manage, or mitigate any conflicts of interest.

The list of Key Informants who provided input to this report follows:

[to be inserted in the final report]

Peer Reviewers

Prior to publication of the final evidence report, EPCs sought input from independent Peer Reviewers without financial conflicts of interest. However, the conclusions and synthesis of the scientific literature presented in this report do not necessarily represent the views of individual reviewers. AHRQ may also seek comments from other Federal agencies when appropriate.

Peer Reviewers must disclose any financial conflicts of interest greater than $5,000 and any other relevant business or professional conflicts of interest. Because of their unique clinical or content expertise, individuals with potential non-financial conflicts may be retained. The TOO and the EPC work to balance, manage, or mitigate any potential non-financial conflicts of interest identified.

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Updating the Framework for the Agency Healthcare Research and Quality's National Healthcare Quality and Disparities Report

Structured Abstract

Background and objectives. The Agency for Healthcare Research and Quality (AHRQ)'s National Healthcare Quality and Disparities Report (NHQDR) summarizes the status of healthcare delivery in the U.S. The objective of this technical brief is to provide considerations for updating the framework guiding the NHQDR.

Review methods. The technical brief combined input from key informants, formal literature review searches, grey literature sources, and discussions with the AHRQ NHQDR program team. Literature searches were executed in December 2023 and will be updated during public posting of the report.

Findings. We identified 149 quality of care frameworks and conducted key informant interviews with six content experts. Results are documented in comprehensive evidence tables and a compendium of published frameworks. Published frameworks varied considerably in their scope, domains, and inclusion of equity. We identified areas of the current NHQDR framework that could be updated. This included adding aspects that were currently missing in the framework but that were highlighted as important in the literature, highlighted by content experts, or reflected in what is currently reported in the NHQDR. The process also uncovered areas that were outside the scope of updating of the existing framework and that could be the subject of further conceptual work. The proposed framework continues to address healthcare performance and differentiates 9 domains of quality of care and care disparities, including the overarching domain *person-centeredness*, foundational domains (*access, coordination, healthcare characteristics addressing drivers of health*), performance-indicating domains (*effectiveness, safety, timeliness, efficiency*), and a crosscutting domain (*equity*). Specific proposed updates include introducing *person-centeredness* as an overarching and guiding domain, establishing *equity* as a lens through which we evaluate care quality and identify disparities, emphasizing the key role of *access* to care, adding *healthcare characteristics to address drivers of health*, expanding types of care and care settings.

Conclusion. A substantial number of quality of care frameworks can inform the NHQDR, but frameworks vary widely in their scope and inclusion of equity and drivers of health. We proposed updates to the NHQDR framework to better align with current focus and priority areas. Future work should focus on revisiting the aim and purpose of the NHQDR, assessing the needs and preferences of the audience using the yearly report and web-based tools, and discussing the extension of the framework to incorporate population health.

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1. Introduction

In 1998, the President's Advisory Commission on Consumer Protection and Quality of Care in the Health Care Industry called for a national commitment to improving quality and reducing disparities at every level of the health care system. In the Healthcare Research and Quality Act of 1999 (Public Law 106-129), Congress mandated that the Agency for Healthcare Research and Quality (AHRQ) produce annual reports on health care quality and disparities in the United States.[1] AHRQ initiated these reports to Congress to document national trends, identify gaps in care, and paint a picture of the state of health care quality and disparities. Since December 2003, AHRQ has published annually the National Healthcare Quality Report and the National Healthcare Disparities Report. In 2014, the two reports were combined to be the National Healthcare Quality and Disparities Report (NHQDR).

The NHQDR aims to capture the status of the quality of care provided to all Americans while emphasizing major subgroup populations.[1] It presents trends for measures related to healthcare quality, currently defined as access to care, affordable care, care coordination, effective treatment, healthy living, patient safety, and person-centered care.[2] It also informs Congress about prevailing disparities in health care delivery.[3] The report provides users with the latest available findings on healthcare quality stratified by diseases and conditions, as well as by disparities related to race and ethnicity, income, health insurance status, age, gender, education, setting of care, and type of care. The report covers a broad array of healthcare services and settings and documents national and state data. The 2023 NHQDR includes 555 measures.[2]

While the primary audience of the annual report is Congress, information contained in the report about the U.S. healthcare system is also used by health services researchers, state health officials, organizations implementing quality improvement and disparity elimination programs, advocates for specific health conditions or priority populations, and other interest holders. The NHQDR information is publicly available through a comprehensive and interactive website.[4] The data aim to educate and inform users about health care quality and disparities. The NHQDR is based on hundreds of measures of quality and disparities identified through dozens of data sources. The primary use of the report is not accountability of organizations or accreditation purposes for professionals or institutions. Rather, the report summarizes the status of healthcare delivery in the U.S., providing a portrait of how effectively healthcare delivery systems provide safe, high-quality, and equitable care to Americans.

1.1 NHQDR Framework

The NHQDR was originally guided by a conceptual framework established in the 2001 National Academies of Sciences, Engineering, and Medicine (NASEM, formerly Institute of Medicine) report entitled *Envisioning the National Healthcare Quality Report*.[5] The NASEM report aimed to provide AHRQ with a vision of the content and structure for the National Health Care Quality Report to address the congressional mandate. The framework aimed to help define the type of measures that should go into the report to Congress. The framework was designed as a classification matrix for quality of care measures for the National Healthcare Quality Report (see Figure 1).

1. Introduction

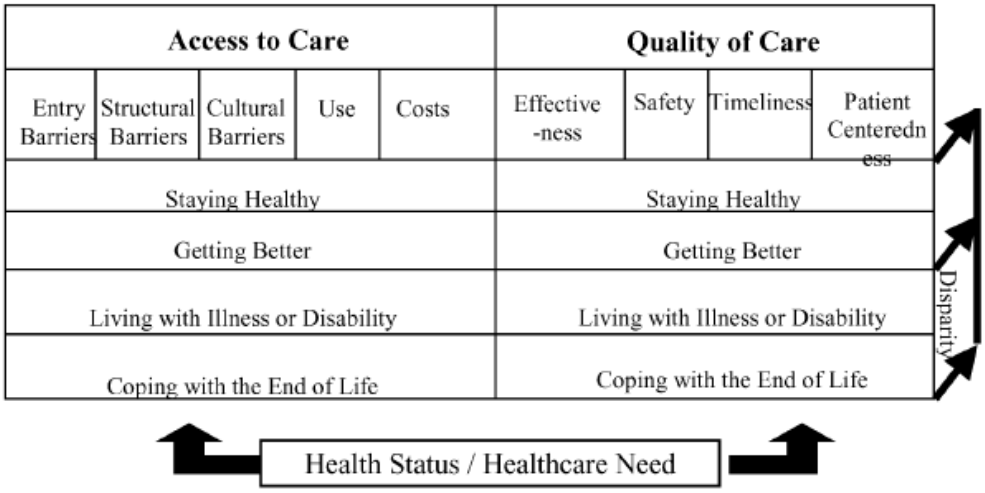
Figure 1. 2001 National Healthcare Quality Report Framework

Consumer Perspectives on Health Care Needs	Components of Health Care Quality			
	Safety	Effectiveness	Patient Centeredness	Timeliness
Staying healthy				
Getting better				
Living with illness or disability				
Coping with the end-of-life				

The National Healthcare Quality Report framework depicted four components of healthcare quality: *effectiveness, safety, patient-centeredness*, and *timeliness*. These components formed part of a matrix that differentiated four consumer perspectives on healthcare needs: staying healthy, getting better, living with illness or disability, and coping with the end-of-life.

The National Healthcare Disparities Report conceptual framework is shown in Figure 2.

Figure 2. 2001 National Healthcare Disparities Report Framework



The framework differentiated access to care and quality of care. Within the domain access to care, the framework differentiated entry barriers, structural barriers, cultural barriers, use, and costs.[1]

The quality of care framework was expanded by the domain *equity* in a 2002 NASEM (formerly Institute of Medicine) report entitled *Guidance for the National Healthcare Disparities Report*[6] shown in Figure 3.

1. Introduction

Figure 3. 2002 National Healthcare Quality Report and National Healthcare Disparities Report Framework

Consumer Perspectives on Health Care Needs	Components of Health Care Quality			
	Safety	Effectiveness	Patient Centeredness	Timeliness
Staying Healthy				
Getting Better				
Living with Illness or Disability				
Coping with the End of Life				

EQUITY

The 2002 recommendation was that the framework should be the same for the National Healthcare Quality Report and the National Healthcare Disparities Report, and the framework was expanded by visually depicting the cross-cutting domain of *equity*. The application of the concept of equity was recommended to present quantitative differences in performance levels by geographic areas in the National Healthcare Quality Report and differences in performance for different populations in the National Healthcare Disparities Report.

In a 2010 NASEM report entitled *Future Directions for the National Healthcare Quality and Disparities Reports*,[7] a multidisciplinary committee formulated recommendations regarding the National Health Care Quality Report and the National Healthcare Disparities Report.[2] Recommendations included to combine the two annual reports to Congress and the committee developed a framework for the NHQDR. The developed framework is shown in Figure 4.

1. Introduction

Figure 4. 2010 NHQDR Framework Revision

Crosscutting Dimensions	Components of Quality Care	Types of Care		
		Preventive Care	Acute Treatment	Chronic Condition Management
EQUITY / VALUE	Effectiveness			
	Safety			
	Timeliness			
	Patient/family-centeredness			
	Access			
	Efficiency			
	Care Coordination			
	Health Systems Infrastructure Capabilities			

The framework added two components of care quality: *access* and *efficiency*. *Coordination* and *capabilities of health care systems infrastructure* were also added to the framework and were displayed as foundational domains. Progress on these elements can contribute to each of the other framework domains across all types of care. Furthermore, the framework incorporates the crosscutting dimensions of *value* and *equity*, and reporting on each measure is expected to include the potential contribution to both value and equity of closing the gap between current and desired performance levels. With these domains, the 2010 framework includes all six domains of the prominent STEEEP (safe, timely, effective, efficient, equitable, patient-centered care) model of healthcare quality that focuses on six domains.[8]

The 2010 framework distinguished three types of care: preventive care, acute treatment, and chronic condition management. However, the healthcare needs—staying healthy, getting better, living with illness or disability, and coping with the end-of-life—that were included in the prior frameworks for the reports were not included in the updated version.

For the last decade, the NHQDR has also been guided by the National Quality Strategy.[9-11] The National Strategy for Quality Improvement in Health Care was established after the Affordable Care Act was implemented to increase access to high-quality, affordable health care for all Americans. The Secretary of the Department of Health and Human Services (HHS) initiated the National Quality Strategy, which set priorities to guide the effort to increase access to high-quality, affordable health care, and included a strategic plan for how to achieve it.[12] The National Quality Strategy promoted quality health care in which the needs of patients, families, and communities guide the actions of all those who deliver and pay for care. It incorporated evidence-based results of the latest research and scientific advances in clinical medicine, public health, and health care delivery. It fostered a delivery system that works better for clinicians and provider organizations—reducing their administrative burdens and helping them collaborate to improve care. The National Quality Strategy is guided by principles that were developed with input from 300 interest holders across the health care system, including Federal and State

agencies, local communities, provider organizations, clinicians, patients, businesses, employers, and payers.[13] The implementation of this Strategy aimed to lead to a measurable improvement in outcomes of care, and in the overall health of the American people. The framework of the National Quality Strategy depicting aims and priorities is shown in Figure 5.

Figure 5. National Quality Strategy Framework

This complex framework includes the goals healthy people, better care, and affordable care. There are six priorities, including person- and family-centered care; prevention and treatment of leading causes of morbidity and mortality; affordable care; health and wellbeing; effective communication and care coordination; and patient safety. The framework also includes nine levers for quality such as measurement and feedback, public reporting, and payment. The framework addresses six interest holders, including communities, payers, and providers.

1.2 Considerations for Updating the NHQDR Framework

There are a range of considerations related to selecting a framework for quality of care when the framework and associated measures of quality of care need to be suitable to detect and document disparities. A framework can serve different functions and the NHQDR framework has changed over time. The framework can be used to select measures, as seen in the framework for the National Healthcare Quality Report. The domains of the framework can also be used to categorize measures included in the NHQDR by topic, providing an overarching structure of the content. The framework may also serve as a way to organize the chapters of the NHQDR report

to Congress. Alternatively, the framework can depict the content of the NHQDR in context. In this case, the role of healthcare in the larger context of public health or individual health. The NHQDR framework has undergone multiple developments over the last two decades, and it is being assessed again at this time to determine any needed updates.

In the last decade the U.S. healthcare landscape has changed considerably. It has seen countless developments, including the impact of the Affordable Care Act and the COVID-19 pandemic. There have been technological advances in clinical treatment (e.g., gene editing), in delivering care (e.g., telehealth), and in coordinating care (e.g., electronic health record). AHRQ has identified new priority areas for the NHQDR, i.e., person-centered care, patient safety, care coordination, effective treatment, healthy living, and affordable care.[2] In recent years the NHQDR reports have been organized around the concepts of access to care, quality of care, and disparities in care. The reports have also been shaped by the National Quality Strategy which focuses on healthy people, better care, and affordable care.[13] The current mission statement of AHRQ is to produce evidence to make healthcare safer, higher quality, more accessible, equitable, and affordable.[14]

There are also emergent paradigm changes that should be recognized. A key debate in the field in the last decade centers around equity, social determinants of health, and priority populations. Equity was first introduced in a framework supporting the National Healthcare Quality Report and National Healthcare Disparities Report in 2002. The domain could serve as criterion in the process for ranking measures as well as a distinct data element for inclusion in the national healthcare reports. In the 2010 NHQDR framework revision, equity was highlighted as a crosscutting dimension. Equity is not explicitly addressed in the National Quality Strategy framework. However, AHRQ has recently published a series of papers to advance AHRQ's conceptual equity model.[15] Furthermore, most recently, the 2003 Unequal Treatment report has been updated and provides a detailed overview of the current state of racial and ethnic disparities in healthcare and suggests strategies to achieve equitable healthcare.[16] In addition, extensive research has been conducted regarding operationalizing and measuring equity in recent years that could inform the NHQDR framework.[17] We also know more about healthcare delivery and payment actions to advance health equity.[18]

Updating a framework requires a thorough review of the literature and necessitates engaging key experts to ensure that these developments are incorporated.

1.3 Objectives

This technical brief was commissioned by the AHRQ Evidence-based Practice Center (EPC) Program, initiated by AHRQ's NHQDR Program. The objective of this technical brief is to provide considerations for updating the current framework guiding the NHQDR. The proposed updates intend to support AHRQ's NHQDR team for consideration rather than being focused on the NHQDR's broader audience of Congress or other end users of the annual report or the online sources.

1.4 Guiding Questions

Updating the framework underlying the NHQDR is a conceptually challenging undertaking that needs to take many considerations and interest holder perspectives into account. Any chosen framework will guide which quality measures are prioritized and documented in the annual report. This documentation in turn influences which area will be the focus of quality

improvement interventions trying to improve quality of care and reduce disparities. The technical brief was facilitated by the following guiding questions:

Guiding Question 1. Quality of care frameworks

1: Which frameworks have been developed or are used for quality of care?

- 1a: For what settings, populations, and uses were the frameworks developed?
- 1b: How are the framework domains defined?
- 1c: In what context have these frameworks been used?
- 1d: How do these frameworks intersect with levers and tools available to federal and state governments?
- 1e: How are the frameworks and domains similar to or different from the 2010 NASEM framework?

Guiding Question 2. Updating the NHQDR framework

2: How should the 2010 NASEM framework and its domains be updated?

- 2a: How would the existing AHRQ NHQDR measures be reorganized in the updated framework and domains?
- 2b: Are there available measures for new framework domains?
  - i: Describe measures in terms of their definition, population, years available, geographic representation, data sources, and supporting evidence.

2. Methods

This technical brief is part of a series of products geared towards supporting the update of the NHQDR. The methods for this technical brief follow the Methods Guide for Evidence-based Practice Center (EPC) Program.[19] The technical brief follows a detailed published protocol on the AHRQ website, and we registered the research in the Open Science Framework.[20, 21] This technical brief aimed to answer the guiding questions with information from interviews with key informants, grey literature, and published research. The identified information was used to propose updates to the framework underlying the NHQDR.

2.1 Discussion with Key Informants

We held key informant calls with individual representatives to address the guiding questions and our approach to this technical brief. We selected key areas for which we identified representatives: framework development, care models, equity, healthcare improvement, and social determinants of health. Key informants provided information not yet captured in the scientific literature. Discussions helped the review team to understand the conceptual complexity of quality of care and disparities in healthcare delivery systems. The areas of discussion are documented in Table 1.

Table 1. Key Informant Questions

Topic	Key Informant Questions
Guiding questions	To fully assess the current state of the science for this topic, are we asking the right questions? Are we addressing the most important decisional dilemmas and knowledge gaps?
Current frameworks for quality of care	Are there new frameworks that have been published that may be helpful? What additional potential sources may help to identify frameworks? Are there any preferred frameworks, and why? Are there existing frameworks that include social determinants of health? What are some equivalent disparities reports in other healthcare systems? What are some systems for critical appraisal of frameworks?
2010 NASEM framework	What are key areas where the existing framework needs updating? What areas are missing in the existing framework? What feedback do you have on integrating social determinants into the framework?
Search and sources	Do you have any comments or additions to the search strategy? Are there new sources of information and/or data? Are there non-research/non-academic data sources that you use?

The key informant interviews followed a semi-structured format. Interviews were conducted as 1-hour web conferences, and we invited key informants to individual, in-depth interviews. Before each interview, participants received an online survey that informed them of our questions in advance. The survey was open before, during, and after the interview to give participants the opportunity to add information outside the call. Key informants also received the protocol of the technical brief ahead of the interview to enable meaningful input and discussions during the call. Interviews were documented during each call in a structured form and notes were reviewed and thematically discussed by the investigators.

2.2 Published Literature Search

We combined searches for frameworks with other searches in this series of products geared towards supporting a proposed update of the NHQDR.[22] Although we build on a 2010 update of

the NHQDR framework, the prior work did not involve a systematic literature review; hence, we searched without date restriction. We searched the databases PubMed (biomedical literature), CINAHL (allied nursing), PsycINFO (psychosocial literature), Social Work Abstract (social work research), the Cochrane Database of Systematic Reviews, and the Campbell Collaboration systematic review collection to identify frameworks specifically. Prior to the framework-specific search, we undertook exploratory searches on measuring quality of care to inform the final search strategy. The final search strategy and our scoping searches are documented in Appendix A. The exploratory searches highlighted the challenge of balancing the search yield and not missing relevant publications. The terminology for quality indicators is not standardized and nomenclature varies across clinical fields. The literature searches used a set of general quality of care indicator terms ("Quality Indicators, Health Care"[Mesh]) combined with search terms for frameworks (e.g., framework, logic model, conceptual model). Searches used controlled vocabulary where applicable as well as text words as not to miss newer studies that were not fully indexed yet in the databases. All retrieved citations were screened for all products in the series supporting the update of the NHQDR.

We also reference-mined existing reviews and background papers[23-87] and screened included framework publications to ensure that no relevant framework was missed. In addition, we reviewed all sources with the key informants to ensure that the search was comprehensive. Literature searches were designed, executed, and documented by the EPC Medical Librarian. Searches were conducted without date restriction and databases were searched from inception to December 2023. Searches will be updated during the public comment process before finalization of the technical brief.

2.3 Grey Literature Search

We searched the websites of health services research organizations, funders of research, and federal agencies charged with improving quality of care or those that address health disparities.

As outlined in Appendix A, we reviewed the website of the Robert Wood Johnson Foundation (improving health and wellbeing), John Hartford Foundation (healthcare practice innovation), CMS (Centers of Medicare and Medicaid Services), HHS (Department of Health and Human Services), VHA (Veterans Health Administration), ASPE (Assistant Secretary for Planning and Evaluation), National Committee for Quality Assurance (NCQA), NIA (National Institute of Aging), NIMHD (National Institute of Minority Health and Health Disparities), PCORI (Patient-Centered Outcomes Research Institute), ESHPI (AcademyHealth's Evidence-Informed State Health Policy Institute), and NAM (National Academy of Medicine) for quality of care and disparities frameworks.

Finally, AHRQ set up a portal for submissions of Supplemental Evidence and Data (SEADs) and published a notice on the Federal Register to encourage SEADs submissions. However, no submissions were received.

2.4. Discussions with AHRQ's NHQDR Team

We sought input from the current NHQDR team regarding:

- Use and function of the current framework;
- Audience and users of the NHQDR;
- Process changes after combining the quality of care and the disparities reports;
- Framework as report organization;

- NHQDR scope - healthcare (performance of care delivery organizations) vs health (population health status).

In addition, we consulted the group regarding identified potential areas of change to ensure the usefulness and relevance for the proposed framework.

2.5 Published Framework Eligibility Criteria

Table 2 describes the eligibility criteria in a Population, Concept, Context, and Other limiters framework.

Table 2. Eligibility Criteria for Studies in the Review

Domain	Inclusion	Exclusion
Population	• Publications that addressed quality of care indicators, criteria, or benchmarks; as well as publications that addressed health equity, healthcare disparities, or healthcare equity in a framework that included care quality; we accepted the authors' definition of quality of care and disparities; quality indicators could include care processes-related measures (e.g., follow-up post discharge, continuity of care, medication errors), heath services utilization measures (e.g., hospital readmission, emergency department visit), care satisfaction (e.g., patient satisfaction, care needs met, trust in care provider), or health outcomes (e.g., mortality, physical functional status, mental functioning, quality of life), or overarching quality of care dimensions (e.g., access, safety, timeliness, effectiveness, efficiency, equity, care coordination, or continuity of care) used as quality indicators; care disparities could either address differences or gaps in access to healthcare, in provided health services, or in health outcomes of priority populations	• Publications not addressing quality of care, addressing quality improvement, or showing roadmaps of how to achieve improvements, publications not mentioning quality of care nor health equity as a central feature of a framework, and equity or disparity models that did not include quality of care or performance of the healthcare system
Concept	• Publications that included a figure or detailed description of a framework of quality of care or care disparities; frameworks could use the format of a logic model, analytic framework, conceptual model, or other conceptualizations of quality of care or disparities	• Publications citing existing frameworks without further conceptual contribution to the framework and publications describing only the need of quality of care or disparities measures
Context	• Healthcare, specifically healthcare delivery organizations	• Publications in contexts outside of healthcare or not specific to healthcare
Other limiters	• Reports published in English-language, journal manuscripts, trial records, and gray literature in the public domain from the outlined sources	• Data reported in abbreviated format (e.g., conference abstracts) and studies not published in English language • Systematic reviews were retained for reference mining

2.6 Information Management

Literature screening and data abstraction were conducted in an online database designed for systematic reviews (DistillerSR). Literature reviewers screened citations supported by machine learning to reduce reviewer errors and bias. All citations which were determined to be potentially relevant by at least one reviewer were obtained as full text. Full text studies were screened by

two independent literature reviewers against the explicit eligibility criteria and disagreements were resolved by consensus.

The data abstraction captured detailed information to facilitate decisions about framework domains or conceptualization changes. We documented the scope and target of the framework, the included domains, and conceptualization (if any) of equity of care or any considerations regarding disparities. In addition, we added information to facilitate critical appraisal of identified frameworks. We focused on the source (e.g., published by an individual author group or endorsed by a professional organization), interest holder involvement (in the development of the framework), evidence base status (e.g., framework domains based on a systematic review of the literature or local empirical data), the presence of defined population (the framework's target was clearly reported), and evidence of validity testing (e.g., goodness of fit assessed, applied in different contexts) following a critical appraisal form developed for a prior framework review.[88]

2.7 Data Presentation

We developed evidence tables documenting identified frameworks (Appendix C). In addition, we documented the frequency of individual framework domains across the identified frameworks (Figure 8). When a publication included a visual representation/figure of their framework or model, we included it in the technical brief where possible (see Appendix E). Frameworks licensed under Creative Comments shared use agreements are included with an appropriate attribution. For all others, we are requesting permission from publishers to include in the final report.

The findings below provide a broad overview, followed by a response to the guiding questions of this technical brief. Throughout, we compared and contrasted identified models with the current NHQDR framework developed by a NASEM workgroup committee in 2010.[7]

2.8 Updating the NHQDR Framework

We proposed updates to the NHQDR framework iteratively throughout the course of the project. We also considered whether the framework needs updating at all. Furthermore, we assessed all identified published frameworks regarding whether they may be suitable to guide the NHQDR better than the 2010 NHQDR framework. We did not change domains that were not addressed by key informants or published literature. Additionally, we did not consider constructing a completely new framework, thus the proposed updates are still rooted in the frameworks that have been previously suggested for the NHQDR.

We used the 2010 framework published in the NASEM report that was specifically designed to support the NHQDR as the basis for the update. We also reviewed earlier versions of the NHQDR frameworks and frameworks developed for the National Healthcare Quality Report and the National Healthcare Disparities reports. We used the more general National Quality Strategy framework to determine which aspects are not captured in the 2010 update of the framework but that are likely relevant because they align with AHRQ's current priorities. We reviewed the original charge from Congress regarding the quality and disparities reports and reviewed AHRQ's current mission statement.

We asked key informants whether and which aspects of the NHQDR framework need updating. We considered specific changes suggested by key informants as well as consensus ideas that were raised by more than one key informant that may need to be translated into a framework change. We reviewed identified frameworks with regard to domains that are

consistently reported but missing from the NHQDR framework, in particular in newer frameworks that may be important additions to the NHQDR framework.

The proposed updates focused on incorporating areas of importance not yet captured in the prior framework. We considered the goals healthy people, better care, and affordable care;[9] and the priority areas person-centered care, patient safety, care coordination, affordable care, effective treatment, and healthy living to ensure alignment.[89] A main consideration was how equity and drivers of health can be emphasized in the framework given its importance to AHRQ. Other considerations included updating the framework with aspects that are now included in the NHQDR, for example data already currently included in recent NHQDRs but not yet incorporated in the framework. We used the 2022 and 2023 NHQDR report to Congress for the content review.[89, 90] We discussed the identified information and conceptual input across the different sources and engaged the AHRQ NHQDR team in discussions regarding suggested changes.

2.9 Peer Review and Public Commentary

[to be inserted in the final report]

3. Findings

This technical brief drew on multiple sources, including key informants, grey literature, and published literature, and the following section provides an overview of the results. The remainder of the result chapter is organized by the key questions. The chapter documents existing quality of care frameworks as well as a suggested revision of the NHQDR framework.

Key Informant Input

Key informants were generally in agreement that this technical brief addresses the right questions. One common suggestion from key informants was to delineate the framework for population health and the framework for healthcare quality, noting the lack of a population health perspective and disconnect between healthcare quality and population health. Another frequent suggestion was to differentiate the intended use and the actual use of the framework, as they may not be the same.

We further asked key informants whether they could recommend an established quality of care framework. There were no suggestions for a framework that was ready to potentially underpin the NHQDR going forward, but key informants suggested several frameworks that may help in updating the NHQDR framework or they suggested sources that may have published a relevant framework. Key informants also emphasized the need to consult sources other than scientific journal publications as well as the international literature. Suggestions for relevant work included those that integrate social determinants of health and other drivers of health with a healthcare focus. Some discussion focused on the challenge of defining social determinants of health, the lack of comprehensive systems, and arguments that social class may be more predictive than variables such as race. Furthermore, there is a need for distinction between broad environmental social drivers of health and individual unmet social needs including their implications for measurement. A stated example was one cannot deliver safe care for a person with diabetes unless one knows whether they have food insecurity. Some key informants recommended an equity-centered quality measurement framework for addressing quality of care, while emphasizing that the equity-centered quality framework may serve a different purpose from the framework underpinning the NHQDR. A shift in focus from traditional clinical metrics to a more equity-focused approach in healthcare measurement is likely needed, similar to a shift from a disparity focus to an equity focus. Some discussions focused on disparities and system performance, examining disparities by comparing healthcare system performance within and across regions, and identifying the potential for improvement (e.g., by examining the gap between current performance and optimal performance). Furthermore, discussions centered on initiatives aimed at reducing disparities, especially in underserved minority populations, and the challenges in scaling these efforts nationally, as well as the increasing focus on systems of oppression and structural racism as central factors in health disparities. Discussions focused also on the difference between a framework for assessing healthcare system performance and evaluating broader public health outcomes. Similarly, care delivery measures are different from public health measures where care delivery quality is strongly condition specific. Other discussions addressed the challenge of communicating healthcare equity and quality measures in a way that influences policymakers and aligns with health system goals.

Most key informants agreed that the 2010 framework would benefit from updates. However, key informants expressed concerns that the existing framework is insufficiently used and suggested that the framework may need to be re-conceptualized completely. One suggestion was

to develop a comprehensive model incorporating health system access, social determinants of health, implementation science, and payment reform. Several key informants pointed out that the existing framework lacks the population health perspective and indicated that a shift from health to wellbeing may be useful, as well as displaying the connection between healthcare quality and population health more clearly. Suggestions for concepts that should be included or emphasized stronger in the framework included social determinants of health or social drivers of health. Social drivers of health play a critical role in shaping healthcare outcomes. Better integration of drivers of in the framework will help to better address disparities. Some of the discussions centered around challenges for current measurement practices and the potential of using incentives to drive improvement in diversity, equity, and inclusion (DEI). In particular as there is currently no established measure that quantifies how good an organization is at implementing DEI and a measure is needed to be used in a reward system.

One specific suggestion was to either remove the types or care or to expand it to include end of life care (care without curative intent). Others stressed the importance of a community-centered perspective: the healthcare system can bring along with the community elements, including conditions that people live in, resources that people need to enable them to achieve health and well-being. This entails exploring what roles the healthcare system should play in addressing public health issues and social drivers of health. For example, blood pressure control and glycemic control require resources and skills that the healthcare system can bring along with community elements. Key informants emphasized the need for healthcare systems to work closely with communities and to foster integration of healthcare and community to address broader drivers of health. A further domain to integrate in the framework may be health literacy, given that health literacy affects how people are able to access, interact with, and benefit from the healthcare system. Promoting patients' health literacy is associated with patient activation measures, or other measures of patient engagement and empowerment in healthcare decision-making. This can include the family given that decision-making is often family-centric. A further suggested concept that may be lacking was whole-person care. Care coordination should emphasize whole person. The important coordination is not necessarily across specialties or across providers, but it could also be connected to other sectors such as housing and end of life care to ensure a more holistic model of care. The framework could expand to social drivers and social service organizations. In addition, key informants discussed the role of education and social drivers of health and stressed that healthy behaviors are driven by education levels and translate into income disparities. Frameworks need to generalize sufficiently to incorporate a range of different systematically underserved groups. This includes different dimensions of equity, including challenges faced by people with disabilities beyond race and ethnicity. Furthermore, it was emphasized that primary care holds a critical role in delivering high-value, equitable care.

In terms of changes to the existing framework, one key informant noted that the inclusion of health systems infrastructure capabilities may need to be reframed or further defined. Discussions included suggestions to expand to a broader set of structural factors, some of which are health systems related, others are larger environmental systems level, or to restrict to aspects that are amenable to change to support equitable and accessible care. Several key informants stressed that integrating social determinants of health in a quality of care framework is still a rapidly changing area and it is important to have a framework that can be adjusted to further changes in terminology and operationalizations. Key informants called for a clearer description of the terms *equity*, *value*, and *person-centered* in the framework as the definitions may have

changed over time. Key informants highlighted that *equity* and *value* are currently separate outcomes and achieving one may not necessarily improve the other. However, they could be conceptualized as interconnected and depicted in a way that if the objective function is equity, you get value.[28] Key informants advocated for treating equity as an integral part of quality care, embedded in all aspects of healthcare delivery rather than a separate domain. Several key informants highlighted structural problems of the U.S. healthcare system, mentioning a broken system as well as the lack of a system and segmented care. Key informants also noted that the U.S. distributes resources differently from other countries, i.e., spending two thirds of spending into care delivery rather than public health. Finally, multiple content experts also addressed the disconnect between healthcare and population health.

Key informants agreed that dimensions to compare and critical appraisal of frameworks are important but had few suggestions regarding tools that could be used to appraise frameworks. Observations on framework development included emphasis on consensus finding when establishing frameworks and selecting domains and measures. Engaging interest holders and incorporating different perspectives in the development of frameworks. Advocating for more inclusive approaches was also highlighted, in particular to ensure that patient and community advocacy voices inform our understanding of healthcare quality. In addition, there are recent advances in measurement, especially in capturing patient experiences and frameworks need to adapt to the evolution of measurement domains. Key informants that had developed or revised frameworks for their agencies highlighted the importance of working with a multi-disciplinary group. A further aspect critical to frameworks is the engagement with end users and the importance of involving a diverse range of end users to ensure that tools are practical and useful.

Appraising the tradeoff between measurement burden and evidence of impact on outcomes was also frequently mentioned in discussions. Discussions focused on measurement overload and key informants advocated for developing a concise and effective set of measures to capture healthcare quality and equity without overwhelming interest holders. Further considerations were the importance of actionable metrics, i.e., rather than an exhaustive list of measures, selecting a small number of actionable measures that can drive improvement. It is easy to add measures, but there needs to be focus on areas where there is evidence that measuring something will improve outcomes. Equity is not going to have the same level of evidence because the impact may not have been evaluated in a large randomized controlled trial. But emphasis needs to be on meaningful metrics that reflect true improvement rather than simply measuring for compliance or comparison. Some discussion focused on the exploration of how technology and standardized data can support the transition to quality measures that enhance equity and address social drivers of health. A further suggestion when comparing and appraising frameworks was to pay attention to the contexts in which frameworks were developed, which will account for some differences across available frameworks. Some of the discussion focused on the difference between framework alignment and intersection in quality reporting where alignment describes a policy effort to derive shared domains or measures.

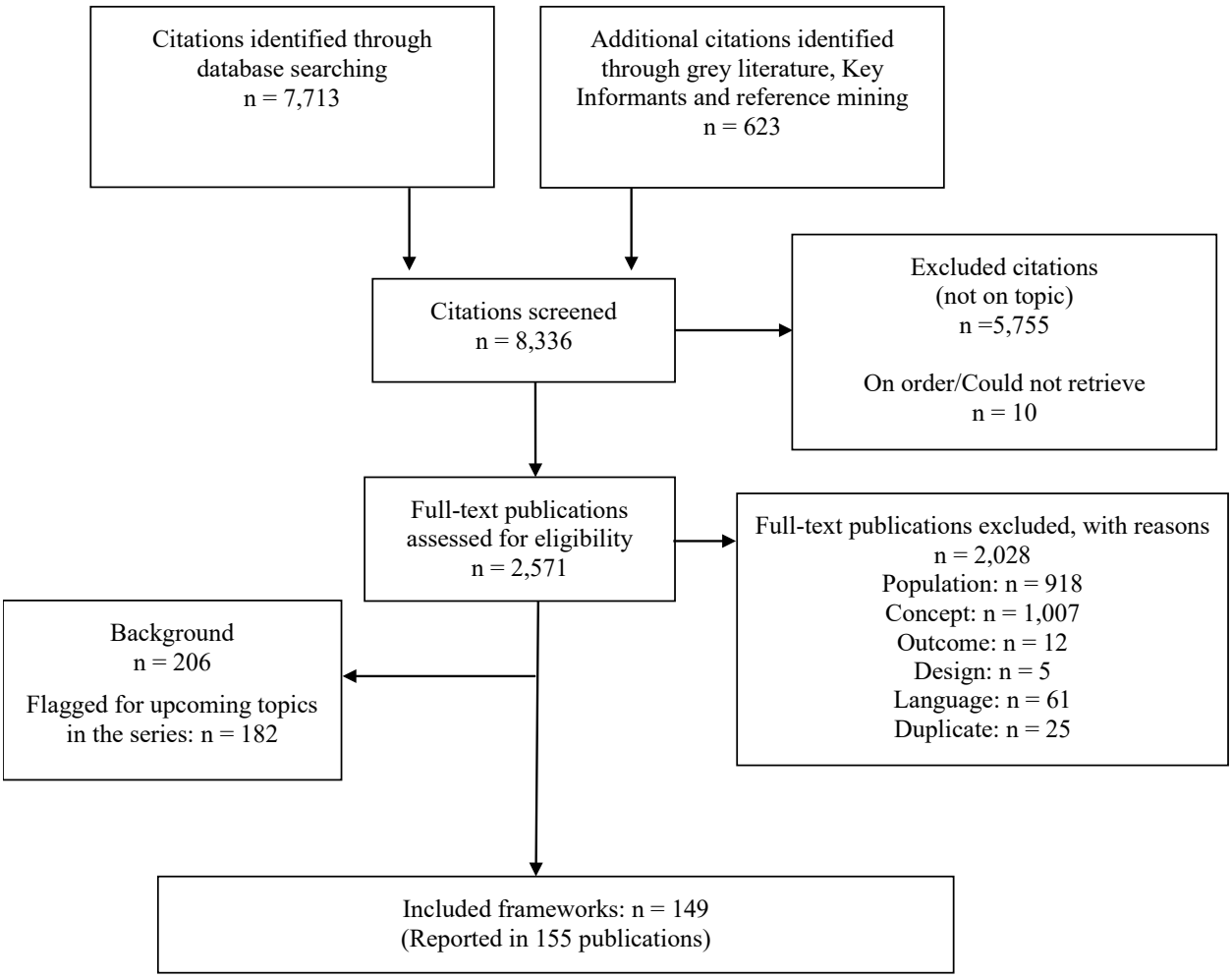
Discussions with AHRQ around the framework use and function aimed to understand better which changes to the current framework would be most helpful. The NHQDR is mandated by Congress and AHRQ submits a yearly report to congress. However, the audience of the reports and particularly the NHQDR website tools, is much broader. Combining the originally parallel reports on quality of care and care disparities was triggered by the fact that both reports had substantial overlap and the conceptual decisions that both areas are intrinsically linked, and we cannot have quality of care if there are disparities. Discussions with AHRQ also indicated that

the framework cannot be too specific (e.g., pre-specify the chapters of the NHQDR), because the team needs flexibility to be able to address changing priorities over time. Regarding the question of whether the NHQDR should address only healthcare (i.e., target only measures that are under the control of the healthcare system, or expand to health (i.e., to provide a full picture of the nation's status), is a complex question. To some extent, the healthcare system may already be held accountable for drivers of health (e.g., social determinants of health), that are outside the purview of healthcare.

Literature Review Results

The flow diagram (Figure 6) shows the disposition of identified sources of information.

Figure 6. Flow diagram



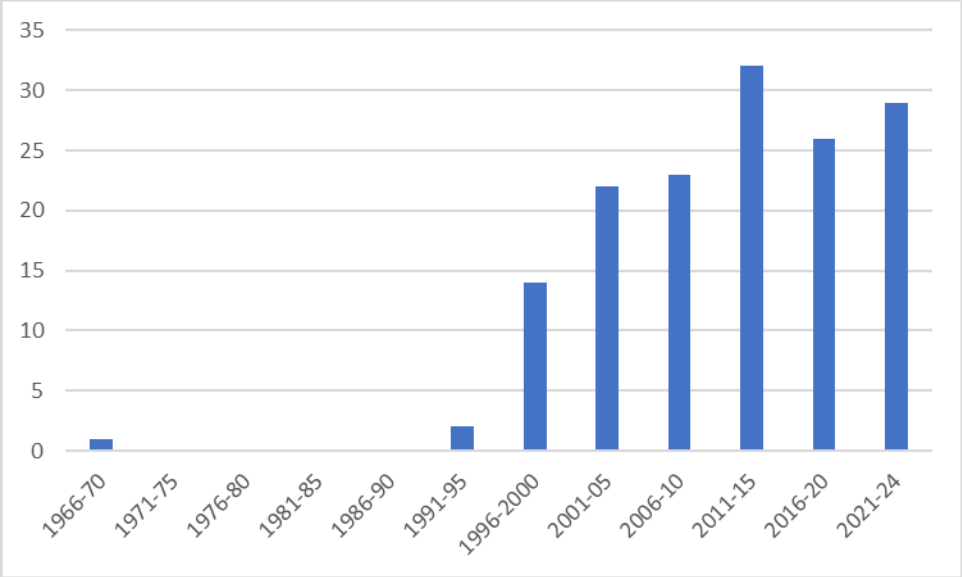
Across sources, we reviewed over 8,336 citations, 2,571 publications were obtained as full text, and we included 149 quality of care and/or disparities frameworks reported in 155 publications.[1, 5-9, 29, 36, 91-237] In addition, 206 background articles provided additional information relevant to the project or were reference-mined for potential additional frameworks. The list of included, background, and excluded studies are shown in Appendix B.

3. Findings

3.1 Main Findings Guiding Question 1: Which frameworks have been developed or are used for quality of care?

We identified 149 relevant frameworks[1, 5-9, 29, 36, 91-97, 99, 101-155, 157-172, 174-186, 188, 190-237] which are summarized in the evidence table in Appendix C. The earliest included framework was the 1966 Donabedian quality of care framework introducing structure, process, and outcome measures,[129] but most frameworks were published more recently, many in the last two years, indicating a renewed interest in addressing quality of care. Examples are a recent framework developed by the National Committee for Quality Assurance with overall wellbeing at the center,[179] the CMS framework for outlining priorities for health equity,[121] and a framework developed to support a large scale assessment of Australia's health performance.[106] Figure 7 depicts the number of publications by year.

Figure 7. Number of Framework Publications by Year



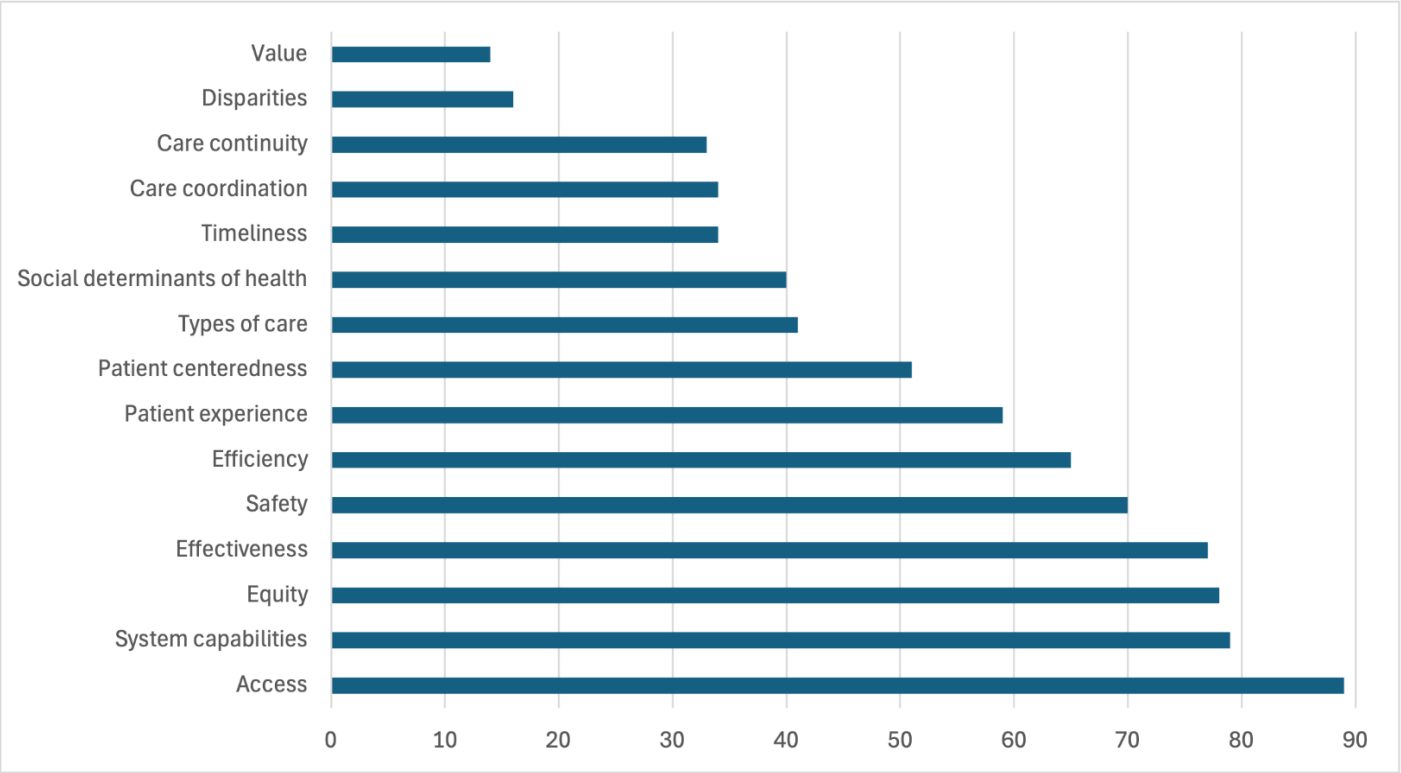
Identified frameworks were developed in Australia, Belgium, Canada, China, Greece, Iran, Japan, New Zealand, Nigeria, Portugal, Qatar, Saudia Arabia, Singapore, Sweden, Switzerland, Taiwan, the Netherlands, United Kingdom, and US, or were multi-site (e.g., developed by a European committee).

All included frameworks addressed quality of care; however, the role of care quality in the model varied widely. Several publications showed quality of care dimensions as the only topic or the center of the framework,[103, 123, 133] while more recent conceptualizations often highlighted healthcare as being only one of many factors among drivers of health. Non-medical determinants of health and community and health system characteristics are also critically important.[117] An example is the current Australian health performance framework that embedded health systems characteristics in a complex model of determinants of health (socioeconomic factors, health behaviors, personal biomedical factors, environmental factors), health system context (demographics; community and social capital; governance and structure; financing; workforce; infrastructure; information, research and evidence), with equity as an overarching domain, and

health status parsed into different components (health conditions, human function, wellbeing, deaths).[106]

We prepared a table that summarizes all domains included in the 2010 NHQDR framework for each identified framework (Appendix D). Figure 8 shows the frequency of domains across the frameworks meeting eligibility criteria.

Figure 8. Frequency of Domains in Identified Frameworks

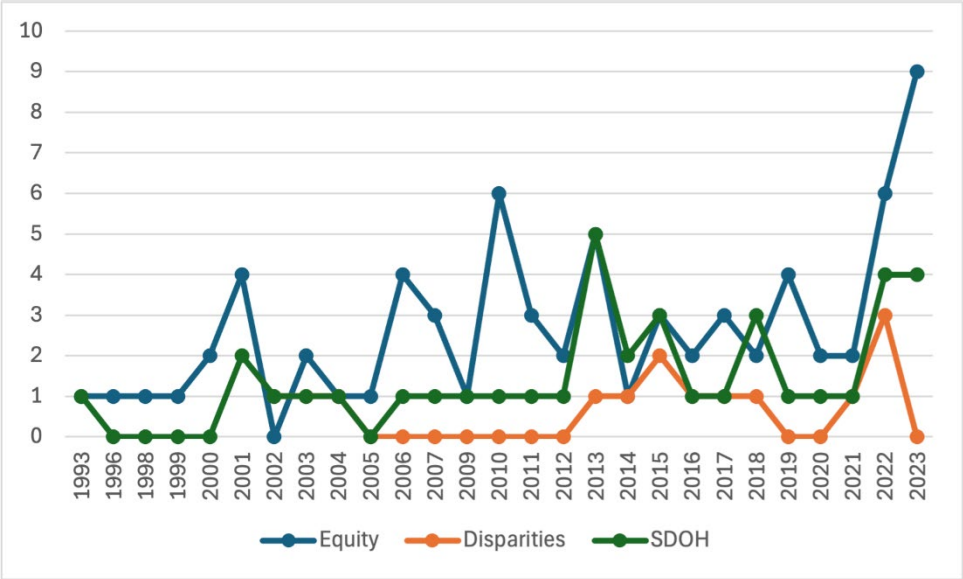


Two thirds (61%) of the identified frameworks included the domain *access*. Over half of the frameworks included *equity* (54%), while few used the term *disparities* (11%). Other frequently depicted domains were *effectiveness* (53%) and *safety* (48%). Similarly, about half (54%) of the frameworks included *system capabilities or system limitations* in the framework. Only a small percentage of frameworks mentioned *value* (10%). The frequency analysis informed the update of the NHQDR framework documented in Guiding Question 2.

We were particularly interested in the concept of equity, and Figure 9 tracks the inclusion of equity, disparities, and social determinants of health in published frameworks.

3. Findings

Figure 9. Number of Published Frameworks Including the Domains Disparities, Equity, or Social Determinants of Health (SDOH) by Year



The figure shows how the interest in disparities, equity, and social determinants of health have generally increased over time based on the analysis of published frameworks. An uptake of equity in inclusion in frameworks in U.S. publications is likely associated with an executive order on advancing racial equity and support for underserved communities through the federal government in January 2021.[238]

In addition to the content of the frameworks, we also collected information about the development process and endorsement of the framework. The evidence table (Appendix C) summarizes the process where the publication provided details on the development of the framework. Authors often reported a literature review, followed by discussions with content experts, and a workshop for committee members charged with developing the framework. A large proportion of the frameworks were endorsed by health agencies (58%) such as ASPE rather than published by individual authors. Half of the authors explicitly stated the framework was developed with interest holder engagement or input from different perspectives (50%). However, only a third of all authors mentioned an evidence-based process with empirical data contributing to the development or validation stage of the framework or its components (33%). Almost all identified frameworks defined the population the framework aimed to depict (89%), although for some frameworks, the population was a very broad category (e.g., the general public,[29] users of the healthcare system[158]). Frameworks were also divided regarding reporting validity testing, such as applying the framework to a set of quality of care measures (60%).

Finally, all frameworks that included a model or figure are shown in Appendix E.

3.1.1 Findings Guiding Question 1a: What settings, populations, and intended use were the frameworks developed for?

The two most frequent settings for identified frameworks were healthcare, and population and public health. Other settings included care management, hospital, regional healthcare (e.g.,

Ohio, Boston),[64, 239] primary care and family practice, home-based medical care, community-based health care, and research and policy.

Populations for the identified frameworks include general U.S. population (most common), non-US or global populations (e.g., Europe), regional populations (e.g., residents of Ohio). Populations also included persons with chronic and complex health needs, healthcare centers and professionals, users of nursing care or primary care, Medicaid enrollees and healthcare system users, and individuals experiencing disparities, and minority populations.

Frameworks serve different purposes, such as supporting the reporting of quality, providing accountability for systems, or monitoring quality improvement. The evidence table in Appendix C documents the intended use of the identified frameworks in detail. Half of the identified frameworks did not report the context or contexts for which the framework had been developed or to which it has been applied. Some were intended to describe and assess quality of healthcare, assess health system performance (including healthcare system in general, and more specific systems such as hospital, primary health care systems, and Medicaid managed care). Others were designed to improve the public's health and reduce health disparities or address health equity and social determinants of health (where the intended use was reported).

3.1.2 Findings Guiding Question 1b: How are the framework domains defined?

We included quality of care and care disparities frameworks. While often not explicitly defined, a review of the frameworks indicated that both quality of care and disparities were conceptualized differently across frameworks. For the NHQDR, quality was described as follows:

- Quality: Performance of the healthcare delivery system with regard to personal healthcare, rather than public health functions.[5] This definition has guided the National Healthcare Quality Report and represents a specific and deliberately narrow conceptualization of healthcare quality.

The first National Healthcare Disparities Report defined disparities as follows:

- Disparity: The condition or fact of being unequal, as in age, rank, or degree. Synonyms for disparity include inequality, unlikeness, disproportion, and difference. While disparity in health care has been closely associated with equity, there are several potential reasons for the differences observed at the individual level. The purpose of this National Healthcare Disparities Report was to describe differences in quality of and access to health care to help identify disparities in health outcomes that may be responsive to improvements in health care. Disparities are most easily identified when there is a clear reference point for what is appropriate and reasonable to expect. The presented quality measures have been developed around health care interventions for which there is sound scientific evidence of effectiveness and for which there is a professional consensus and expectation that these services would be provided to all patients. Even after consideration of variation in a patient's medical conditions and severity of illness, there should be little deviation from specific quality measures associated with population.[2]

Many frameworks intended to be used for describing and assessing quality of healthcare include all or some domains of the STEEEP (Safe, Timely, Efficient, Effective, Equitable, Patient-Centered) model,[8] defined as follows:

- Safe: Avoiding harm to patients from the care that is intended to help them.

- Timely: Reducing waits and sometimes harmful delays for both those who receive and those who give care.
- Efficient: Avoiding waste, including waste of equipment, supplies, ideas, and energy.
- Effective: Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and misuse, respectively).
- Equitable: Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status.
- Patient-centered: Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions.

The domains are defined differently in the identified frameworks. This includes the definition of *equity*, where our understanding has shifted from providing the same care to consistent and systematic fair, just, and impartial treatment of all individuals.[238, 240] Frameworks differed in whether they focused on equality in treatment, equity in treatment, or equity in health. Health equity addresses individuals having fair and just opportunity to attain the highest level of health.[241] The latter is not necessarily or sufficiently achieved through equal care. The framework domain *patient-centered* has also often been modified and further developed. For example, it was expanded in the 2010 NASEM recommendation for the NHQDR to read patient/family centered. Key informants also stressed that patient-centered means ensuring health literacy goals are met, i.e., to ensure that patients are aware of the options before expressing preferences, needs, and values; and may need to expand to patient/family/community-centered. Another emergent paradigm shift is the change from patient to person, i.e., rephrasing the domain as person-centered care. This change in perspective focuses on the person rather than the patient. It is routed in the concept of *whole health* which shifts the focus from disease-oriented medical care to health and wellbeing.[242] Furthermore, wellbeing is defined by the individuals, their families, and their communities.

A further concept is value that was introduced in 2010 into the NHQDR framework and was defined as follows:[7]

- Value: A measure of stakeholder utility (subjective preference by a group or individual) for a particular combination of quality and cost of care or performance output.

Most identified frameworks for assessing quality of care and healthcare system performance included the domains *equity* and *efficiency*. While there may be uncertainty regarding many aspects of clinical care, the quality measures presented here have been developed around health care interventions for which there is sound scientific evidence of effectiveness and for which there is a professional consensus and expectation that these services would be provided to all patients. Even after consideration of variation in patients' medical conditions and severity of illness, there should be little deviation from specific quality measures associated with population.

The frameworks intended to assess health system performance include predominantly the quality of care domains of structure, process, and outcomes. For example, in the Donabedian framework, structure is defined as the capability of the context in which care is delivered, including hospitals, buildings, staff, financing, equipment.[129] Processes are the care services provided, while outcomes refers to the health outcomes of patients. Care quality in this model is assessed in the process measures, while outcomes measure quality of care indirectly.[243]

The frameworks aiming to address equity include similar components as the frameworks for determinants of health, including healthcare system, health status, health-related quality of life

and well-being, and non-healthcare determinants of health, such as personal and behavioral factors, social and community networks, general socio-economic, cultural, and environmental conditions.

3.1.3 Findings Guiding Question 1c: In what context have these frameworks been used?

Half of the identified frameworks did not report the context for which it had been developed or applied. Among those that did report, the context varied widely. In general, the frameworks intended to describe and assess quality of healthcare have been used for clinical practice regarding education, direct patient care and leadership, Medicare local indicators, hospital/local health networks, education, training, research, and policy. The frameworks intended to assess health system performance have been used in diverse healthcare settings and among various levels within a delivery system, and in the context of analyzing the admitting process, the point of entry, and input into the hospital system. The frameworks aimed to address equity, disparity, or social determinants of health have been used in the contexts of racial justice and health equity, public health, public policy, youth leadership development, leveraging public and private sector partnerships and resources, and more. Contexts included international jurisdiction (e.g., WHO–Core Health Indicators, European Union Health Promotion Monitoring);[29] national jurisdiction (e.g., U.S. Healthy People 2020);[126] and local jurisdiction (e.g., County Health Rankings published by the Robert Wood Johnson Foundation).[208]

3.1.4 Findings Guiding Question 1d: How do these frameworks intersect with levers and tools available to federal and state governments?

The National Quality Strategy as a national effort to guide quality improvement efforts across the U.S. differentiated nine levers to achieve the aims and priorities: payment; public reporting; learning and technical assistance; certification, accreditation, and regulation; consumer incentives and benefit designs; measurement and feedback; health information technology; workforce development; and innovation and diffusion.[244]

We systematically abstracted any information on how published frameworks and their intended use are associated with levers and tools available to federal and state government such as policy and legislative changes. The table shows all U.S. framework publications.

Table 3. Framework Associations with Levers and Tools Available to Federal and State Governments in U.S. Developed Frameworks

ID	Framework Associations with Levers and Tools Available to Federal and State Governments
Brindis, 2006[36]	Authors report that academic leaders are called upon by the nation's policy makers to help shape policy decisions in determining how and where our health care dollars should be spent. Academic medicine should accelerate its commitment to translating research findings into policy–both in terms of improving quality of care, as well as implications for general population health issues.
Institute of Medicine, 2010[7]	AHRQ and IOM intended to use the update to the framework to help drive national and local action for improving health, value, and equity in U.S. healthcare delivery.
NIMHD, 2017[183]	Policies and laws are a behavioral domain of influence at the societal level on health disparities and minority health. Health care policies are a health care system domain of influence at the societal level on minority health and health disparities.

3. Findings

CMS, 2022[120]	One of the initial actions of the CMS objective to improve quality in high priority clinical areas is to develop dashboards to inform policy decisions, among other things. A success target is to increase alignment across quality initiatives with quality policies.
Samson, 2021[195]	The National Quality Strategy framework includes policies to address health equity in the domains of social, economic, and health system drivers of disparities. In each phase of the framework (underlying health status and non-medical determinants; access to care; experience in the medical care system), key drivers are identified along with examples of policies that might affect the drivers. Authors discusses examples of health equity performance indicators based on the framework, which includes evaluating the impact of a specific policy or the cross-cutting effects of multiple policy interventions that may overlap in the timing of implementation.
Sinaiko, 2019[218]	Findings in the article included input from a panel of experts that included individuals with policy perspectives. Authors note that variation in the vision for patient-centered care has important implications for policy. One domain of the PCC framework is policy: legal and regulatory environment that facilitates and does not inhibit patient centered care (e.g., privacy and informed consent, promoting access to medical education for students of diverse backgrounds).
Health Policy Institute of Ohio, 2004[140]	Policy solutions were offered after presenting the framework, to try to address the issue of health disparities, as well as the challenges associated with each.
Health Resources and Services Administration, 2020[141]	One of the framework components was governance and management, which includes being responsible for managing and implementing policies and plans set by the board. The domain financial sustainability is defined as a health center having planning policies and practices, among other things.
NCQA, 2023[179]	To develop the framework, authors examined public policy statements, among other resources.
Aguilar-Gaxiola, 2014[29]	The matrix shows determinants of health, indicators, and measures by level of jurisdiction (international, national, and local). Authors note the implications of health indicators on policymaking and the work can inform policymakers and the public regarding progress made in improving health.
Adams-Best, 2001[93]	The organization variables component includes policy (and philosophy), and the community variables component includes government policy.
Remington, 2015[208]	The primary goal of the model is to mobilize action toward community health by stimulating interest among policymakers (and the media). Once the media and community leaders are made aware of problem areas, communities can be engaged to enact evidence-informed health policies and programs to improve health outcomes.
Meade, 2015[170]	Authors note that the integrated model can be used by policy makers, healthcare providers and administrators, researchers, advocacy organizations, and individuals with disabilities to begin to identify and address modifiable factors that may lead to more equitable access to healthcare.
Nuckols, 2013[192]	Several new policies have been designed to spur improvements in quality and reduce health care costs in the United States, such as establishing accountable care organizations, incentives for adopting health information technology, and penalties for hospital- acquired complications. When policymakers, researchers, and other decision makers work on a policy issue like this one, a shared framework can create a common understanding of the issues and facilitate the design of analyses.
Gardner, 2010[133]	The framework was created to provide direction to policy makers and measure developers for future performance measure development and application. The American College of Physicians recommends that policy makers and measure developers adopt this clinical performance measurement framework to promote transformational change and improve the quality of health care in the United States.
Javed, 2022[153]	Authors conclude with a set of research and policy recommendations to inform future work in the field, and move a step closer to health equity, based on the framework.
Hurtado, 2001[5]	Authors note that a framework is a way of making explicit the aspects of health care that should be measured to assess quality and define policy accordingly. The framework can be used to encourage measurement and reporting in specific areas to inform national and state policy makers, purchasers, providers, and other specialized audiences. The framework can be used to guide policy and to inform relevant audiences.
CMS, 2022[121]	One of the components of the framework is Priority 2: Assess Causes of Disparities Within CMS Programs, and Address Inequities in Policies and Operations to Close Gaps.
Smedley, 2003[219]	Authors state that the health system is broadly influence by institutional design factors (such as the ease of care access), and financial forces (such as incentives to providers and patients to limit service use and healthcare costs), and that these systems operate within legal and cultural contexts that influence how healthcare is delivered and the behavior of both patients and providers.
Commonwealth Fund, 2006[226]	Authors note that policy changes need to be made as needed based on review of data on performance of all stakeholders in health system. Policies may be implied to align with core goals to improve performance. A high performing health system in the U.S. will likely combine market forces and public policy to achieve its goals. It's important that public policy ensures that all Americans have access to

	the same cost-effective, high-quality care. Public policy needs to take the lead to achieve significant changes in expanding health insurance coverage.
Aday, 1974[245]	The framework views health policy as designed to affect characteristics of the health care delivery system and of the population at risk to bring about changes in the utilization of health care services and in the satisfaction of consumers with those services.
Schoen, 2006[213]	The scorecard provides information, such as gaps between current national performance and benchmarks, to help inform public and private policy action.
National Quality Forum, 2009[185]	NQF convened National Priorities Partnership. Partners agreed to work collaboratively and with policymakers, healthcare leaders, and other stakeholders to develop action plans around the Priorities and to align the drivers of change around common goals. Authors noted efficiency measurement should be designed for continuous learned to inform clinical practice, measure development, policy, and research agenda.
Institute of Medicine, 2005[147]	By measuring and tacking systems-level performance at the community level, it may ultimately be possible to assess the national consequences of policy and financing environments as a whole.
Popovich, 1998[200]	The model includes the domains regulatory standards (i.e. government health care coverage plans, such as Medicare and Medicaid; managed care, such as IPAs, HMOs, PPOs, Department of Health – state and local, OSHA, AHCPR, State Practice Acts, and more).
AHRQ, 2002[94]	Three broad audiences for the quality measures were considered, one of which were public health policy-makers, who would use the information from indicators to target public health interventions.
National Association of County and City Health Officials, 2018[178]	There may be policy implications based on the application of the framework to certain initiatives, but it's not clearly reported.

A few frameworks were developed with the alignment of quality initiatives and policy making in mind, so that the frameworks can be used by policymakers to form a clearer image of what it is they want to measure and the key goals of health policy.[101, 105, 118, 119] For example, in the National Quality Strategy framework, CMS's initial actions include developing dashboards to inform policy decisions and increasing alignment across quality initiatives with policies[120] to improve quality in high priority clinical areas. In our key informant discussions, one key informant suggested building the link of the framework with the policy levers of federal and state governments before applying the framework to track the trends due to policy changes. Other key informants recommended that tracking the effect of policy should be the subject of research publications, rather than being an integral part of the NHQDR.

3.1.5 Guiding Question 1e: How are the frameworks and domains similar or different from the 2010 NASEM framework?

In general, the frameworks intended to describe and assess quality of healthcare are similar to the current 2010 NASEM framework used for the NHQDR in that they include all or some STEEEP (Safe, Timely, Efficient, Effective, Equitable, Patient-Centered) domains,[8] and many also included the components *access to care* and *equity*. Identified frameworks varied regarding inclusion of other domains as shown earlier in Figure 4.

The 2010 NASEM framework lists the crosscutting domains *equity* and *value*. Both have been included in several other frameworks, but with different definitions for the domain *value*. For example, in the Comprehensive Model of Patient Centered Care and Outcomes, *value* represents patient values and cultures.[218] A framework referencing Berwick's triple aim uses the term value in the context of cost effectiveness (best value for public health system resources).[102] Some of the key informants understood value as a reference to value-based care, i.e., a healthcare delivery model that rewards quality of care and patient health outcomes rather than throughput (volume of care services rendered).[246]

Furthermore, the identified frameworks that aim to address equity and the frameworks for determinants of health were generally broader in scope (e.g., governance and leadership, and financial sustainability, social, political, and cultural determinants of health), while the 2010 NASEM framework more narrowly addresses health care delivery.

The 2010 NASEM framework prominently differentiates types of care, i.e., preventive care, acute treatment, and chronic condition management. Only one other identified framework explicitly included types of care; it differentiated a continuum of care, ranging from health promotion, to preventive care, to diagnosis/treatment.[167]

In addition to highlighting similarities, we also noted that almost all frameworks included additional domains not included in the 2010 NASEM framework. We have abstracted these additional domains. The results are presented in Appendix C . Examples included availability, affordability, choice, communications, coverage, dignity, engagement, and experience of care.

Domains varied widely and were often purpose specific. Half of all included frameworks mentioned *health* explicitly, most often in the contexts of patient health status (the 2010 NASEM framework does not include the term *health*). Wellbeing[106, 125, 150] and wellness [152, 235] were also frequent framework components.

Of the identified frameworks, several referred to the term *environment*, both as the practice environment[199] as well as environmental factors as a determinant of patient health.[117] The concept of *social determinants/drivers of health* was integrated in multiple frameworks.[95, 118, 126, 141, 153, 191, 232] The concept of *appropriateness* was also mentioned in identified frameworks, for example culturally and linguistically appropriate care and care resources.[36, 195] *Patient experience* was also frequently part of existing frameworks.[29, 119, 185]

Multiple frameworks incorporated *Donabedian's structure, process, outcome* domains explicitly.[93, 95, 115, 129, 158, 164, 171, 191, 192, 199, 207, 212, 215] The concept of *responsiveness* was also frequently part of frameworks,[101, 119, 145, 155, 175, 216, 217, 220, 232] in particular responsiveness to patient expectations and health goals. Several also included *integrated care* as a feature of the healthcare system.[119, 163, 196, 204] Many frameworks referenced organizational *culture*, for example referencing a quality culture.[150, 164, 194, 204, 216, 218] Furthermore, *sustainability* was repeatedly part of frameworks, often referring to financial sustainability of programs.[106, 109, 141, 162, 175, 182, 204, 207, 234, 235] A further recurrent organizational domain was *productivity* as a performance domain.[162, 169, 216, 220]

In addition to the included domains of care quality, it is also important to determine how the domains are interrelated, i.e., how the individual domains interact within the framework. The current NHQDR framework provides only limited information regarding how the framework domains are connected. The 2010 NASEM report stressed that *care coordination* and *health systems infrastructure* are not necessarily healthcare aims or attributes themselves, but foundational elements, i.e., means to enable improving *effectiveness, safety, timeliness, patient-centeredness, access*, or *efficiency*.[7]

We also systematically reviewed all identified frameworks for any information explaining how the domains fit together in the frameworks. This is documented in Appendix C. Across included frameworks, we found few descriptions of relations between domains. Exceptions include the Donabedian model explicitly stating that structure affects process, which affects outcomes;[129, 158] the relationship was also described in other frameworks[115, 192] citing Donabedian. Furthermore, several frameworks described cross-cutting domains and how these interact with the other framework domains.[99, 101, 106, 117, 119, 135, 166, 194, 195, 230, 231, 234] Which domains were considered cross-cutting varied across frameworks (e.g., *patient-centeredness,*

safety, equity), with *equity* most frequently conceptualized as cross-cutting. One publication stated that all its framework domains interact with each other.[201] One publication presenting a complex, multi-level framework hypothesized that health equity as a goal of the organization leads to collecting health equity information, which leads to community participation and engagement with communities affected by health inequities, which leads to planning and enacting effective strategies to address inequities, which is comprised of addressing determinants of local health inequities and orienting local primary health care services towards health equity.[132] One framework conceptualized person-centered outcomes as a central measure, and that identifying what matters to the person leads to more efficient, effective, and equitable health care.[180]

In other published frameworks, information on the interrelationship of domains in existing frameworks was typically limited to how drivers of health affect individual patients' health[223] or population health more broadly,[183] including health-related behaviors.[130] This included frameworks pointing out how upstream pathways from social determinants of health to racial inequity leads to midstream determinants, which leads to downstream determinants, which then leads to disease.[153]

In addition, several frameworks provided information on which subdomains are part of the domains (e.g., the patient-centered delivery system consists of the patient, care team, health care system, and external context).[218] Some models stated explicitly what the framework sections entail (e.g., one framework outlined that hospital performance is comprised of a patient perspective, financial perspective, quality of care perspective, internal business perspective, and learning and growth perspective).[92] Some of the frameworks provided a broad overview, for example how health system design, policy and context affect healthcare system performance[119] or how policies affect health factors, which then affects health outcomes.[208] Another publication addressed how health status affects access to healthcare.[170]

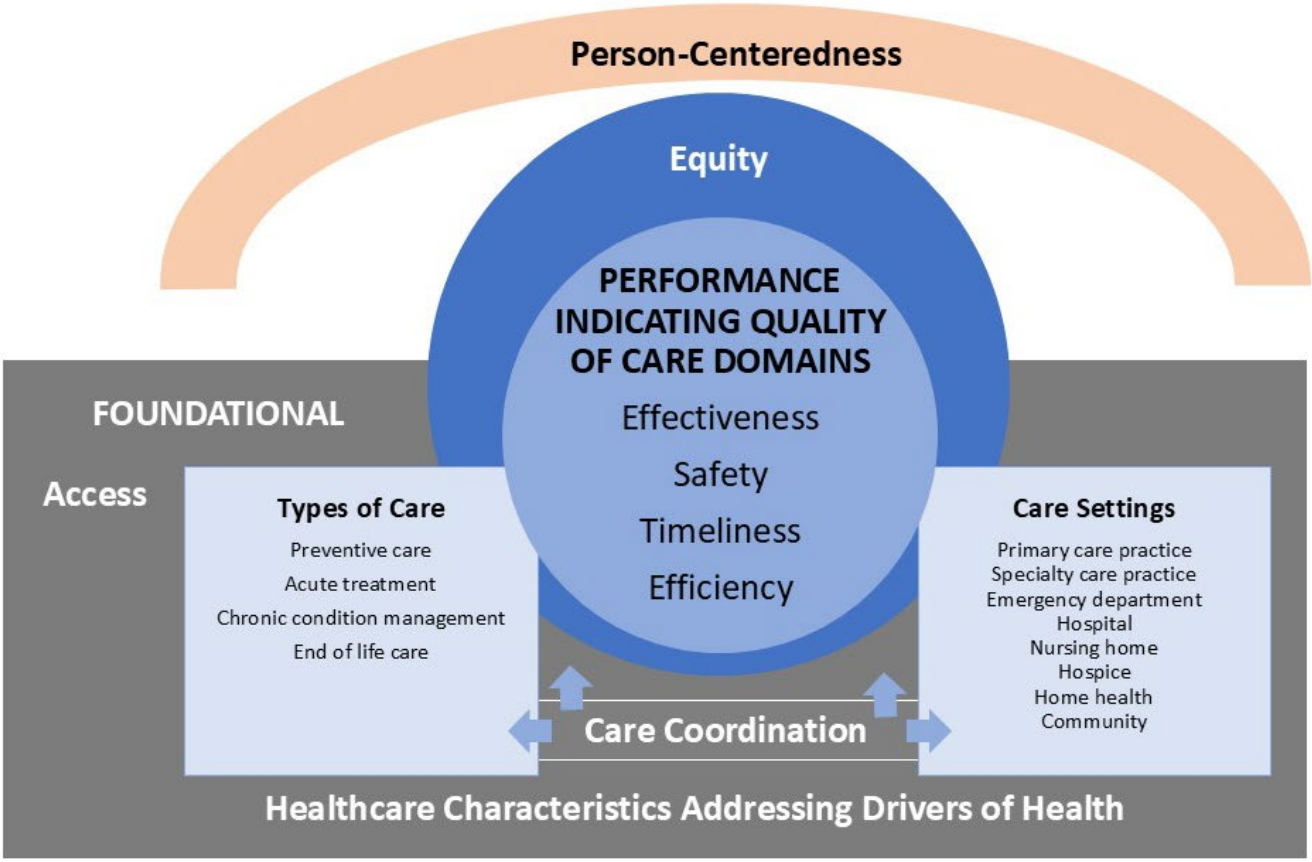
3.2 Main Findings Guiding Question 2: How should the NASEM framework and its domains be updated?

We have assessed each identified framework published in the literature for suitability of being adopted by the NHQDR but did not identify any tool that seems to fit the NHQDR. The annual reports and the online resource are unique in that they provide a thorough and unbiased picture of the current US landscape. The NHQDR does not provide measurement and performance feedback for individual organizations, certifications, or incentives. It does not request specific data and instead uses data available from other sources to compile the report. In addition to the annual report to Congress, the NHQDR online resources are widely used by a very different audience, including researchers and students.

The NHQDR framework has undergone considerable changes throughout the years, both in format and function. We used the result of the last published framework update in 2010 as the basis of our proposed suggestions. Figure 10 shows a proposed framework option/example, which was informed by published frameworks, discussions with key informants, and relevant scientific literature.

3. Findings

Figure 10. Proposed Framework



The proposed framework continues to focus on quality of healthcare, rather than expanding to the health status of the population. The framework includes the domains *person-centeredness, equity, access, effectiveness, safety, timeliness, efficiency*, *coordination*, and *healthcare characteristics addressing drivers of health*. The proposed framework differentiates four examples of types of care, including preventive care, acute treatment, chronic condition management, and end of life care, where quality of care and care disparities measures can be applied for a comprehensive evaluation. In addition, the framework includes examples of different care settings, such as primary care practice, specialty care practice, emergency department, hospital, nursing home, hospice, home care, or the community.

The following provides the definitions of the guiding (*person-centered*), foundational (*access, coordination, healthcare characteristics addressing drivers of health*), performance-indicating (*effectiveness, safety, timeliness, efficiency*), and crosscutting (*equity*) domains below, adapted from definitions in the 2010 NASEM report, building on the STEEEP model.[8]

- *Person-centeredness*: Providing care that is respectful of and responsive to the values, preferences, needs, and care goals of individuals in the context of their community, that guides all clinical decisions. This domain entails a number of different aspects. Care goals may require different levels of support to achieve goals for different people. This

domain is not limited to care needs from a medical standpoint but is centered around a person's perspective and experiences. It should consider the whole person and align with a shift from a disease and symptom-focused to a health and wellbeing-focused approach. Person-centeredness entails that each person is engaged as a partner in their care.[9] What matters to individuals, their caregivers, their families, in the context of their community is the overarching domain that should be the first priority, governing all aspects of care.

- *Equity*: Fair, just, and impartial treatment of all individuals with individuals having fair and just opportunity to attain the highest level of health is the lens through which access to care and quality of the received care is evaluated and disparities are identified. The domain encompasses equity in health and equity in healthcare.
- *Access*: Ability to get needed care. It is traditionally defined as timely use of personal health services to achieve the best possible health outcomes.[149] Access is a broad topic with multiple dimensions spanning insurance coverage, affordability, health literacy, geographic availability, culture, stigma and mistrust. It may entail making quality care more affordable, not just for individuals but also families, employers, and governments,[9] to enable and ensure access to quality care. A health crisis such as the COVID-19 pandemic can foster additional access issues and disparities (e.g., access to digital resources, telehealth).
- *Effectiveness*: Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and misuse, respectively), as well as selecting the most appropriate intervention. Benefits must be weighed against harms and the most appropriate intervention may be no intervention or no medical intervention. It should increasingly be guided by comparative effectiveness data. The domain encompasses effective prevention, screening, diagnosing, and management as well as treatment, in particular for leading causes of mortality[9] such as cardiovascular disease[247] to align with the National Quality Strategy.
- *Safety*: Avoiding, preventing, and reducing harm or risk of harm to patients from the care that is intended to help them.[9] Safety includes the AHRQ Patient Safety Indicators that address potentially avoidable safety events such as in-hospital complications and adverse events following surgeries, procedures, and childbirth.[248] While healthcare can strive to avoid preventable harms, there are inherent trade-offs when considering patient choice, preferences, and characteristics, as well as care services and care systems. In recent years, safety has been assessed in the context of the COVID-19 pandemic, given that the public health emergency disrupted many normal activities in hospitals and other facilities.[90]
- *Timeliness*: Obtaining needed care and minimizing unnecessary and potentially harmful delays in getting care. This domain is unchanged and has been included in the NHQDR framework since its inception.[5] While traditionally anchored in acute care, this domain deserves more attention with regard to prevention and lifestyle changes (e.g., addressing childhood obesity to avoid the development of diabetes in young adults).
- *Efficiency*: Avoiding waste, including waste of resources, equipment, supplies, ideas, energy, time, and duplication of services. The current NHQDR framework defines this domain as maximizing the quality of a comparable unit of health care delivered or unit of health benefit achieved for a given unit of health care resources used.[249] This domain

was introduced in the 2010 NASEM framework revision[7] and remains unchanged. Efficiency was not included in earlier versions of the NHQDR as the committee at the time felt that, in particular the basic aspect of efficiency 'cost per unit of service' was falling outside the purview of a national report focusing on the quality of health care services.[5] However, efficiency is of particular importance to the U.S. healthcare system due to its fragmentation, which can lead to duplication of services (e.g., diagnostic tests in different settings) and wasting patients' time and resources due to lack of coordination.

- *Coordination*: Ensure patients receive well-coordinated care within and across health care organizations, settings, and levels of care, and across services and across time. Care coordination is a proactive approach to bringing together care professionals and providers to meet the needs of service users to ensure that they receive integrated, person-focused care across various settings. Similar to efficiency, coordination of care is of particular importance to the U.S. healthcare system due to its fragmented nature and lack of integration. The implementation of electronic health records aimed to improve care coordination through making communicating and sharing information more efficient[250] and more effective. Coordination can foster continuity of care, the degree to which a series of discrete health care events is experienced by people as coherent and interconnected over time and consistent with their health needs and preferences.[251] As our understanding of drivers of health grows, the coordination may need to include coordination with services outside of healthcare to ensure basic needs are met, including housing, nutrition, and other social needs.
- *Healthcare characteristics addressing drivers of health*: Demonstrating strategies to reduce healthcare disparities and strategies to promote health equity. This domain is not limited to documenting disparities in healthcare but may include strategies that promote health equity through reducing disparities in healthcare and health, through counteracting discrimination, and through compensatory healthcare processes with the goal of achieving equity in health outcomes (e.g., increased screening for at risk populations). This domain may include prevention and initiatives to improve health behavior. It includes social determinants of health, but it is not limited to behavioral or social drivers. Addressing drivers of health may entail working with communities to promote wide use of best practices to enable healthy living[9] (e.g., targeting physical activity, nutrition, or stress).

The proposed framework shows *person-centeredness* as the overarching domain that should guide all aspects of care. It interacts with all other domains in the framework. For example, to ensure person-centered care, healthcare needs to address drivers of health, including social determinants of health. Vice versa, personal experiences are shaped by all other domains (e.g., efficiency, timeliness). *Effectiveness* can mean different things for different people when guided by person-centered care to find the most appropriate care approach. The domain *equity* is depicted as a lens through which we need to view the quality of healthcare. It remains a cross-cutting domain that may influence all other elements of the framework. The domains a*ccess, coordination*, as well as *healthcare characteristics to address drivers of health* are foundational domains that enable the more specific healthcare performance domains *effectiveness, safety, timeliness*, and *efficiency*. Changes in one domain may indicate concurrent or initiate follow up changes in other domains. For example, the domain *healthcare characteristics to address drivers of health* may capture measures undertaken to remove barriers to care, which could be observed

in the domain *access*. All domains can be addressed as structure, process, or outcome measures.[129]

The proposed updates to the framework include several suggested changes. First, the proposed framework suggests changes in the terminology from patient/family-centeredness to *person-centeredness* and changes the position of this domain to an overarching position of the framework. The move represents the importance of this domain to the evaluation of healthcare; *person-centeredness* should guide all healthcare decisions. The renaming also represents in part a paradigm shift from illness (patient) to health and wellbeing (person). Rather than singling out family members in the domain name, the framework leaves it at "person," acknowledging that individuals have different priorities, and the community or specific community members can be as important as family members. We have merged this domain with the ambiguous concept of *value*. *Value* means different things in different frameworks and its meaning has changed over time. In addition, value is a key part of person-centeredness as it describes preferences and goals of healthcare decisions. The domain *equity* has moved to a more central position in the framework, indicating that it is the lens through which quality of care is evaluated and disparities are identified (it has now a more prominent position than in the 2010 NHQDR framework because the crosscutting position is not shared with the concept of value). Furthermore, the updated framework replaced the broad foundational component Health Systems Infrastructure Capabilities with the more specific domain *Healthcare characteristics addressing drivers of health* to increase focus on this important aspect of healthcare.

The proposed framework takes the domain *access* out of the original grid of quality of care components to show that access is foundational to all other care domains. Without entering the healthcare system, several of the healthcare performance domains such as effectiveness and patient safety are irrelevant.

We added "end of life care" back into Types of Care to clarify that end of life care without preventive or curative intent is an explicit part of types of care. End of life care was also included in the 2001 framework for the National Healthcare Quality Report and the 2002 framework for the National Healthcare Disparities Report.[6] By taking the types of care out of a grid as shown in the 2010 NASEM framework conceptualization, we also tried to communicate that the listed types of care are examples, and not a finite list. There are other populations, for example people with long-term disabilities or vulnerable elders,[252] that may require crosscutting services. Finally, the revised framework lists examples of Care Settings. Given the focus on public reporting of quality of care in hospitals, many users of the NHQDR may not realize the broad range of settings. This section is also meant to show only examples rather than an exhaustive list (e.g., it does not call out outpatient surgery, or community clinics). We added *community* as one additional setting where care can take place, including through community engagement[9]. Measuring community initiatives may become increasingly important for the many lifestyle-dependent conditions such as obesity.

3.2.1 Findings Guiding Question 2a: How would existing AHRQ NHQDR measures be reorganized in the updated framework and domains?

The proposed framework can be translated into measurement areas. The main suggested change to the framework is that the types of care areas are not organized in a strict grid anymore. The grid gave the impression that care quality, such as effectiveness, had to be measured for the

three specific types of care, and only those listed types of care should be measured. However, based on discussions with the AHRQ NHQDR team and a review of recent NHQDR reports, we changed the grid structure of the original 2010 NASEM framework to allow for more flexibility and changes in reporting priorities over time.

A second significant change for consideration highlights the role of patients as a person in quality of care. Patients should be central and have a role that guides all aspects of quality of care. In addition, a shift is needed from seeing patients to the whole person. This is consistent with a paradigm change in healthcare and shared decision making that developed from asking *What is the matter?* to *What matters to you?*[242, 253] The proposed framework moves the domain *person-centeredness* to the top of the framework and indicates an umbrella function to implement this change. This domain should guide the choice of measures to identify performance-indicating quality measures that are relevant and important. *Person-centeredness* should be instrumental when selecting measures, but it challenges the implementation and interpretation of results where interventions align with individual preferences rather than universal treatment goals.

Discussions with key informants also highlighted that *access* should be included in the framework in a different way and needs to be monitored closely, since many quality of care domains are only relevant to those that enter the healthcare system. Consequently, we propose repositioning the domain *access* out of the original grid of care indicators to depict access as the first step in a sequence that starts with access to healthcare. Access also remains important once patients have successfully entered the healthcare system, hence the continuation of the domain across types of care and care settings.

Many key informant discussions were centered around drivers of health, in particular social determinants of health. These drivers include a multitude of patient characteristics, health behaviors, community characteristics, environments, contexts, provider behaviors, organizational characteristics, and resources available to patients, the community, and the healthcare system. Further discussions regarding the responsibilities of the healthcare system resulted in the proposed framework addressing drivers of health more specifically rather than system capabilities generally, i.e., *healthcare characteristics addressing drivers of health*. This can include healthcare structures and processes, i.e., aspects that are under the control of the healthcare system. The domain may also capture evidence of the presence or absence of disparities in health outcomes. This domain is also not limited to reducing disparities in healthcare but may include strategies that promote health equity though counteracting discrimination, reducing disparities in healthcare and health, and compensatory healthcare processes with the goal of achieving equity in health outcomes (e.g., increased screening for at risk populations). This entails tailoring prevention and treatment strategies, advice and interventions to the context of people's lives, providing culturally safe care, and trauma and violence-informed care.[132] Furthermore, the domain equity is central to the selection of populations and comparisons.

Multiple key informants indicated that the original grid structure and the three <u>types of care</u> previously included in the framework (preventive care, acute treatment, chronic condition management) should either be removed or expanded. In terms of expansion, the only concrete suggestion was end of life care, i.e., where care has no curative function and is not focused on treating or preventing underlying causes of symptoms. We included a broader box of types of care where the listed types serve as examples. We suggest that they can still be used as chapters in the NHQDR, but more emphasis should be on the overall category (types of care).

Discussions with key informants and the AHRQ NHQDR team also suggested that settings of care that the NHQDR covers should be shown in the framework. The settings and sites of care are meant as examples, not an exhaustive list, especially as the NHQDR needs flexibility to add additional settings or may need to use a different care site structure in the future.

The proposed framework domains could function as chapters or subsections of the NHQDR, both the report and the website. The current (2023) NHQDR is organized by a combination of clinical topics, care settings, structural data, process measures, patient outcomes, and results for priority populations.[90] Expanding to all domains covered in the framework would result in a very long report, even when many of the results could be presented in an appendix. To facilitate readability, the report likely needs to remain selective and highlight areas of interest instead of providing data for all combinations of the included dimensions.

3.2.2 Findings Guiding Question 2b: Are there available measures for new framework domains?

We did not identify specific measures that were reported as missing by key informants, or that were consistently included in published frameworks but that are missing from the original framework.

However, for the suggested domain *equity*, more information on measurement is available. A recent literature review identified multiple examples for three types of measures: approaches focused on determining which existing quality measures are suitable for health equity comparisons; approaches that engage in particular comparisons; and approaches that developed a system for combining different dimensions of health equity into a single summary index.[31] As shown in the evidence table in Appendix C, ASPE provides concrete examples of measures that can be used as measures of health equity, including rates of health literacy, self-reported access to care, rates of screening for social drivers of health, and self-reported health status.[195 28] The NCQA measures maternal and child health, behavioral health, chronic disease, home- and community-based services, and other upstream and downstream elements of health to account for the many factors that drive health.[179] A framework approach focused on community health indicators also provides concrete suggestions for measures of social cohesion (social integration; social networks; social supports; single parent homes; community competence; social capital), social structure (social structure: income equity; racial segregation; political process and power relationships; engagement of non-traditional partners; discrimination), and other aspects of care as documented in detail in Appendix C.[29] Nonetheless, multiple key informants indicated that while our ability to identify and document disparities has increased, measuring health equity remains a challenge.[31]

For the domain *healthcare characteristics addressing drivers of health* that we proposed to replace the original health systems infrastructure capabilities domain, there have also been recent relevant developments. A key resource is the ASPE report that lists measures such as the Clinician/Group's Cultural Competence based on the CAHPS (Consumer Assessment of Healthcare Providers and Systems) Cultural Competence Item Set.[31] Some specific measures include transportation help, patients receiving language services, screening for preferred spoken language for health care, and cultural competency.[31] This is a rapidly growing field and more measures are under development.

We also note that although *person-centeredness* or patient-centeredness was a feature in multiple existing frameworks, we identified few definitions, operationalizations, or measures of person/patient/family-centeredness in general. One publication translated patient-centeredness

into specific structure, process, and outcome measures.[212] Examples are structures to measure and monitor patient-centered culture, engaging patients in managing their care, and collecting patient-reported outcomes; more details are shown in Appendix C. One framework specified the provision of educational resources as an example operationalization of patient-centeredness.[163] Other framework publications provided further descriptions of patient-centeredness, such as respect for patients,[99, 135, 213, 231] but did not suggest specific measures. A quality of care framework that consisted of detailed operationalizations of quality of care in hospitals used patient feedback management as a measure of patient-centeredness and listed other concrete suggestions for effectiveness, safety, or timeliness.[217]

3.2.2.1 Guiding Question 2b-i: Describe measures in terms of their definition, population, years available, geographic representation, data sources, and supporting evidence.

We did not identify specific measures that were reported as missing by key informants, or that were consistently included in published frameworks but that are missing from the original framework. We abstracted all available measures (see Appendix C); however, most framework publications did not provide measures. The few publications that suggested operationalizations of framework domains did not report the population, years available, geographic representation, data sources, supporting evidence, or similar levels of detail.

4. Summary and Implications

This technical brief provides an overview of existing frameworks of quality of care with particular emphasis on equity. As a result of discussions and supporting literature, we proposed updates to the framework guiding the NHQDR to better align with current priorities. Proposed revisions include moving the domain patient-centeredness to the top of the framework and changing it to *person-centeredness*, changing the conceptualization of *access*, expanding types of care, adding care settings covered in the NHQDR, and replacing the general domain of health systems infrastructure capabilities with *healthcare characteristics to address drivers of health*. The identified frameworks are likely relevant to a broader audience interested in quality of care. Hence, we established a unique and comprehensive compendium of frameworks that can be used as a resource in Appendix E.

In addition to the suggestions about next steps (below), discussions with key informants and AHRQ's NHQDR group also highlighted the potential difference in audiences and use of NHQDR information across the available data formats. A framework must serve a function for its purpose, and the purpose is determined by the producer or the end user of the NHQDR. In the case of the producer, an additional challenge is that the NHQDR must incorporate changes over time in response to AHRQ's priorities. Furthermore, the end user group of the NHQDR is likely diverse. The annual, congressionally mandated report that provides a broad overview is a very different resource than the extensive data tools that are available through AHRQ's NHQDR websites. Hence, the proposed framework aims to provide flexibility, rather than add more structure, given that the NHQDR is widely used by very different audiences and likely for different purposes. Furthermore, the original function of the framework was conceptually meant to categorize and help select measures for the NHQDR, hence it was more internally anchored within AHRQ.

The proposed framework still builds strongly on a framework developed in 2001 for the National Healthcare Quality Report and the revised framework developed in 2010 for the NHQDR. We added domains where they seemed appropriate and more in line with the current priorities formulated by AHRQ. We also took out some dimensions that did not align with the current design of the NHQDR, such as removing the domain *value*. We noted that the dimension *value* is sometimes included in quality of care frameworks, but with very different meanings (e.g., referring to patient preferences and culture versus value-based care). A recent scoping review collating definitions of health care shows further conceptualizations of value.[254] The 2010 NHQDR framework update included *value* as a crosscutting domain.[7] However, given that patient values are already included in the patient-centeredness domain and the concept of affordable care is part of the domain access, we removed value as a separate domain from the framework. The proposed framework also emphasizes equity more strongly and introduces the idea of an equity lens to address quality of care The depiction of the domain in the framework acknowledges the importance of *equity* also highlighted in the recently developed Strategic Framework to Guide AHRQ's Patient-Centered Outcomes Research Trust Fund (PCORTF) Investments.[255] Furthermore, in line with the very first conceptualization of the National Healthcare Quality Reports and the National Healthcare Disparities Reports,[1] the proposed framework does not include cost outside of the affordable care concept embedded in the *access* domain. The decision was made to focus on healthcare quality, rather than healthcare costs. Furthermore, the social aspect of value (i.e., healthcare is provided as part of the societal responsibility) and healthcare value to the society is not included in the framework. It may be necessary to re-review the meaning and definition of *value* in the context of the NHQDR over

time, given that value without context can mean many different things and value-based care focuses on health outcomes, not care processes used to achieve the outcomes, which may also introduce a more population-based perspective.[256]

Quality of care measurement is traditionally focused on processes, in part because processes are easier to measure, are under the control of the healthcare system, and are amenable to change, unlike more distal outcome measures. Nonetheless, ultimately patients are not interested in care processes per se, but whether or not their needs are met.[257] An explicit shift from healthcare processes to achieved patient health outcomes will impact the criteria that are applied to select measures in the NHQDR. Currently, the domains of the proposed NHQDR framework explicitly allows structure, process, or outcome measures. A review and potential update of the criteria to prioritize quality of care measures is the next step in a series focused on supporting the update of the NHQDR.

4.1 Strengths and Limitations

We conducted a comprehensive literature review search, talked to key experts, and followed up with numerous organizations who may have published quality of care frameworks. While we reviewed thousands of citations, this work is based on a scoping review, rather than a systematic review of the literature. We screened numerous scientific publications and grey literature sources and relied on input from key informants to suggest sources or frameworks. We used an inclusive definition of frameworks; nonetheless, there are likely other important classifications of healthcare quality that have been missed because the authors did not document them in a framework (e.g., authors may have reported empirical data for a selection of measures which could potentially be translated into a framework).

While we spoke to key content experts in the field, the number of key informants that could be engaged in this project was limited, and there is no doubt a number of important interest holders that could provide additional perspectives. This may include parties outside of the academic and policy realms, such as “disrupters” who may have novel and innovative ideas of how to approach healthcare quality and disparities.

The proposed NHQDR framework differentiates types of care and added care settings. Both aspects are based on the current reporting of the NHQDR,[90] which is now acknowledged in the framework. However, these distinctions may function as a perpetuation of the fragmentation of the U.S. healthcare system. Better integration of care services may make this distinction obsolete in the future.

Finally, the task of this technical brief was to propose an update to the current framework and to add dimensions that had been identified as important but missing from the 2010 framework developed for the NHQDR. An important impetus for revisiting the NHQDR framework was to revisit AHRQ’s priorities and their alignment with the framework. This resulted in some suggested revisions and structural changes. For example, we made *person-centered* care an overarching domain and placed *equity* more centrally as a lens through which healthcare should be viewed. In addition, we highlighted *access* as a foundational domain and revised the healthcare capabilities domain to *healthcare characteristics addressing drivers of health*. This domain focuses specifically on actions undertaken by healthcare organizations to address drivers of health, thereby reducing healthcare disparities and promoting health equity. The proposed framework focuses primarily on healthcare domains that are under the control of the healthcare system and does not include a public health perspective. Therefore, it does not include multiple aspects recently highlighted in a conceptual model supporting strategies to achieve equitable

health care such as structural determinants of health, oppression and structural racism, social drivers of health, non-health care sector partnerships, and societal commitment to equity.[176] Furthermore, there are many domains (e.g., physical/built environment, sociocultural environment) and levels of influence (i.e., individual, interpersonal, community, societal)[98] that are not highlighted in the proposed framework. Future efforts may want to re-review the current proposed update of the framework and decide whether a more radical re-conceptualization is warranted.

4.2 Next Steps

It is crucial that a framework is helpful for the end user. The proposed framework should be evaluated to determine whether it serves its purpose and meaningfully guides the NHQDR, including whether the NHQDR needs a framework. This will require information about the usefulness of the framework, as well as the audience and end users of the NHQDR. For example, the primary end user of the NHQDR framework may be the NHQDR team with the framework supporting the organization or selection of measures. In addition, the annual report to Congress and the NHQDR web-based data tools likely have different audiences, and it should be determined whether the framework works for both. As a first step, this series of products will use examples of measures currently included in the NHQDR, as well as examples of measures that are not currently included in the NHQDR but have been published by professional groups. We will then apply the framework to this collection of measures for selected areas of quality of care, including access to care and patient safety.[258] The application will determine the feasibility and applicability of the framework to quality of care measures. One pragmatic use of the framework that can be implemented easily is to use the framework domains as chapters or subsections of the NHQDR. This is not limited to the annual report, the framework could also organize the website.

The discussions around the domains that should be included in the guiding framework also raised questions regarding the most appropriate scope of the NHQDR. It may be necessary to initiate further discussions within AHRQ and the interagency workgroup supporting the NHQDR to determine to what extent the NHQDR should expand beyond healthcare. A key consideration is to determine whether to expand the NHQDR more explicitly to population health and the drivers of health beyond the healthcare system, including social drivers of health. Advantages of explicitly expanding the scope include getting a better picture of health of the nation's health and pinpointing areas where the U.S. healthcare system is failing its population. Disadvantages include potentially expanding the scope beyond the intended ask as congressionally mandated and consequently evaluating the healthcare industry performance on elements that are largely outside its control (i.e., community characteristics, social determinants of health, health behaviors). We also note that the concept of value is not included as a separate domain; instead, aspects of value are addressed as part of the domains *person-centeredness* and *access*. Future work may need to revisit value to determine whether and where value can be better incorporated into the framework and the NHQDR.

Furthermore, the proposed framework depicts the content of the NHQDR, but it is not inherently action-oriented in terms of embedding strategies for future quality of care improvement or levers for addressing quality problems and evidence of disparities. The framework also restricts to healthcare and does not include other drivers of health. Addressing these issues would likely require additional conceptual work and a broader workgroup effort, bringing together content experts and interest holders in a consensus finding process. This may also involve more interagency collaboration to tackle issues to fully address person-centered

care. The resulting framework should be grounded in the scope of the NHQDR and expectations regarding what the NHQDR should and should not cover.

Finally, future work should re-review key measurement areas and ensure alignment with the proposed framework.

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Abbreviations and Acronyms

AHRQ	Agency for Healthcare Research and Quality
CINAHL	Cumulative Index to Nursing and Allied Health Literature
DEI	Diversity, equity, and inclusion
EPC	Evidence-based Practice Center
IOM	Institute of Medicine
NASEM	National Academies of Sciences, Engineering, and Medicine
SEADS	Submit Supplemental Evidence and Data for Systematic Reviews

Appendix A. Search Strategy

Framework Database Search

Date: 12/8/2023

PubMed
Results - 771
"Healthcare Quality Indicator"[Title/Abstract] OR "Healthcare Quality Indicators"[Title/Abstract] OR "care indicator"[Title/Abstract] OR "care indicators"[Title/Abstract] OR "care quality"[Title/Abstract] OR "Health metric"[Title/Abstract] OR "Health metrics"[Title/Abstract] OR "care metric"[Title/Abstract] OR "care metrics"[Title/Abstract] OR "quality of care"[Title/Abstract] OR "equity in healthcare"[Title/Abstract] OR "healthcare disparity"[Title/Abstract] OR "healthcare disparities"[Title/Abstract] OR "quality indicators, health care"[MeSH Terms]
OR ("benchmarking/organization and administration"[MeSH Terms] OR "benchmarked"[Title/Abstract] OR "benchmarking"[Title/Abstract] OR "benchmark"[Title/Abstract] OR "benchmarks"[Title/Abstract]) AND ("health care"[Title/Abstract] OR "healthcare"[Title/Abstract])
AND
"framework"[Title] OR "frameworks"[Title] OR "conceptual model"[Title] OR "conceptual models"[Title] OR "conceptualization"[Title] OR "logic model"[Title]

APA PsycINFO
Results - 141
Limit – Peer Reviewed
title ("Healthcare Quality Indicator" OR "Healthcare Quality Indicators" OR "care indicator" OR "care indicators" OR "care quality" OR "Health metric" OR "Health metrics" OR "care metric" OR "care metrics" OR "quality of care" OR "equity in healthcare" OR "healthcare disparity" OR "healthcare disparities") OR MAINSUBJECT.EXACT.EXPLODE("Quality of Care")
OR title("benchmarked" OR "benchmarking" OR "benchmark" OR "benchmarks") AND title("health care" OR "healthcare")
AND
title("framework" OR "frameworks" OR "conceptual model" OR "conceptual models" OR "conceptualization" OR "logic model")

CINAHL Complete
Results - 181
Limit – Peer Reviewed
TI("Healthcare Quality Indicator" OR "Healthcare Quality Indicators" OR "care indicator" OR "care indicators" OR "care quality" OR "Health metric" OR "Health metrics" OR "care metric" OR "care metrics" OR "quality of care" OR "equity in healthcare" OR "healthcare disparity" OR "healthcare disparities") OR MH "Quality of Health Care+/ST"
OR TI("benchmarked" OR "benchmarking" OR "benchmark" OR "benchmarks") AND TI("health care" OR "healthcare")

AND
TI("framework" OR "frameworks" OR "conceptual model" OR "conceptual models" OR "conceptualization" OR "logic model")

Social Work Abstracts
Results - 0
Limit – Peer Reviewed
TI("Healthcare Quality Indicator" OR "Healthcare Quality Indicators" OR "care indicator" OR "care indicators" OR "care quality" OR "Health metric" OR "Health metrics" OR "care metric" OR "care metrics" OR "quality of care" OR "equity in healthcare" OR "healthcare disparity" OR "healthcare disparities")
OR TI("benchmarked" OR "benchmarking" OR "benchmark" OR "benchmarks") AND TI("health care" OR "healthcare")
AND
TI("framework" OR "frameworks" OR "conceptual model" OR "conceptual models" OR "conceptualization" OR "logic model")

Cochrane Database of Systematic Reviews
Results - 0
("Healthcare Quality Indicator" OR "Healthcare Quality Indicators" OR "care indicator" OR "care indicators" OR "care quality" OR "Health metric" OR "Health metrics" OR "care metric" OR "care metrics" OR "quality of care" OR "equity in healthcare" OR "healthcare disparity" OR "healthcare disparities")ti OR MeSH descriptor:"quality indicators, health care"
OR
MESH descriptor:"benchmarking MeSH Terms OR ("benchmarked" OR "benchmarking" OR "benchmark" OR "benchmarks"):ti AND ("health care" OR "healthcare"):ti
AND
("framework" OR "frameworks" OR "conceptual model" OR "conceptual models" OR "conceptualization" OR "logic model"):ti

Campbell Collaboration
Results - 0
(Title)“healthcare quality”
(Title)“health care quality”
(Title)“quality of care”
(Title)“care indicator”
(Title)“care indicators”
(Title)“health metrics”
intitle:equity OR intitle:healthcare
intitle:disparities OR intitle:healthcare
intitle:healthcare OR intitle:framework
intitle:healthcare OR intitle:frameworks
intitle:"health care" OR intitle:framework
intitle:"health care" OR intitle:frameworks

FR: Search Info: “Supported operators…the Keyword search field, you can combine terms. For example: intitle:female OR intitle:women will show results containing pages with "female" and "women" in the title.”

Measurement Criteria Scoping Searches

Date: 6/6/2023

PubMed
Results - 5061
"Healthcare Quality Indicator"[Title/Abstract] OR "Healthcare Quality Indicators"[Title/Abstract] OR "care indicator"[Title/Abstract] OR "care indicators"[Title/Abstract] OR "care quality"[Title/Abstract] OR "Health metric"[Title/Abstract] OR "Health metrics"[Title/Abstract] OR "care metric"[Title/Abstract] OR "care metrics"[Title/Abstract] OR "quality of care"[Title/Abstract] OR "equity in healthcare"[Title/Abstract] OR "healthcare disparity"[Title/Abstract] OR "healthcare disparities"[Title/Abstract] OR "quality indicators, health care"[MeSH Terms]
OR
(("benchmarking/organization and administration"[MeSH Terms] OR "benchmarked"[Title/Abstract] OR "benchmarking"[Title/Abstract] OR "benchmark"[Title/Abstract] OR "benchmarks"[Title/Abstract]) AND ("health care"[Title/Abstract] OR "healthcare"[Title/Abstract]))
AND
("framework"[Title/Abstract] OR "frameworks"[Title/Abstract] OR "conceptual model"[Title/Abstract] OR "conceptual models"[Title/Abstract] OR "conceptualization"[Title/Abstract] OR "logic model"[Title/Abstract])

APA PsycINFO
Results – 1406
tiab("Healthcare Quality Indicator" OR "Healthcare Quality Indicators" OR "care indicator" OR "care indicators" OR "care quality" OR "Health metric" OR "Health metrics" OR "care metric" OR "care metrics" OR "quality of care" OR "equity in healthcare" OR "healthcare disparity" OR "healthcare disparities") OR MAINSUBJECT.EXACT.EXPLODE("Quality of Care")
OR
tiab("benchmarked" OR "benchmarking" OR "benchmark" OR "benchmarks") AND tiab(“healthcare” OR “health care”)
AND
tiab("framework" OR "frameworks" OR "conceptual model" OR "conceptual models" OR "conceptualization" OR "logic model")
AND
Limit - Peer reviewed

CINAHL Complete
Results – 3229

"Healthcare Quality Indicator" OR "Healthcare Quality Indicators" OR "care indicator" OR "care indicators" OR "care quality" OR "Health metric" OR "Health metrics" OR "care metric" OR "care metrics" OR "quality of care" OR "equity in healthcare" OR "healthcare disparity" OR "healthcare disparities"
OR
MH "Quality of Health Care+/ST"
OR
("benchmarked" OR "benchmarking" OR "benchmark" OR "benchmarks") AND ("health care" OR "healthcare")
AND
"framework" OR "frameworks" OR "conceptual model" OR "conceptual models" OR "conceptualization" OR "logic model"
Limited: Academic Journals

Social Work Abstracts
Results – 15
"Healthcare Quality Indicator" OR "Healthcare Quality Indicators" OR "care indicator" OR "care indicators" OR "care quality" OR "Health metric" OR "Health metrics" OR "care metric" OR "care metrics" OR "quality of care" OR "equity in healthcare" OR "healthcare disparity" OR "healthcare disparities"
OR
"benchmarked" OR "benchmarking" OR "benchmark" OR "benchmarks" AND "health care" OR "healthcare"
AND
"framework" OR "frameworks" OR "conceptual model" OR "conceptual models" OR "conceptualization" OR "logic model"
Limited to: Peer Reviewed

Cochrane Database of Systematic Reviews
Results – 15
"Healthcare Quality Indicator"[Title/Abstract] OR "Healthcare Quality Indicators"[Title/Abstract] OR "care indicator"[Title/Abstract] OR "care indicators"[Title/Abstract] OR "care quality"[Title/Abstract] OR "Health metric"[Title/Abstract] OR "Health metrics"[Title/Abstract] OR "care metric"[Title/Abstract] OR "care metrics"[Title/Abstract] OR "quality of care"[Title/Abstract] OR "equity in healthcare"[Title/Abstract] OR "healthcare disparity"[Title/Abstract] OR "healthcare disparities"[Title/Abstract] OR "quality indicators, health care"[MeSH Terms]
OR
(("benchmarking"[MeSH Terms] OR "benchmarked"[Title/Abstract] OR "benchmarking"[Title/Abstract] OR "benchmark"[Title/Abstract] OR "benchmarks"[Title/Abstract]) AND
("health care"[Title/Abstract] OR "healthcare"[Title/Abstract]))
AND
("framework"[Title/Abstract] OR "frameworks"[Title/Abstract] OR "conceptual model"[Title/Abstract] OR "conceptual models"[Title/Abstract] OR "conceptualization"[Title/Abstract] OR "logic model"[Title/Abstract])

Campbell Collaboration
Results – 0
“healthcare quality”
“health care quality”
“quality of care”
“care indicator”
“care indicators”
“health metrics”
Equity and healthcare
Disparities and healthcare
Healthcare and framework
Health care and framework

PROSPERO
Results – 483
"Healthcare Quality Indicator" OR "Healthcare Quality Indicators" OR "care indicator" OR "care indicators" OR "care quality" OR "Health metric" OR "Health metrics" OR "care metric" OR "care metrics" OR "quality of care" OR "equity in healthcare" OR "healthcare disparity" OR "healthcare disparities" OR "quality indicators, health care"[MeSH]
OR
("benchmarking [MeSH] OR "benchmarked" OR "benchmarking" OR "benchmark" OR "benchmarks") AND ("health care" OR "healthcare")
AND
("framework" OR "frameworks" OR "conceptual model" OR "conceptual models" OR "conceptualization" OR "logic model")

Grey Literature Sources

Date: 11/27/2023

Robert Wood Johnson Foundation
https://www.rwjf.org
Centers for Medicare and Medicaid Services
https://www.cms.gov
National Academy of Medicine
https://nam.edu
John Hartford Foundation
https://www.johnahartford.org
Department of Health and Human Services
https://www.hhs.gov
Veterans Health Administration
https://www.va.gov
Assistant Secretary for Planning and Evaluation
https://www.aspe.hhs.gov

National Institute on Aging
https://www.nia.nih.gov
Patient-Centered Outcomes Research Institute
https://www.pcori.org
AcademyHealth
https://academyhealth.org
Health Policy Institute of Ohio
https://www.healthpolicyohio.org
National Quality Forum
https://www.qualityforum.org/Home.aspx
Health Evolution
https://www.healthevolution.com
Health Quality Council of Alberta
https://hqca.ca
National Institute on Minority Health and Health Disparities
https://www.nimhd.nih.gov
Health Resources and Services Administration
https://www.hrsa.gov
Rural Health Information Hub
https://www.ruralhealthinfo.org
National Committee for Quality Assurance
https://www.ncqa.org
Bay Area Regional Health Inequities Initiative
https://barhii.org
eLife
https://elifesciences.org
Institute for Healthcare Improvement
https://www.ihi.org
National Association for Healthcare Quality
https://nahq.org
Niagara Health
https://www.niagarahealth.on.ca/site/home
International Learning Collaborative
https://ilccare.org
Mary Black Foundation
https://maryblackfoundation.org
Health Resources in Action
https://hria.org
Massachusetts Health Policy Commission
https://www.mass.gov
World Health Organization
https://www.who.int
University of Delaware
http://dehealthequityguide.weebly.com

Appendix B. List of Included, Background, and Excluded Publications

This appendix shows the list of included, background studies, and excluded studies with reasons for exclusion. Background papers provided more information on the topic or were retained for reference-mining. We recorded only one reason for exclusion per publications.

Included Publications

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Flagged for Upcoming Topics

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Appendix C. Evidence Table

Table C.1. Evidence table

ID	Framework Scope	Framework Domains	Comparison to 2010 NASEM Framework	Process and Appraisal
Abu Jaber, 2022[92] **Name:** Balanced Scorecard-Based Hopsital Performance Measurement Framework Other **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9178100/	**Type of care:** Quality of care Hospital performance **Setting:** Healthcare **Population:** Not specified **Intended use:** To measure hospital performance **Defined:** Financial perspective = asset turnover, return on investment, operating income, return on equity, expense per service unit, adherence to budget Quality perspective = avoidable mortality rate, available morbidity rate, adverse events rate, hospital-acquired infection, unplanned readmission within 48 hours Internal business perspective = length of stay, timeliness of treatment, bed utilization, time from door to therapy, patient turnover Learning perspective = employee satisfaction, employees turnover rate, employee training, process improvement initiatives (i.e., implementation of electronic medical records, implementation of quality improvement principles (i.e., six sigma), use of data warehousing, business intelligence, and predictive analytics Patient perspective = patient satisfaction, complaints per	**Components and included domains:** Financial perspective Quality perspective Internal business perspective Learning perspective Patient perspective Hospital performance **Equity/disparities:** Equity and disparities are not explicitly addressed in this framework. **Context:** N/A	**Similarities:** Both frameworks address healthcare in some way, and includes the domains timeliness, and either patient-centeredness or patient perspective. **Differences:** The balanced-scorecard (BSC) based framework addresses hospital performance specifically, while the 2010 NASEM framework addresses healthcare delivery more generally. The BSC framework includes the components: learning and growth perspective, internal business perspective, and financial perspective, while the 2010 NASEM framework does not. The BSC-based framework explicitly lists quality of care perspective as a component, while the 2010 NASEM framework implicitly considers quality of care. **Policy levers:** N/A **Available measures:** N/A	**Process development:** The construction of the BSC-based framework was grounded in a thorough literature review. This study was conducted in two phases: the first phase is an exploratory study that seeks feedback from healthcare practitioners and academicians to revise and identify the final framework and the performance measurement scale, which was empirically tested in the second stage. Secondly, the scale validity and reliability were conducted to determine the psychometric and theoretical validity of the performance framework as a construct in the hospital **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** Yes After preparing the initial version of the framework, a group of expert academicians and practitioners were consulted to provide feedback about the constructed framework's face validity and its adequacy in measuring hospital performance. The experts' feedback was utilized to devise a performance scale in the second phase. **Evidence-based:** Unclear

	1000 patients, appreciation/complements per 1000 patients, market share			**Defined population:** No (target unclear) **Validity testing status:** Tested The framework (i.e., scale) was tested for dimensionality, reliability, and validity.
Adams-Best, 2001[93] **Name:** Quality Assessment Framework US **Link:** https://www.sciencedirect.com/science/article/abs/pii/S084047041060806X	**Type of care:** Quality of care **Setting:** Care management **Population:** General public **Intended use:** To assess quality of care management **Defined:** Structural patient variables = age, co-morbidities, severity of illness, economic status (homeless), family supports, patient expectations Structural professional variables = experience, skill, appropriateness of treatments Structural organizational variables = staffing patterns, size (tertiary) and design (matrix, programmatic), technology and equipment, management of funds, policy and philosophy Structural community variables = government funding, community funding, community agencies, support groups, staffing and resources Process = flow-charting to identify process inefficiency; observation and interviews to determine patient needs and process efficiency (procedure times, wait times); analyzing and interpreting data with health records and strategic analysts; communicating findings to team members; organizing case conferences with patient and interdisciplinary team members	**Components and included domains:** Structure: patient variables, professional variables, organizational variables, community variables Process: process redesign, analyze and interpret the data, evaluate and monitor, communicate and facilitate, identify change barriers and opportunities, identify process inefficiency, collaborate, critical pathways Outcomes: patient variables, professional variables, organizational variables, community variables Patient Patient care process team **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** Analyzing the admitting process, the point of entry, and input into the hospital system	**Similarities:** Both frameworks include access to care. **Differences:** The depicted framework has a structure, process, and outcomes (donabedian) design, while the 2010 NASEM framework does not. The model contains components such as patient variables, professional variables, organizational variables, and community variables, while the 2010 NASEM framework does not. The framework is focused on care management with more specifics, while the 2010 NASEM framework addresses health care delivery more broadly. **Policy levers:** The organization variables component includes policy (and philosophy), and the community variables component includes government policy. **Available measures:** Structure: patient variables, professional variables, organizational variables, community variables Process: process redesign, analyze and interpret the data, evaluate and monitor, communicate and facilitate, identify change barriers and opportunities, identify process inefficiency, collaborate, critical	**Process development:** Not reported in detail, but there was indication of a literature review on existing frameworksrelated to care management and care management in general. **Source/Endorsements:** No Model suggested by individual author **Stakeholder engagement:** No Model suggested by individual author **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to a different context

	to determine discharge needs and plan; seeking opportunities to convert inpatient activity to outpatient activity clinical pathways and variance tracking; comparing data with benchmark data; identifying best practices and barriers to change; working collaboratively with the team to develop plans of improvement; process redesign and corrective actions; monitoring and evaluation of outcomes Patient outcome variables = clinical (laboratory values, vital signs), functional (emotional and behavioral status, quality of life), severity of illness, knowledge, satisfaction Professional outcome variables = technical proficiency, appropriateness of treatments (cesarean section rates), complications and incident reports, LOS, practitioner satisfaction Organizational outcome variables = access to care, cost and financial indicators (average cost per case, LOS), readmission rates, complications (falls), mortality and morbidity, workload and staff turn over Community outcome variables = ability to retro-transfer, ability to discharge more acute patients into the community, number of alternate level of care patients in hospital, postnatal follow up		pathways Outcomes: patient variables, professional variables, organizational variables, community variables Patient care process team Structural patient variables: age, co-morbidities, severity of illness, economic status (homeless), family supports, patient expectations Structural professional variables: experience, skill, appropriateness of treatments Structural organizational variables: staffing patterns, size (tertiary) and design (matrix, programmatic), technology and equipment, management of funds, policy and philosophy Structural community variables: government funding, community funding, community agencies, support groups, staffing and resources Process: flow-charting to identify process inefficiency; observation and interviews to determine patient needs and process efficiency (procedure times, wait times); analyzing and interpreting data with health records and strategic analysts; communicating findings to team members; organizing case conferences with patient and interdisciplinary team members to determine discharge needs and plan; seeking opportunities to convert inpatient activity to outpatient activity clinical pathways and variance tracking; comparing data with benchmark data; identifying best practices and barriers to change; working collaboratively with the team to	

			develop plans of improvement; process redesign and corrective actions; monitoring and evaluation of outcomes Patient outcome variables: clinical (laboratory values, vital signs), functional (emotional and behavioral status, quality of life), severity of illness, knowledge, satisfaction Professional outcome variables: technical proficiency, appropriateness of treatments (cesarean section rates), complications and incident reports, LOS, practitioner satisfaction Organizational outcome variables: cost and financial indicators (average cost per case, LOS), readmission rates, complications (falls), mortality and morbidity, workload and staff turn over Community outcome variables: ability to retro-transfer, ability to discharge more acute patients into the community, number of alternate level of care patients in hospital, postnatal follow up	
Aguilar-Gaxiola, 2014[29] **Name:** Matrix of Determinants of Health, Indicators, and Measures by Level of Jurisdiction US **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4124598/	**Type of care:** Other Population health (health indicators), service quality one aspect **Setting:** N/A **Population:** General public **Intended use:** To help improve the public's health and reduce health disparities **Defined:** Health system services = access to health care provider, infectious disease and vaccination rates, cost of health care and insurance coverage, preventive services and	**Components and included domains:** Determinants of health: Health system services General health status Health-related quality of life and well-being Personal and behavioral factors Community socioeconomic composition Disparities Social cohesion Social structure **Equity/disparities:** The framework itself was developed	**Similarities:** Both frameworks consider access to care addresses either equity or disparities. **Differences:** The framework by Aguilar-Gaxiola et al. addresses health disparities and is broader, while the 2010 NASEM framework more narrowly addresses health care delivery. **Policy levers:** The matrix shows determinants of health, indicators, and measures by level of jurisdiction (international, national, local).	**Process development:** Authors reviewed relevant literature, including historical and government-related uses of health indicators, used the CTSA Community Engagement Logic Model, used a classification system arranged in a hierarchical structure providing supra-and subtype relationships, uncovered common concepts across the literature that, when compiled, fell into three ordered and nested categories, synthesized

	screenings, process measures, outcomes measures, patient experience measures, preventable hospitalizations, structural measures, composite measures General health status = life expectancy, infant mortality, birth outcomes, healthy life expectancy, year of potential life lost, physically and mentally unhealthy days, self-assessed health status, limitation of activity, mental health/psychological stress, unintended injury Health-related quality of life and well-being = chronic disease prevalence; physical, mental, and social-related quality of life; well-being/satisfaction; participation in common activities Personal and behavioral factors = lifestyle choice/health related behaviors; cultural beliefs and values; early childhood experiences; language and literacy; alcohol/drug use; spirituality Community socioeconomic composition = level of education; type of employment; unemployment; income; income security; poverty rate; affordable housing; bankruptcy rates; school system; foreclosures; homelessness; quality of housing; industry/built environment; natural environment; violence/crime Disparities = race/ethnicity; gender; physical and mental ability; geography	to address and help reduce health disparities. **Context:** International Jurisdiction (e.g., WHO--Core Health Indicators, European Union Health Promotion Monitoring); National Jurisdiction (e.g., U.S. Healthy People 2020, Institute of Medicine--U.S. Health Indicators); Local Jurisdiction (e.g., County Health Rankings--RWJF and University of Wisconsin)	Authors note the implications of health indicators on policymaking, and that this work can inform policymakers and the public on progress made in improving health. **Available measures:** Health system services: access to health care provider, infectious disease and vaccination rates, cost of health care and insurance coverage, preventive services and screenings, process measures, outcomes measures, patient experience measures, preventable hospitalizations, structural measures, composite measures General health status: life expectancy, infant mortality, birth outcomes, healthy life expectancy, year of potential life lost, physically and mentally unhealthy days, self-assessed health status, limitation of activity, mental health/psychological stress, unintended injury Health-related quality of life and well-being: chronic disease prevalence; physical, mental, and social-related quality of life; well-being/satisfaction; participation in common activities Personal and behavioral factors: lifestyle choice/health related behaviors; cultural beliefs and values; early childhood experiences; language and literacy; alcohol/drug use; spirituality Community socioeconomic composition: level of education;	the use of indicators and measurement terms in 21 indicator projects found in the literature, and found a simple hierarchy that can be expressed as: determinants of health have categories of community health indicators that include specific quantifiable measurements. **Source/Endorsements:** Yes Clinical and Translational Science Awards Consortium's Community Engagement Key Function Committee **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) General public **Validity testing status:** Tested Applied to different context

	Social cohesion = social integration; social networks; social supports; single parent homes; community competence; social capital Social structure = income equity; racial segregation; political process and power relationships; engagement of non-traditional partners; discrimination		type of employment; unemployment; income; income security; poverty rate; affordable housing; bankruptcy rates; school system; foreclosures; homelessness; quality of housing; industry/built environment; natural environment; violence/crime Disparities: race/ethnicity; gender; physical and mental ability; geography Social cohesion: social integration; social networks; social supports; single parent homes; community competence; social capital Social structure: income equity; racial segregation; political process and power relationships; engagement of non-traditional partners; discrimination	
AHRQ, 2002[94] **Name:** N/A US **Link:** https://www.ahrq.gov/downloads/pub/inpatqi/iqi_guide.pdf	**Type of care:** Quality of care **Setting:** Inpatient/hospital **Population:** General US population **Intended use:** To address quality of care in hospitals **Defined:** Volume indicators = proxy, or indirect, measures of quality Mortality indicators for inpatient procedures = procedures for which mortality has been shown to vary across institutions and for which there is evidence that high mortality may be associated with poorer quality of care Mortality indicators for inpatient conditions = conditions for which mortally has been shown	**Components and included domains:** Volume indicators Mortality indicators for inpatient procedures Mortality indicators for inpatient conditions Utilization indicators **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** Has been used to represent current state-of-the-art in measuring the quality of hospital care through analysis of inpatient discharge data	**Similarities:** Both frameworks addresses health care delivery in some way. **Differences:** The AHRQ framework addresses inpatient/hospital quality of care specifically, while the 2010 NASEM framework addresses healthcare delivery more broadly. There is no overlap in domains/components between the two frameworks. **Policy levers:** Three broad audiences for the quality measures were considered, one of which were public health policy-makers, who would use the information from indicators to target public health interventions.	**Process development:** N/A **Source/Endorsements:** Yes AHRQ **Stakeholder engagement:** No Project team **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Unclear Not reported, but this process has been used by AHRQ in previous years

	to vary substantially across institutions and for which evidence suggests that high mortality may be associated with deficiencies in the quality of care Utilization indicators = examine procedures whose use varies significantly across hospitals and for which questions have been raised about overuse, underuse, or misuse		**Available measures:** Volume indicators: esophageal resection volume, pancreatic resection volume, pediatric heart surgery volume, abdominal aortic aneurysm repair volume, coronary artery bypass graft volume, percutaneous transluminal coronary angioplasty volume, carotid endarterectomy volume Mortality indicators for inpatient procedures: esophageal resection mortality rate, pancreatic resection mortality rate, pediatric heart surgery mortality rate, AAA repair mortality rate, CABG mortality rate, PTCA mortality rate, CEA morality rate, craniotomy mortality rate, hip replacement mortality rate Mortality indicators for inpatient conditions: acute myocardial infarction mortality rate, congestive heart failure mortally rate, acute stroke morality rate, GI hemorrhage mortality rate, hip fracture mortality rate, pneumonia mortally rate Utilization indicators - provider (hospital) level: cesarean section delivery rate, vaginal birth after cesarean rate, laparoscopic cholecstectomy rate, incidental appendectomy among the elderly rate, bilateral cardiac catheterization rate Utilization indicates - area level: CABG rate, PTCA rate, hysterectomy rate, laminectomy rate	
AHRQ, 2015[8]	**Type of care:** Quality of care **Setting:** Healthcare	**Components and included domains:** Safe	**Similarities:** All six domains of the STEEEP framework are	**Process development:** N/A

Name: STEEEP (Six Domains of Healthcare Quality) US **Link:** https://www.ahrq.gov/talkingquality/measures/six-domains.html	**Population:** Those involved in healthcare delivery **Intended use:** To help measure quality of healthcare **Defined:** Safe: Avoiding harm to patients from the care that is intended to help them. Effective: Providing services based on scientific knowledge to all who could benefit and refraining from providing services to those not likely to benefit (avoiding underuse and misuse, respectively). Patient-centered: Providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions. Timely: Reducing waits and sometimes harmful delays for both those who receive and those who give care. Efficient: Avoiding waste, including waste of equipment, supplies, ideas, and energy. Equitable: Providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status.	Effective Patient-centered Timely Efficient Equitable **Equity/disparities:** Equity is one of the six domains of the framework. **Context:** N/A	included in the 2010 NASEM framework. **Differences:** The STEEEP framework only contains the 6 domains, while the 2010 framework has other components. Equity is a domain in the STEEEP framework, while it is a crosscutting dimension in the 2010 NASEM framework. **Policy levers:** N/A **Available measures:** Structural measures: whether the healthcare organization uses electronic medical records or medication order entry systems; number or proportion of board-certified physicians; ratio of providers to patients Process measures: % of people receiving preventive services (such as mammograms or immunizations); % of people with diabetes who had their blood sugar tested and controlled Outcome measures: % of patients who died as a result of surgery (surgical mortality rates); rate of surgical complications or hospital-acquired infections	**Source/Endorsements:** Yes AHRQ **Stakeholder engagement:** No Model suggested by organization, drawn from previous models/research **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically
AHRQ, 2018[95] **Name:** NQMC Measure Domain Definitions US **Link:** https://www.ahrq.gov/gam/summaries/domain-definitions/index.html	**Type of care:** Quality of care **Setting:** Healthcare **Population:** US population **Intended use:** To measure healthcare delivery **Defined:** Process = a process of care is a health-related activity performed for, on behalf of, or by a patient	**Components and included domains:** Clinical quality measures: Process Access Outcome Structure Patient experience Related healthcare delivery measures: User-enrollee health state	**Similarities:** Both framework address healthcare delivery, and include access, effectiveness, timeliness, efficiency, and health systems infrastructure capabilities. **Differences:** The NQMC framework includes social determinants of health, while	**Process development:** N/A **Source/Endorsements:** Yes AHRQ **Stakeholder engagement:** No Suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail)

	Access = the attainment of timely and appropriate healthcare by patients or enrollees of a healthcare organization or clinician Outcome a health state of a patient resulting from healthcare Structure = a feature of a healthcare organization or clinician related to the capacity to provide high quality healthcare Patient experience = a patient's or enrollee's report of observations of an participation in healthcare, or assessment of any resulting change in their health User-enrollee health state = the health status of a group of persons identified by enrollment in a health plan or through use of clinical services Management = a feature of a healthcare organization related to the administration and oversight of facilities, organizations, teams, professionals, and staff that deliver health services to individuals or populations Use of services = the provision of a service to, on behalf of, or by a group of persons identified by enrollment in a health plan or thorough use of clinical services Cost = the monetary or resource units expended by a healthcare organization or clinician to deliver healthcare to individuals or populations; cost measures are computed from data in monetary or resource units	Management Use of services Cost Clinical efficiency measures: Efficiency Population health quality measures: Population process Population access Population outcome Population structure Population experience Related population health measures: Population health state Population management Population use of services Population cost Population health knowledge Social determinants of health Environment Population efficiency measures: Population efficiency **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** N/A	**Validity testing status:** Not tested No indication that this has been tested empirically

	Efficiency = measure of the relationship between a specific level of quality of healthcare provided and the resources used to provide that care Population process = a public health-related practice or service performed for, on behalf of, or by a population Population access = the timely and appropriate receipt of a public health intervention by a population Population outcome = health state of a population resulting from a public health intervention Population structure = a feature of a public health program related to its capacity to provide high quality public health services to a population Population experience = the report of the members of a population concerning observations of and participation in public health programs Population health state = health status of a population Population management = a feature of a public health system that is relevant to the system's administration, oversight, or staff Population use of services = the provision of service to, on behalf of, or use by a population Population cost = monetary or resource units expended to deliver public health interventions to a population; cost measures are computed from data in monetary or resource units			

	Population health knowledge = the awareness and understanding of health-related information such as risk factors, prevention strategies, or treatment recommendations Social determinants of health = characteristics of a population related to social position or economic status, such as age, gender, poverty status, that evidence has shown to be related to health states Environment = the conditions outside of the healthcare delivery system that may influence the health of a population Population efficiency = the amount of resources used to attain a specific level of quality on measures related to maintaining or improving the health of a population			
Alami, 2023[97] **Name:** Sextuple Aim Unclear/Not reported **Link:** https://onlinelibrary.wiley.com/doi/full/10.1002/hpm.3616	**Type of care:** Quality of care **Setting:** Healthcare delivery **Population:** General population **Intended use:** To expand the Quintuple Aim by adding environmental sustainability as an aim **Defined:** N/A	**Components and included domains:** Quality and experience of patient care Population health Quality of work and satisfaction of healthcare providers Equity and inclusion Cost reduction Environmental sustainability **Equity/disparities:** Equity and inclusion is a domain of the framework. **Context:** N/A	**Similarities:** Both frameworks address health system delivery. **Differences:** This framework includes Quality and experience of patient care, Population health, Quality of work and satisfaction of healthcare providers, Cost reduction, and Environmental sustainability, while the 2010 NASEM framework does not. **Policy levers:** Preventive health policies and programs, as well as integrated primary and community-based care may simultaneously contribute to equity, population health and environmental sustainability. New procurement policies should encourage the purchase	**Process development:** Not reported **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** No **Defined population:** No (target unclear) **Validity testing status:** Not tested No indication that this model has been tested empirically

			of reusable and sustainable products and force suppliers to report their products' lifecycle carbon emissions. Healthcare providers, managers, policymakers, industries, civil society, and the public must now see environmental sustainability as the logical extension of the five cardinal aims of improving quality and experience of patient care, population health, quality of work and satisfaction of providers, equity and inclusion, and cost control. **Available measures:** N/A	
Al-Ghamdi, 2023[96] **Name:** Health system performance indicators framework Saudi Arabia **Link:** https://www.sciencedirect.com/science/article/pii/S1876034122003707?via%3Dihub	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Saudi Arabia **Intended use:** To help measure performance of the health system in Saudi Arabia **Defined:** Spend, cost, and efficiency = workforce, spend, hospital stay, density, cost, beds, availability of medication Safety = compliance, events, infection, readmission, readmission by department Effectiveness = evidence based practice, maternity, condition specific effectiveness Access = care coverage, technology, time to care, proximity to care, utilization Experience = care coordination, communication, overall rating, shared decision making, workforce experience Outcomes = quality of life, perception of health, mortality, functionality	**Components and included domains:** Spend, cost, and efficiency Safety Effectiveness Access Experience Outcomes **Equity/disparities:** The framework doesn't explicitly address equity and disparities. **Context:** N/A	**Similarities:** Both frameworks address health care/health system, and include safety, effectiveness, access, and care coordination. **Differences:** The framework in Saudi Arabia includes components such as spend, cost, and efficiency, including hospital stay, density, beds, etc.; outcomes, including mortality, functionality, quality of life, and perception of health; and experience, including overall rating, communication, and workforce experience, that the 2010 NASEM framework does not. The framework in Saudi Arabia has a wide range of indicators integrated into the framework, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** Awareness and education: health literacy rate; completion	**Process development:** Key Input Analysis, Hierarchy Design, Indicator Analysis and Selection, and Indicator Profile Development. Examined the following components' remits and roles, reporting mechanisms and channels, and performance indicators across all pertinent National Health agencies, by conducting a SWOT analysis of each of the components across the ecosystem. Engagement with the Steering Committee members was achieved through research and interviews. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes Input on designing the framework **Evidence-based:** No **Defined population:** Yes (framework target described in detail)

			rate (primary education, lower secondary education, upper secondary education) Mortality by cause: COVID-19 cases - deaths; tuberculosis mortality rate (per 100,000 population); malaria mortality rate (per 100,000 population); communicable diseases - dengue mortality rate; traffic accidents - death rate due to road traffic injuries; suicide - suicide rate (per 100,000 population); premature NCDs - premature noncommunicable disease mortality; maturity - maternal mortality ratio (per 100,000 live birth); environmental water - mortality rate attributed to unsafe water, unsafe sanitation, and lack of hygiene (exposure to unsafe water, sanitation and hygiene for all (WASH) services); environmental - air quality - mortality attributable to joint effects of household and ambient air pollution; mortality rate due to cardiovascular disease, cancer, diabetes, and chronic respiratory diseases Mortality by age: mortality rate Life expectancy: life expectancy at birth; health expectancy - health life years Prevalence: population (15 years and above) who suffer from a chronic disease by name of diagnosed disease Injuries: number of serious injuries resulting from traffic accidents per 100,000 population Incidence (incidence of communicable diseases): TB	**Validity testing status:** Not tested No indication that the model has been tested empirically

			incidence (per 100,000 population); malaria incidence rate (per 1000 population); incidence rate of rubella; incidence rates of measles; incidence rate of HCV; incidence of meningococcal meningitis in KSA; HIV incidence (per 1000 population); estimated number of new hepatitis B infections per 100,000 population in a given year Incidence: incidence of heart attacks (acute coronary events); cancer incidence rate, by type of cancer (per 100,000 population) Mental well- being: proportion of adults with psychological distress Screening: % of PHCC visitors (adults) screened for COPD; % of women aged 40-69 years screened for breast cancer using mammogram; % of PHCC visitors aged 50 years and above screened for colorectal cancer by fecal immunochemical test; % of PHCC visitors (40 years and above) screened for dyslipidemia; % of PHCC visitor (40 years and above) screened for diabetes; % of PHCC visitors (40 years and above) screened for diabetes; % of PHCC visitors (2 years and above) screened for obesity and overweight; % of PHCC visitors (18 years and above) screened for hypertension Program: percentage improvement resulting from National Prevention Program;	

			number of National Prevention Programs for NCDs Immunization: % of specific communicable disease that achieved targeted decrease; % of targeted population vaccinated with seasonal influenza vaccine; immunization coverage rate by vaccine for each vaccine in the National schedule Care coverage: births attended by skilled healthcare personnel; % of women aged 15-49 who received 4 or more antenatal care visits Socio-economic: unemployment rate, by sex, age, and persons with disabilities; promotion of population living below the National poverty line, by sex and age Function: age-standardized prevalence of raised blood pressure among persons aged 18+ years; age-standardized prevalence of overweight and obesity in persons aged 18+ years; incidence of low birth weight among newborns; children under 5 years who are overweight Environmental factors: proportion of population using safety managed sanitation services; proportion of population using safely managed drinking water services; air pollution level in cities (particulate matter (PM2.5)) Demographics: total population (millions of people); population growth; population by sex/age; % of people aged 65 and older	

			Child development: promotion of children under 5 years of age who are developmentally on track in health, learning and psychosocial well-being; Behavioral: population (15 years and over) by number of eating fruits and vegetables servings per day and Age Group; physical activity; prevalence of smoking	
Arah, 2003[99] Arah OA, Custers T, Klazinga NS. Conceptual Working Paper on the Expansion of the Key Dimensions of Hospital Performance. 2nd WHO Workshop on Hospital Performance Measurement, Barcelona, Spain, 21 – 22 March 2003. Barcelona: WHO European Office for Integr **Name:** A conceptual model for hospital performance Multiple countries **Link:** https://www.researchgate.net/publication/254902535_Updating_the_key_dimensions_of_hospital_performance_the_move_towards_a_theoretical_framework#fullTextFileContent	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Europe **Intended use:** To highlight the key dimensions of hospital performance **Defined:** Clinical effectiveness = a hospital, in line with the current state of knowledge, appropriately and competently delivers clinical care or services to, and achieves desired outcomes for all patients likely to benefit most Efficiency = input related to outputs of care; maximal use of available technology for best possible care; efficient staff ratios Staff orientation = practice environment; perspectives and recognition of individual needs; health promotion activities and safety initiatives; behavioral responses and health status Responsive governance = system/community integration; public health orientation Safety = patient safety; staff safety; environmental safety Patient-centeredness = client orientation; respect for patients	**Components and included domains:** Clinical effectiveness Efficiency Staff orientation Responsive governance Safety Patient-centeredness **Equity/disparities:** Equity concerns are grouped under the Responsive Governance domain, and consider as part of the public health orientation sub-dimension. **Context:** N/A	**Similarities:** Both frameworks include effectiveness, efficiency, safety, and patient-centeredness. **Differences:** The framework by Arah et al. addresses hospitals specifically, while the 2010 NASEM framework addresses healthcare delivery more broadly. The hospital framework includes the dimensions staff orientation and responsive governance, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** N/A	**Process development:** Not reported; however, there is mention that a workshop was held where experts were involved and provided input on updating the key dimensions and sub-dimensions of hospital performance. While the sub-dimensions have not been fully developed, a framework with the dimensions was put forth. **Source/Endorsements:** Yes WHO **Stakeholder engagement:** Yes Meetings to get input on the dimensions and sub-dimensions of the framework, and overall development of framework **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically

Arah, 2006[101] **Name:** Conceptual framework for OECD HCQI Project Multiple countries **Link:** https://academic.oup.com/intqhc/article/18/suppl_1/5/1798473?login=false	**Type of care:** Quality of care Health care quality, but includes determinants of health **Setting:** Healthcare **Population:** OECD member countries population **Intended use:** Outline the main concepts and domains of performance that should be captured for the current and subsequent phases of the OECD's HCQI project **Defined:** Health status = health conditions, human function and quality of life, life expectancy and well-being, mortality Non-healthcare determinants of health = health behaviors and lifestyle, personal or host resources, socio-economic conditions and environment, physical environment Dimensions of healthcare performance = quality, effectiveness, safety, responsiveness/ patient-centeredness, access, accessibility, cost/expenditure, equity, efficiency (macro- and micro-efficiency) Healthcare needs = staying healthy, getting better, living with illness or disability, coping with end-of-life Health system design and context = other country-related determinants of performance, health system delivery features	**Components and included domains:** Health status Non-healthcare determinants of health Healthcare system performance: dimensions of healthcare performance, healthcare needs Health system design and context Equity Efficiency **Equity/disparities:** Equity should be part of the healthcare system and may influence non-healthcare determinants of health and health status **Context:** The Netherlands was the first country to apply this OECD framework to its biennial health care system performance report.	**Similarities:** Both frameworks have very similar domains including effectiveness, efficiency, equity, access, patient-centeredness, and safety. Both frameworks addresses healthcare delivery. Equity seems to be a cross-cutting dimension in both frameworks. **Differences:** The OECD framework includes other components such as health status domains and non-healthcare determinants of health. **Policy levers:** The framework recognizes the key aims of health policy. The framework can be used by policymakers (and researchers) to form a clearer image of what it is they want to measure and the key goals of health policy, and the framework was developed with that in mind. **Available measures:** N/A	**Process development:** The proposed framework builds on the common dimensions of performance which are incorporated into a model that borrows heavily from the Institute of Medicine's national health care quality indicator framework, developed for the USA. It also relies on a modification of the Canadian Health Indicator Framework and its adaptations, seen in Australia and within the ECHI Project, and on the WHO and OECD proposals for identifying key economic and social goals for health policy. **Source/Endorsements:** Yes OECD **Stakeholder engagement:** Yes An Expert Group advises the OECD on the HCQI project including the development of this framework **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied in different context
Ashton, 2015[102] **Name:** Integrate Performance Incentive Framework New Zealand	**Type of care:** Quality of care Health system performance **Setting:** Health system performance **Population:** New Zealand	**Components and included domains:** Triple Aims: Improved health and equity for all populations; Best value for public health system resources;	**Similarities:** Both frameworks include equity, value, safety, types of care, access, and health systems infrastructure capabilities. Effectiveness is	**Process development:** Not clearly reported, but did state that measures within the IPIF will be set at two levels: the system level, where measures

Link: https://pubmed.ncbi.nlm.nih.gov/25979415/	**Intended use:** To measure the performance of the New Zealand health system **Defined:** Triple Aims: Improved health and equity for all populations; Best value for public health system resources; Improved quality, safety, and experience of care = N/A Life stage (system level measures + local contributory measures) = N/A Life stage - Improved health and equity for all populations = Healthy start (conception to 1 year) - enrolled in PHO by 3 month + local contributory measures, increased immunization + local contributory measures; Healthy child - before school checks + local contributory measures; Healthy adolescence; Healthy adulthood; Healthy aging Life stage - Best value for public health system resources = Standardized number of acute inpatient bed days per capita + local contributory measures; Reduced variation in tests, prescriptions, referrals + local contributory measures Life stage - Improved quality, safety and experience of care = hospital admissions due to falls + local contributory measures; Hospital admissions due to medication errors + local contributory measures Capability and capacity indicators: Enabling leadership = Shift in investment from secondary to primary/community care;	Improved quality, safety, and experience of care Life stage (system level measures + local contributory measures) Capability and capacity indicators: Enabling leadership; Enabling access **Equity/disparities:** Improving health and equity for all populations is one of the components of the framework. **Context:** N/A	arguably implicitly included in the IPIF under the 'improved health and equity for all populations' component. **Differences:** The IPIF includes the Triple Aims, while the 2010 NASEM framework does not. The IPIF also includes capability and capacity indicators, enabling leadership, and life stage, while the 2010 NASEM framework does not. **Policy levers:** The report was a co-production by the Ministry and the widerhealth sector, emphasizing the notion that the design and implementation of the IPIF is a collaboration between the Ministry and the sector. Six work streams have been identified, each with co-leads from the Ministry and the sector, and a Joint Project Steering Group has been appointed with membership including clinical expertise (in both general practice and hospital services), management, contracting, performance monitoring and policy. A policymaking process is discussed in regards to the IPIF framework's future implications. **Available measures:** N/A	are set nationally, and the local district level, where contributory measures will be selected by local alliances between DHBs, PHOs and other key stakeholders. The idea is that, for each system level measure, each district must select from a common library a set of contributory measures that contributes to the system level measure, meets the needs and priorities of their local community, and is agreed by a local alliance of professional and community representatives. **Source/Endorsements:** Yes New Zealand Ministry of Health **Stakeholder engagement:** Yes Measures within the IPIF will be set at two levels: the system level, where measures are set nationally, and the local district level, where contributory measures will be selected by local alliances between DHBs, PHOs and other key stakeholders. **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

	Enabling infrastructure including IT capacity and shared records; "etc." Capability and capacity indicators: Enabling access = Shorter stays in emergency departments; Patient touch by setting, e.g., general practice face-to-face, emails, outpatient visits, etc.; "etc."			
ASPE, 2018[194] **Name:** CPC+ Logic Model US **Link:** https://aspe.hhs.gov/collaborations-committees-advisory-groups/napa/napa-advisory-council/napa-advisory-council-meetings/napa-past-meetings/napa-2018-meeting-material/april-2018-meeting-presentation-testing-promise	**Type of care:** Quality of care **Setting:** Healthcare **Population:** All users of healthcare system **Intended use:** Not reported **Defined:** Comprehensive primary care functions = access and continuity; care management; comprehensiveness and coordination (clinical, community); patient and caregiver engagement; planned care and population health Use of enhanced, accountable payment = strategic use of practice revenue; build practice analytic capability Optimal use of health IT = EHR-based quality reporting; data exchange; continuous improvement of HIT Continuous improvement driven by data = internal measurement and review; culture of improvement	**Components and included domains:** Comprehensive primary care functions Use of enhance, accountable payment Optimal use of health IT Continuous improvement driven by data Patient and caregivers: smarter spending; healthier people; better care **Equity/disparities:** It doesn't explicitly address equity or disparities. **Context:** N/A	**Similarities:** Both frameworks include access to care and care coordination, and addresses healthcare in general. **Differences:** The CPC+Logic Model covers a broader range of components such as health information technology, payment reform and practice, and data driven improvement features, while the 2010 NASEM framework more narrowly addresses healthcare. **Policy levers:** N/A **Available measures:** Outcome measures: controlling high blood pressure; diabetes: hemoglobin A1c poor control Other measures: breast cancer screening; cervical cancer screening; colorectal cancer screening; diabetes: eye exam, medical attention for neuropathy; closing the referral loop: receipt of specialist report; use of high risk medications in the elderly; preventive care and screening: screening for depression and follow-up plan; depression utilization of the PHQ-9 tool; dementia: cognitive assessment; tobacco use: screening and cessation intervention; initiation and	**Process development:** N/A **Source/Endorsements:** Yes ASPE, HHS **Stakeholder engagement:** Unclear **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Unclear

			engagement of alcohol and other drug dependence treatment; falls: screening for future falls risk; influenza immunization; pneumococcal vaccination status for older adults; ischemic vascular disease: use of aspirin or another anti platelet; statin therapy for the prevention and treatment of cardiovascular disease	
Attree, 1996[103] **Name:** Model of quality care UK **Link:** https://www.sciencedirect.com/science/article/abs/pii/0020748995000496	**Type of care:** Quality of care **Setting:** Healthcare **Population:** General population **Intended use:** To assist in the clarification of the complex and abstract concept of quality care, and permit the exploration of postulated relationships between the elements **Defined:** Public/Society = Access; Availability; Acceptability; Equity; Relevance to need; Need satisfaction & meeting expectations Responsiveness to need; Service credibility Patient/Client = "How they experience output":-process and outcome criteria; Interpersonal processes; Satisfaction with care processes, outcomes & contexts; Health and functional status; wellbeing, need satisfaction & meeting expectations; Clinical competence of staff; Staff attitudes; Care environment Medicine = Clinical outcomes:-Death, Disease, Disability,	**Components and included domains:** Public/society Patient/client Medicine Nursing Purchaser Provider Management Structural criteria Process criteria Outcome criteria Micro contextual variables Macro contextual variables Global contextual variables **Equity/disparities:** Equity and disparities isn't explicitly addressed in framework, but was listed as an example of one of the framework components public/society. **Context:** N/A	**Similarities:** Both frameworks address healthcare. **Differences:** The Quality Care Model includes components such as public/society, patient/client, medicine, nursing, purchaser, provider, management; and criteria such as structural, process, and outcome; and contextual variables such as micro, macro, and global - all of which the 2010 NASEM framework does not. There is very little overlap in components of the two frameworks, other than how some domains are defined in the Quality Care Model - effectiveness, efficiency, access, and equity are definitions of some domains, while they are components of the 2010 NASEM framework. **Policy levers:** Variables within the Macro health care system context/environment identified as affecting 'Quality Care' were: the prevailing Macro-Economic Climate, i.e. National, Political, Economic and Social Policies; the nature of the Infrastructure; the type of Public Accountability	**Process development:** The perspectives, defining attributes/criteria and contextual/environmental factors identified as elements of 'Quality Care' were synthesised to produce a criteria list. Once the elements of 'Quality Care' had been identified a conceptual model of 'Quality Care' was ready to be constructed. The model was conceived within an open systems framework as this provided a format which acknowledged the complexities of 'Quality Care'. The defining attributes, previously identified through content analysis. i.e. structural, process and outcome criteria are subsumed into the input, throughput and output elementsof SystemsTheory. An open systems framework offered a structure which allowed for the consideration of the interrelationship and interdependence of the variables comprising 'Quality Care'. Using a systems model also enabled a dynamic approach to the representation of the elements encompassed

	Discomfort; Dissatisfaction; Professional expertise Nursing = Care processes and functions; Interpersonal processes; Professional competence; Health & wellbeing; Functional status; Adequate staffing & skill-mix Goal achievement; Patient satisfaction Management / Provider / Purchaser = Effectiveness, Efficiency & Economy; Resource utilisation; Cost effectiveness; Human & material resources: Staffing & skill-mix; Environment: buildings & facilities, Quality control & management Process criteria = care processes, interpersonal processes, method of organizing work, professional practices and competence Structural criteria = cost effectiveness, environmental attributes, resource utilization, service attributes, workforce issues Outcome criteria = effectiveness of service, health/wellness level, functional ability, need fulfillment, patient satisfaction, symptom control		as well as Societal Expectations. **Available measures:** N/A	within the concept 'Quality Care', allowing them to be considered in context, time and place; as well as in relation to associated concepts. **Source/Endorsements:** No Model suggested by individual author **Stakeholder engagement:** No Model suggested by individual author **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically
Australian Commission on Safety and Quality in Helalthcare, 2010[104] **Name:** Australian Safety and Quality Framework for Healthcare Australia **Link:** https://www.safetyandquality.gov.au/sites/default/files/migrated/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Australia **Intended use:** Describes a vision for safe and high-quality care for all Australians and sets out the actions needed to achieve this vision	**Components and included domains:** Consumer centered Driven by information Organized for safety **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks include safety, access to care, patient/family centeredness, and continuity of care, and health systems infrastructure capabilities. **Differences:** The Australian Safety and Quality Framework is primarily aimed at addressed safety in addition to quality,	**Process development:** Not reported **Source/Endorsements:** Yes Australian Health Ministers **Stakeholder engagement:** Unclear Not reported **Evidence-based:** Unclear

Australian-SandQ-Framework1.pdf	**Defined:** Consumer centered = providing care that is easy for patients to get when they need it; making sure that healthcare staff respect and respond to patient choices, needs and values; forming partnerships between patients, their family, carers and healthcare providers Driven by information = using up-to-date knowledge and evidence to guide decisions about care; safety and quality data are collect, analyses and fed back for improvement; taking action to improve patients' experience Organized for safety = making safety a central feature of how healthcare facilities are run, how staff work and how funding is organized		while the NHDQR addresses healthcare more broadly with safety just being one of the domains. The Australian framework includes patient experience while the NHDQR does not explicitly address that. **Policy levers:** The framework should promote discussion with consumers, clinicians, managers, researchers and policy makers about how they might best form partnerships to improve safety and quality **Available measures:** N/A	**Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this model has been tested empirically
Australian Institute of Health and Welfare, 2023[106] **Name:** Australian Health Performance Framework Australia **Link:** https://www.aihw.gov.au/getmedia/fc3986e1-782d-4759-ad2d-24e1b649e4c4/Map-and-descriptions-of-the-AHPF-framework.pdf.aspx	**Type of care:** Other Population health, performance central part **Setting:** Healthcare **Population:** Australia **Intended use:** To be a tool for reporting on the health of Australians, the performance of health care in Australia and the Australian health system **Defined:** Determinants of health = Are the factors that influence good health changing for the better? Where and for who are these factors changing? Is it the same for everyone? Socioeconomic factors = income, employment, housing, education and social inequalities	**Components and included domains:** Determinants of health: socioeconomic factors, health behaviors, personal biomedical factors, environmental factors Health system: effectiveness, safety, appropriateness, continuity of care, accessibility, efficiency and sustainability Health status: health conditions, human function, wellbeing, deaths Health system context: demographics; community and social capital; governance and structure; financing; workforce; infrastructure; information, research and evidence Equity	**Similarities:** Both frameworks addresses healthcare, and includes effectiveness, safety, access, and efficiency. Both frameworks have equity as a crosscutting dimension. **Differences:** The Australian framework includes determinants of health, health system context, and health status while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** Health behaviors: rates of current daily smokes; children exposed to tobacco smoke in the home; levels of risky alcohol consumption; inadequate fruit and vegetable intake; insufficient physical activity; unsafe sharing of needles	**Process development:** N/A **Source/Endorsements:** Yes Australian Institute of Health and Welfare **Stakeholder engagement:** Unclear Not reported **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically

	Health behaviors = attitudes, beliefs, knowledge and behaviours such as patterns of eating, physical activity, smoking & alcohol consumption Personal biomedical factors = genetic-related susceptibility to disease & other factors such as blood pressure, cholesterol levels and body weight Environmental factors = physical, chemical & biological factors such as water, food and soil quality Health system = Is the health system (by itself, and with others) working to prevent illness, injury and disease? Is it delivering safe, effective, and accessible coordinated care appropriate for each individual? Is the health system efficient and sustainable? Effectiveness = care, intervention or action achieves the desired outcome from both the clinical and patient perspective, including as patient reported outcomes; care provided is based on evidence-based standards Safety = avoidance or reduction to acceptable limits of actual or potential harm from health care management or the environment in which health care is delivered; includes aspects of the safety of care delivered to health care providers and patients, including patient reported incidents Appropriateness = service is person centred and culturally appropriate; consumers are	**Equity/disparities:** Equity is a crosscutting dimension of the framework. **Context:** N/A	Personal biomedical factors: prevalence of overweight and obesity Socioeconomic factors: promotion of people with low income; educational attainment for non-school qualification at Certificate III level of above Accessibility: waiting times for elective surgery - waiting times in days; waiting times for elective surgery - proportion admitted within clinically recommended time; waiting times for elective surgery - percentage waited more than 365 days; waiting times for emergency department care - proportion seen on time; waiting times for emergency department care - waiting time to commencement of clinical care; waiting times for ED care - percentage of patients whose length of ED stay is 4 hrs or less; waiting times for ED care - time spent in the ED Continuity of care: unplanned hospital readmissions rates Effectiveness: immunization rates for vaccines in the national schedule; females with an antenatal visit in the first trimester of pregnancy; cancer screening rates; selected potentially preventable hospitalizations; survival of people diagnosed with cancer; potentially avoidable deaths Efficiency and sustainability: cost per weighted separation and total case weighted separations; net growth in health workforce	

	treated with dignity, confidentiality and encouraged to participate in choices related to their care; consumers report positive experiences Continuity of care = ability to provide uninterrupted care or service across programs, practitioners and levels over time; coordination mechanisms work for health care providers and the patient Accessibility = people can obtain health care at the right place and right time, taking account of different population needs and the affordability of care Efficiency and sustainability = the right care is delivered at minimum cost and human and physical capital and technology are maintained and renewed while innovation occurs to improve efficiency and respond to emerging needs Health status = How healthy are Australians? Is it the same for everyone? What are the best opportunities for improvement? Health conditions = incidence and prevalence of disease, disorder, injury or trauma or other health related states Human function = alterations to body structure or function (impairment), activity limitations and restrictions in participation Wellbeing = measures of physical, mental and social wellbeing of individuals Deaths = mortality rates and life expectancy measures Health system context = N/A Demographics = N/A		Safety: adverse events treated in hospitals; healthcare-associated Staphylococcus aureus bloodstream infections; sentinel events; rate of seclusion Deaths: infant and young child mortality rate; life expectancy; major causes of death; mortality due to suicide Health conditions: incidence of heart attacks (acute coronary events); incidence of selected cancers; incidence of sexually-transmissible infections and blood-borne viruses; incidence of end-stage kidney disease; hospitalization for injury and poisoning; proportion of babies born with low birthweight; prevalence of type 2 diabetes; notifications of selected childhood diseases Human function: severe of profound core activity limitation Wellbeing: promotion of adults with psychological distress; self-assess health status	

	Community and social capital = N/A Governance and structure = N/A Financing = N/A Workforce = N/A Infrastructure = N/A Information, research and evidence = N/A Equity			
Bardehle, 2002[107] **Name:** N/A Multiple countries **Link:** http://www.cmj.hr/2002/43/2/11885042.pdf	**Type of care:** Other Public health, health policy and health reporting **Setting:** Public and population health **Population:** South Eastern Europe **Intended use:** Address the health of the South Eastern Europe population **Defined:** Demography/social/economy = population aged; unemployment rate; literacy rate in population aged 15 years Mortality-based indicators = Life expectancy at birth by sex; Infant mortality rate per 1,000 live births; Perinatal mortality rate per 1,000 births and rate of stillborn babies Maternal deaths per 100,000 life births (all causes); SDR, cardiovascular diseases per 100,000 population by sex, all ages; SDR, malignant neoplasm per 100,000 population by sex, all ages; SDR, external causes, injuries, and poisoning per 100,000 population by sex, all ages; SDR, suicide and self-inflicted injuries per 100,000 population by sex, all ages;	**Components and included domains:** Demography/social/economy Mortality-based indicators Morbidity and hospital discharges Lifestyle indicators Environment Health care resources Health care utilization/costs Maternal and child health **Equity/disparities:** The framework includes the domain demography/social/economy (e.g., unemployment rate, literacy rate in population aged 15 years), which in a way addresses disparities. **Context:** N/A	**Similarities:** Both frameworks include health care resources as a domain. The South Eastern Europe framework includes mortality-based indicators and morbidity and hospital discharges, which in a way addresses effectiveness (the 2010 NASEM framework includes the domain e **Differences:** The framework for South Eastern Europe countries includes demography/social/economy, mortality-based indicators, mobility and hospital discharges, lifestyle indicators, environment, health care utilization/costs, and maternal and child health, while the 2010 NASEM framework does not. The framework for South Eastern Europe countries addresses population health more, while the 2010 NASEM framework addresses healthcare delivery. **Policy levers:** The indicator set developed was introduced for health policy, health monitoring, and health reporting in South Eastern Europe countries. **Available measures:**	**Process development:** Not reported, but the main source of indicators was a list of 224 indicators of the WHO Health For All 21 strategy. The indicators had to cover socio-demographic and economic situation; mortality; morbidity (hospital discharges); risk factors and lifestyles; environmental health; health care resources, utilization, and costs; and maternal and child health. **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** No Suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

	SDR, homicide and purposely inflicted injury by other persons per 100,000 population by sex, all ages; SDR, infectious and parasitic diseases per 100,000 population by sex, all ages; Mortality rate for children aged 1-4 years per 100,000 of the age group, by sex Morbidity and hospital discharges = Incidence of tuberculosis per 100,000 population, of which pulmonary tuberculosis by age and sex; DMFT-12 index (Decayed, Missing, or Filled Teeth, aged 12) Lifestyle indicators = Pure alcohol consumed per person annually (L); Average number of calories per person a day (kcal) or % of total energy available from proteins Environment = Population (%) with connection to water, total, or population (%) with access to hygienic sewage disposal, total; Average number of persons per room in an occupied housing unit Health care resources = Number of primary health care units per 100,000 population; Number of hospital beds per 100,000 population; Number of physicians, of which general practitioners, per 100,000 population; Number of dentists (stomatologists) per 100,000 population; Number of pharmacists per 100,000 population; Number of nurses per 100,000 population Health care utilization/costs = Average length of hospital stay			

	(all hospitals); Total health expenditure, of which on inpatient care (US$); Gross national product (US$), and its fraction for health expenditure Maternal and child health = Number of abortions per 1,000 live births (legal and other abortions); Life births (%) weighing 2,500 g and more; Coverage of all vaccinations in children up to one year of age (%)			
Barton, 2020[108] **Name:** N/A US **Link:** https://www.preventcancer.org/wp-content/uploads/2020/11/Mary-Barton-Session-7-Topic-1.pdf	**Type of care:** Quality of care **Setting:** Healthcare **Population:** US population **Intended use:** Not clearly reported, but addresses NCQA's Healthcare Effectiveness Data and Information Set **Defined:** Effectiveness of care = prevention and screening, respiratory, cardiovascular, diabetes, musculoskeletal, behavioral health, medication management and care coordination, overuse/appropriateness, measures collected through Health Outcomes Survey, measures collected through CAHPS survey Access/Availability of care = N/A Experience of care = N/A Utilization and risk adjusted utilization = N/A Health plan descriptive information = N/A Measures collected using electronic clinical data systems = N/A	**Components and included domains:** Effectiveness of care Access/Availability of care Experience of care Utilization and risk adjusted utilization Health plan descriptive information Measures collected using electronic clinical data systems **Equity/disparities:** Equity and disparities are not explicitly addressed in this framework. **Context:** NCQA's HEDIS measures are usually categorized under one of the framework domains.	**Similarities:** Both frameworks include effectiveness, access, care coordination, and types of care. **Differences:** The NCQA framework highlights the 6 domains that their Healthcare Effectiveness Data and Information Set measures fall under and helps with measurement. The NCQA framework includes patient experience, while the 2010 NASEM framework does not do so explicitly. The NCQA framework also includes utilization and risk adjusted utilization, health plan descriptive information, and measures collected using electronic clinical data systems, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** NCQA's HEDIS measures are regularly updated but not provided in this document.	**Process development:** Not reported. **Source/Endorsements:** Yes NCQA **Stakeholder engagement:** Yes Feedback on measure development **Evidence-based:** No **Defined population:** Unclear NCQA addresses US population, but it doesn't explicitly report the population **Validity testing status:** Tested HEDIS is a well known measure set and the criteria although constantly changing has been applied in context

Belgian Health Care Knowledge Center, 2013[109] **Name:** N/A Belgium **Link:** https://kce.fgov.be/sites/default/files/2021-11/KCE_196S3_Health%20system%20performance%20Report%202012_0_1.pdf	**Type of care:** Quality of care Health system performance **Setting:** Health system performance **Population:** Belgian population **Intended use:** Address health system performance dimensions **Defined:** N/A	**Components and included domains:** Appropriateness Effectiveness Continuity Efficiency Accessibility Patient-centeredness Sustainability Safety Grand Total **Equity/disparities:** Equity and disparities are not explicitly addressed in this framework. **Context:** N/A	**Similarities:** Both frameworks addresses healthy system delivery, and include the access, effectiveness, safety, efficiency, patient-centeredness, and continuity of care. **Differences:** The Belgian framework includes appropriateness, sustainability, and "Grand Total", while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** Informational continuity - structure: % practices with EMR that allows sharing the data : internal coordination (problem list, ambulatory visits, medication lists, laboratory findings, medication-ordering reminders, drug interaction, radiology findings); external coordination, including out of hours (GPs & pharmacist, specialist, physiotherapist, dietetician...) Informational continuity (medical history) - process: % patients whose the specialist consultation was referred by GP's letters Informational continuity (medication) - process: % patients for which information on medication prescribed at outpatient clinics, hospital wards, and outside the hospital is accessible at outpatient clinics, hospital wards, the hospital pharmacy and outside the hospital	**Process development:** Published and grey literature review of a long-list of mental health performance indicators. Data abstraction of operational indicator definitions and then grouped per indicator theme; per theme the scope and dimension of performance measurement was indicated. **Source/Endorsements:** No **Stakeholder engagement:** Yes Federal Public Service Public Health, Federal Public Service Social Affairs, NIHDI, Scientific Institute of Public Health; and several other organizations were consulted throughout the duration of this project **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

			Informational continuity (tests) - process: % chronically ill people for who they are problems with the coordination of care: test results not available at time of doctor's appointment, or duplication of tests Management continuity - process: % patients, regardless of age, discharged from an hospital to ambulatory care or home health care, or their caregiver(s), who received a transition record at the time of discharge including, at a minimum, all of specified elements: Major procedures and tests performed during hospital visit, AND; Principal diagnosis at discharge OR chief complaint, AND; Patient instructions, AND; Plan for follow-up care (OR statement that none required), including primary physician, other health care professional, or site designated for follow-up care, AND; List of new medications and changes to continued medications that patient should take after discharge, with quantity prescribed and/or dispensed (OR intended duration) and instructions for each Relational continuity - process: % of individuals with a GMD / all citizen Relational continuity - process: UPC= proportion of consultations that were conducted by the professional consulted most frequently Coordination - process: Proportion of breast cancer	

			women discussed at the multidisciplinary team (MDT) meeting Coordination/timeliness - process: Proportion of women with class (3), 4 or 5 abnormal mammograms who have at least one of the following procedure within 2 months after communication of the screening result : mammography, ultrasound, fine-needle aspiration, or percutaneous biopsy Coordination - process: % of patients with diabetes or renal failure registered in a care pathway Coordination - process: % of CT patients with care pathways who meet the target of consulting their CT GP (or a GP of the practice of the CT GP) or CT specialist at least 4 times in the period 01/01/2010 - 31/12/2010 Coordination - outcome: Potentially avoidable emergency department encounters for asthma among adults and children / population Acknowledgement of patients needs, wants, preferences, values (patients' right)- structure: Existence of a clear process for filing or managing complaints Providers skills of communication (language need) - structure: N/A Patients and carers involvement in management & decision of care - structure: % hospitals with internal quality	

			improvement including monitoring patients views Acknowledgement of patients needs, wants, preferences, values (patients' preference)- process: the number of terminally ill patients (or patients with end stage disease) for whom the patients' preferences for care are documented in the medical record Acknowledgement of patients needs, wants, preferences, values (pain management)- process: % adult inpatients who reported that their pain level was assessed Providers skill of communication - process: % of care users who reported that: Care providers listened carefully; They were given understandable information by care providers; They were treated politely by care providers; Care providers spent enough time with them; Care providers respected what they had to say Patients and carers involvement in management & decision of care - process: % of care users who reported that: the doctor/nurse/allied health professional involved them as much as they wanted to in decisions about their care and treatment Outcome: % of population above 15 years old who report to be satisfied with healthcare services	
Berwick, 2008[110] **Name:** The Triple Aim US	**Type of care:** Quality of care **Setting:** Population health and healthcare	**Components and included domains:** Improve the individual experience of care	**Similarities:** Both frameworks address healthcare delivery in some way.	**Process development:** Not reported

Link: https://www.healthaffairs.org/doi/10.1377/hlthaff.27.3.759?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed	**Population:** US **Intended use:** To serve as a framework for achieving high-value healthcare and population health **Defined:** N/A	Improve the health of populations Reduce the per capita costs of care for populations **Equity/disparities:** Equity and disparities are not explicitly addressed in this framework. **Context:** N/A	**Differences:** This framework is focused on addressing population health and their care experience, while the 2010 NASEM framework addresses healthcare delivery more broadly. **Policy levers:** Pursuit of the Triple Aim is an exercise in balance and will be subject to specified policy constraints, such as decisions about how much to spend on health care or what coverage to provide and to whom. **Available measures:** N/A	**Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Unclear Authors note some examples of organizations or countries that have focused on the three aims, but it's not clear whether they use this model specifically
Blozik, 2018[111] **Name:** Evidence-based indicators for the measurement of quality of primary care Switzerland **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6161393/	**Type of care:** Quality of care **Setting:** Ambulatory primary care **Population:** Ambulatory primary care in Switzerland **Intended use:** To assess quality of ambulatory primary care **Defined:** General aspects, efficiency = number of emergency hospital admissions per 1000 insured persons; medication costs per insured person; costs per daily dose in specific ATC groups relevant in primary care; proportion of prescriptions of generics; proportion of prescriptions of inefficient me-too medications; number of different primary care physicians consulted by an individual insured person; number of different specialist physicians consulted by an individual insured person Drug safety = number of prescriptions of anxiolytics,	**Components and included domains:** General aspects, efficiency Drug safety Geriatric care Respiratory disease Diabetes mellitus Cardiovascular disease **Equity/disparities:** Equity and disparities are not explicitly addressed in this framework. **Context:** N/A	**Similarities:** Both frameworks address quality of care, and includes efficiency, as well as safety in some way (drug safety specifically in this framework). **Differences:** This framework addresses ambulatory primary care specifically, while the 2010 NASEM framework addresses health system delivery more generally. This framework includes the domains geriatric care, respiratory disease, diabetes mellitus, and cardiovascular disease, while the 2010 NASEM framework does not. **Policy levers:** The present study responds to political discussions about how to increase transparency related to quality of ambulatory care in Switzerland by pragmatically combining pre-existing evidence-based methods with local expertise.	**Process development:** Step 1: Extraction of guideline recommendations and pre-existing QI: primary care guidelines published the German Association of Primary Care and Family Medicine; German National Disease Management Guidelines; German quality indicators for ambulatory care QiSA developed by the AQUA Institute Step 2: Preselection of potential QI that can be principally build based on Swiss health insurance claims data: exclusion of items for which clinical information is systematically not reported to health insurances or the service at interest is not part of the benefit catalogue covered by the Swiss statutory health insurance Step 3: Rating of potential QI by a multidisciplinary group of

	sedatives or hypnotics; number of prescriptions of non-steroidal anti-inflammatory drugs Geriatric care = proportion of insured persons aged 65 years or older with poly medication promotion of insured persons aged 65 years and older with prescription of potential inappropriate medications; proportion of insured persons aged 65 years or older with reimbursed influenza vaccination; proportion of insured persons aged 65 years or older with at least one chronic condition who were hospitalized for fracture near the pelvic joint Respiratory disease = proportion of insured persons receiving long term therapy of systemic corticosteroids; disease-specific hospitalization rate of insured persons with the Pharmacy Cost Group "respiratory disease" Diabetes mellitus = proportion of insured persons with anti diabetic medication receiving which HbA1c controls (number of controls per year); proportion of insured persons with anti diabetic medication receiving which an ophthalmologic control within 15 months; hospitalization rate of insured persons with anti diabetic medication; promotion of insured persons with antidiabetic medication receiving control of lipid values per year; proportion of insured persons with antidiabetic		**Available measures:** General aspects, efficiency: number of emergency hospital admissions per 1000 insured persons; medication costs per insured person; costs per daily dose in specific ATC groups relevant in primary care; proportion of prescriptions of generics; proportion of prescriptions of inefficient me-too medications; number of different primary care physicians consulted by an individual insured person; number of different specialist physicians consulted by an individual insured person Drug safety: number of prescriptions of anxiolytics, sedatives or hypnotics; number of prescriptions of non-steroidal anti-inflammatory drugs Geriatric care: proportion of insured persons aged 65 years or older with poly medication promotion of insured persons aged 65 years and older with prescription of potential inappropriate medications; proportion of insured persons aged 65 years or older with reimbursed influenza vaccination; proportion of insured persons aged 65 years or older with at least one chronic condition who were hospitalized for fracture near the pelvic joint Respiratory disease: proportion of insured persons receiving long term therapy of systemic corticosteroids; disease-specific hospitalization rate of insured persons with the Pharmacy Cost Group "respiratory disease	experts (primary care, public health, academics, health economics) including patient representatives. Rating will be done based on explicit criteria: relevance for public health, clarity of definition, influence on measured aspect of care, risk of undesired effects, strength of evidence Step 4: Face-to-face meeting for discussion of rating round and consensus on preliminary set of QI qualifying for feasibility testing Step 5: Feasibility test based on claims data of persons with basic mandatory health insurance at the Helena Group Step 6: 2nd face-to-face meeting to discussion of feasibility test and consensus on the final set of QI **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** Yes Multidisciplinary group of 9 independent experts from primary care, public health, and health economics including patient and consumer representatives rated the list of potential QIs **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

	medication receiving control of kidney values per year Cardiovascular disease = proportion of insured persons with hospitalization for myocardial infarction receiving acetylsalicylic acid; proportion of insured persons with hospitalization for myocardial infarction receiving statins; proportion of insured persons with hospitalization for stroke receiving acetylsalicylic acid; promotion of insured persons with hospitalization for stroke receiving statins		"Diabetes mellitus: proportion of insured persons with anti diabetic medication receiving which HbA1c controls (number of controls per year); proportion of insured persons with anti diabetic medication receiving which an ophthalmologic control within 15 months; hospitalization rate of insured persons with anti diabetic medication; promotion of insured persons with antidiabetic medication receiving control of lipid values per year; proportion of insured persons with antidiabetic medication receiving control of kidney values per year Cardiovascular disease: proportion of insured persons with hospitalization for myocardial infarction receiving acetylsalicylic acid; proportion of insured persons with hospitalization for myocardial infarction receiving statins; proportion of insured persons with hospitalization for stroke receiving acetylsalicylic acid; promotion of insured persons with hospitalization for stroke receiving statins	
Bodenheimer, 2014[112] **Name:** Quadruple Aim US **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4226781/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** US **Intended use:** Expand the Triple Aim but adding the goal of improving the work life of health care providers, including clinicians and staff **Defined:** N/A	**Components and included domains:** Enhancing patient experience Improving population health Reducing costs Improving the work life of healthcare providers, including clinicians and staff **Equity/disparities:** Equity or disparities are not explicitly addressed in this framework.	**Similarities:** Both frameworks address healthcare delivery. **Differences:** The Quadruple Aim includes the 4 domains: Enhancing patient experience, Improving population health, Reducing costs, and Improving the work life of healthcare providers, including clinicians and staff, while the 2010 NASEM framework does not.	**Process development:** Not reported **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** No **Defined population:** No (target unclear)

		Context: N/A	**Policy levers:** N/A **Available measures:** N/A	**Validity testing status:** Not tested No indication that this model has been tested empirically
Booth, 2007[113] **Name:** Quality framework for Australian general practice Australia **Link:** https://www.racgp.org.au/getattachment/ad61adf7-3386-4eb6-9c52-f9b8981380d9/attachment.aspx	**Type of care:** Quality of care **Setting:** General practice **Population:** Australia **Intended use:** Serve as a conceptual framework for quality improvement in Australian general practice **Defined:** N/A	**Components and included domains:** Professionalism/values Patient focus Competence Capacity Knowledge and information management Financing Four levels: National Regional Setting of care Individual **Equity/disparities:** Unclear if equity or disparities is included in the framework. **Context:** N/A	**Similarities:** Both frameworks include access, effectiveness, efficiency, and safety, patient focus, type/setting of care. **Differences:** This framework is focused on general practice, while the 2010 NASEM framework addresses health system delivery broadly. This framework incudes many domains that the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** N/A	**Process development:** The empirical process to develop the framework involved three components: a literature review, broad consultation, and design. Initially, the scientific literature and broader policy approaches relating to quality in health care were reviewed. Consultations were held with individual GPs and stakeholder groups. General practitioners were recruited through RACGP state and territory offices for a series of focused group discussions to explore concepts of quality and its determinants; barriers and gaps in quality and suggestions for overcoming these; and views on essential components of a quality framework. Key general practice stakeholders were asked about the same concepts in a semi-structured interview. Finally, a small working group undertook an iterative process over 12 months to design and revise a framework in consultation with a high level stakeholder Quality in General Practice Committee **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** Yes Four focus groups were held across Australia involving 50 GPs. Rural GPs unable to attend a focus group participated in a teleconference. General practitioners identified

				important components of a quality framework; Key informants from 14 stakeholder organisations provided interviews; a small working group undertook an iterative process over 12 months to design and revise a framework in consultation with a high level stakeholder Quality in General Practice Committee **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Authors applied the framework to the Immunize Australia Program in the article
Brechat, 2024[114] **Name:** The Hexagonal Aim or Diamond of the Six Aims Multiple countries **Link:** https://onlinelibrary.wiley.com/doi/full/10.1111/1468-0009.12702	**Type of care:** Other Population health **Setting:** Healthcare and population health **Population:** General population **Intended use:** To serve as a framework that addresses healthcare and population health **Defined:** N/A	**Components and included domains:** Improving population health Improving experience of care Reducing per capita cost Improving work life of care providers) Health equity (including health democracy) Preserving and improving the health of the environment to create the best health possible (future generations and planet health) **Equity/disparities:** Health equity (including health democracy) is the fifth aim of the model. **Context:** N/A	**Similarities:** Both frameworks address healthcare delivery in some way, and includes equity. **Differences:** The Hexagonal Aim includes the components: Improving population health; Improving experience of care; Reducing per capita cost; Improving work life of care providers); Preserving and improving the health of the environment to create the best health possible (future generations and planet health), while the 2010 NASEM framework does not. **Policy levers:** **Available measures:** N/A	**Process development:** Not reported **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** No **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this model has been tested empirically
Brindis, 2006[36] **Name:** Cycle of Clinical Therapeutic Effectiveness US	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Academic medicine community	**Components and included domains:** Guidelines Performance Indicators Performance Outcomes	**Similarities:** Both frameworks consider efficiency and addresses healthcare delivery. **Differences:** Both models consider all different	**Process development:** Authors adapted from the Model for the Integration of Quality into the Therapeutic Development Cycle by Califf et al., 2002

Link: https://journals.lww.com/academicmedicine/fulltext/2006/09000/the_role_of_academic_medicine_in_improving_health.7.aspx	**Intended use:** To help actively embrace and promote the type of quality metrics and criteria developed by the American College of Cardiology and the American Heart Association. **Defined:** N/A	Clinical Trials Concept American College of Cardiology-National Cardiovascular Registry, Guidelines Applied in Practice, AHA Get with the Guidelines Program, etc. Appropriateness and Efficiency Quality **Equity/disparities:** Equity and disparities is not explicitly addressed in the framework. **Context:** Academic medicine	components with the exception of efficiency. **Policy levers:** Authors report that academic leaders are called upon by the nation's policy makers to help shape policy decisions in determining how and where our health care dollars should be spent. Academic medicine should accelerate its commitment to translating research findings into policy--both in terms of improving quality of care, as well as implications for general population health issues. **Available measures:** N/A	**Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Unclear
Campbell, 1998[116] **Name:** N/A UK **Link:** https://pubmed.ncbi.nlm.nih.gov/9923948/	**Type of care:** Quality of care **Setting:** General practice **Population:** UK general practice **Intended use:** To address healthcare quality **Defined:** Access: Fair access = High-quality general medical services are physically accessible, available and meet demands in ways which are appropriate to need and local circumstances. Organizational performance: Efficiency, and effective delivery of appropriate health care = High-quality general medical services demonstrate internal processes for planning, providing and reviewing care that deploy available resources appropriately and efficiently to meet local needs. Service performance: preventive care: Effective delivery of appropriate health	**Components and included domains:** Access: Fair access Organizational performance: Efficiency, and effective delivery of appropriate health care Service performance: preventive care: Effective delivery of appropriate health care Service performance: chronic disease management: Effective delivery of appropriate health care Prescribing: Effective delivery of appropriate health care, and delivery Gatekeeping: Effective delivery of appropriate health care **Equity/disparities:** Equity and disparities are not explicitly addressed in this framework. **Context:** N/A	**Similarities:** Both frameworks address health care delivery in some way, and include access, health systems capabilities infrastructure, safety, effectiveness, efficiency, timeliness, and types of care. **Differences:** The framework in this study specifically addresses general practice, while the 2010 NASEM framework doesn't specify a particular type of practice. This study's framework includes prescribing and gatekeeping, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** Access: Urgent appointment same day with a doctor Emergency appointments available during current surgery session Patients can obtain information or advice by telephone where a	**Process development:** A list of indicators proposed for use at health authority level by the NHSE Efficiency and Effectiveness Steering Group which had been circulated to health authorities for discussion, several of which have since been published in the National Performance Framework, was included. Definitions of high-quality care covering six domains was developed by a small expert advisory reference group and the indicators were allocated to these domains by the project team. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes ality indicators being proposed for use in general practice. A two-stage Delphi process was used to establish general practitioners' (GPs') and health authority managers' views on

	care = High-quality general medical preventive care informs, recom- mends and provides for all appropriate people an integrated and appropriate package of care that can prevent the onset or progression of disease while respecting the rights of patients to make their own choices. Service performance: chronic disease management: Effective delivery of appropriate health care = Within an integrated, comprehensive and appropriate package of care, high-quality general medical services address the physical, psychological and social needs of patients with chronic illness and their carers. Prescribing: Effective delivery of appropriate health care, and delivery = In high-quality general medical services prescribing decisions can be demonstrated to maximize effectiveness, safety and economy, and to respect patients' informed choices. Gatekeeping: Effective delivery of appropriate health care = High-quality referral decisions from general medical care providers should be appropriate for the particular patient, and be timely in relation to the course of the condition. The potential benefits of the referral should justify the likely costs.		consultation is unnecessary or impractical A member of the practice staff is available to answer the telephone between 9.00 a.m. and 5.00 p m. on weekdays Practice offers at least 4 morning surgeries per week Practice offers at least 4 afternoon or evening surgeries per week Routine appointments should be booked at a minimum of 10 minute intervals Suitable access for disabled patients Adequate facilities for disabled patients Organizational performance: Primary Health Care Team have a planned medical audit programme Practice audits records to ensure that they are up-to-date, legible and complete All staff have the skills, qualifications and experience needed to do their jobs Practice is committed to staff training - Practice provides family planning services on site Registered for child health surveillance, minor surgery and maternity care Waiting room is of sufficient size for practice population Preventive care: >=90% immunization rate for infectious diseases >=80% uptake rate, primary immunization course >=90% uptake rate: at risk children receive pre-school booster	the face validity of identified indicators. **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) UK general practice **Validity testing status:** Not tested No indication that this has been tested empirically

			Practice provides child health surveillance services Uptake rate: target population screened for cervical cancer Chronic disease management: Practice maintains a register of asthma patients >=70% asthma patients reviewed in last 12 months Practice should have a nebulizer or nebuhaler, or volumatic and oral steroids available Practice has a stepped care approach asthma protocol based on BTS guidelines Practice maintains a register of patients with diabetes >=80% diabetic patients (insulin dependent and NIDDM) reviewed in past year All diabetic patients should receive an annual review covering: glycaemic control, eyes, blood pressure, feet, renal function, and cardiovascular risk factors Adequate patient information should be available in a suitable format for patient self-management of diabetes Practice maintains a register of hypertension patients >=80% patients with hypertension reviewed in the last 12 months Effective hypertension management - annual calibration of sphygmomanometers Practice has a register of the age-sex distribution of the practice population Prescribing:	

			Practice carries out audit of repeat prescribing Practice uses PACT data to help review its prescribing behaviour Ratio of co-trimoxazole to trimethoprim	
Campbell, 2000[115] **Name:** Systems based model for assessing care UK **Link:** https://www.sciencedirect.com/science/article/abs/pii/S0277953600000575?via%3Dihub	**Type of care:** Quality of care **Setting:** Healthcare **Population:** UK, but may be applicable to other countries **Intended use:** To describe quality of care **Defined:** Structure = the organizational factors that define the health system under which care is provided; geographic/physical access; affordability; availability Process = involves interactions between users and the health care structure; in essence, what is done to or with users; process is the actual delivery and receipt of care; affordability; availability; effectiveness of clinical care, effectiveness of interpersonal care Outcome = consequences of care; health status; user evaluation Physical characteristics = resources, organization of resources, management Staff characteristics = skill-mix, teamworking Clinical care = problem/ needs definition, problem/ needs management Interpersonal care = problem/ needs definition, problem/ needs management	**Components and included domains:** Structure: physical characteristics, staff characteristics Process: clinical care, interpersonal care Outcomes: health status, user evaluation Access Effectiveness Equity **Equity/disparities:** Equity is a sub-component of access relevant to structure and process in the framework; it is defined as the extent to which all individuals in a population access the care they need **Context:** Two sets of quality indicators: The NHS National Performance Framework and the HEDIS set developed for the assessment of health plans in the U.S. by the NCQA	**Similarities:** Both frameworks address health care, and include access and effectiveness, health system resources/capabilities, as well as equity. **Differences:** The systems based model for assessing care has a structure, process, outcome design (Donabedian), while the 2010 NASEM framework does not. It also includes components such as health status, staff characteristics, interpersonal care, and user evaluation, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** Structure: geographic access, physical access, affordability, availability, effectiveness Process: affordability, availability, effectiveness of clinical care, effectiveness of interpersonal care Outcome: health status, notification rate of measles, pertussis and TB, user evaluation/experience, costs of care	**Process development:** N/A **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to a different context

	Health status = functional status, symptom relief User evaluation = satisfaction, enablement			
Canadian Institute for Health Information, 2013[118] **Name:** CIHI's Health System Performance Framework Canada **Link:** https://secure.cihi.ca/free_products/HSP_Framework_Technical_Report_EN.pdf	**Type of care:** Quality of care **Setting:** Health system **Population:** Canada **Intended use:** To measure health system performance from a pan-Canadian perspective **Defined:** SDOH = structural factors influencing health; biological, material, psychosocial and behavioral factors Health system inputs and characteristics = leadership and governance, health system resources, efficient allocation of resources, adjustment to population health needs, health system innovation and learning capacity Health system outputs = access to comprehensive, high-quality health services, person-centered, safe, appropriate and effective, efficiently delivered Health system outcomes = improve health status of Canadians, improve health system responsiveness, improve value for money Contexts (political, cultural, demographic, economic) Equity = cross-cutting dimension of the first two goals of health system outcomes (improve health status of Canadians and improve health system responsiveness), as well as four components of	**Components and included domains:** SDOH Health system inputs and characteristics Health system outputs Health system outcomes Contexts (political, cultural, demographic, economic) Equity **Equity/disparities:** Equity spans the first two goals of health system outcomes (improve health status of Canadians and improve health system responsiveness), as well as four components of health system outputs (person-centered, safe, appropriate and effective, efficiently de **Context:** N/A	**Similarities:** Both frameworks addresses healthcare/health system delivery, and includes the components safety, person-centered, effectiveness, efficiency, access to care, equity, and health system resources or capabilities. **Differences:** The CIHI framework includes SDOH, health system inputs and characteristics, health system outcomes, and context (political, cultural, demographic, and economic), while the 2010 NASEM framework does not. The framework provides a structure that enables health system managers and policy-makers to assess health system performance. **Policy levers:** The framework aims to meet the health system performanceinformation needs of the general public, policy-makers and health system managers in a way that is parsimonious and focused on the performance improvement priorities of jurisdictions. The leadership and governance component of the framework involves ensuring that strategic policy frameworks exist and are combined with effective oversight, coalition-building, the provision of appropriate regulations and incentives, attention to system design and accountability.	**Process development:** 1. Review existing international frameworks for health system performance reporting. 2. Review literature and evidence on organizational and health system quality improvement reporting. 3. Develop first draft of the health system performance framework, followed by internal review and discussion. 4. Share first draft with selected stakeholders, expert advisory groups and councils. 5. Revise first draft based on feedback to develop a proposed health system performance framework and related technical report. 6. Post the framework and technical report on CIHI's website for general comments and feedback. 7. Revise proposed framework to develop the final version of the health system performance framework presented in this document. **Source/Endorsements:** Yes Canadian Institute for Health Information **Stakeholder engagement:** Yes Provide input on development of framework **Evidence-based:** Unclear

	health system outputs (person-centered, safe, appropriate and effective, efficiently delivered)		**Available measures:** N/A	**Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically
Carinci, 2015[119] Kelley and Hurst, 2006[156] **Name:** Revised OECD framework for performance measurement Multiple countries **Link:** https://academic.oup.com/intqhc/article/27/2/137/1787909?login=false	**Type of care:** Quality of care **Setting:** Healthcare **Population:** OECD member countries **Intended use:** To assess health system performance **Defined:** Healthcare system performance dimensions = quality, access, cost/expenditure Quality = effectiveness, safety, responsiveness/patient centeredness Responsiveness/patient centeredness = individual patient experiences, integrated care Access = accessibility Health care needs = primary prevention, getting better, living with illness or disability/ chronic care, coping with end of life	**Components and included domains:** Health Non-health care determinants of health Healthcare system performance dimensions Health care needs Efficiency (marco and micro-efficiency) Health system design, policy and context Equity **Equity/disparities:** Equity is a crosscutting dimension of the framework. **Context:** Vaccination, hypertension, diabetes, cancer, COPD, mental health, and more.	**Similarities:** Both frameworks addresses healthcare, include the components access, effectiveness, safety, patient centeredness, and efficiency, and have equity as a cross cutting dimension. Both frameworks includes types of care in some way. **Differences:** The revised OECD framework still includes domains such as health, non-health determinants of health, and health system design, policy and context, while the 2010 NASEM framework does not. The revised OECD framework includes coping with end of life care, macro and micro-efficiency, and cost/expenditure, while the 2010 NASEM framework does not. **Policy levers:** Some indicators of the framework were updated (excluded) based on several reasons, with one being actionability, for indicators that were unlikely to improve on the basis of targeted policy interventions. Authors note that healthcare quality indicators now yield comparative advantage information to be used for policy making, among	**Process development:** A structured assessment was carried out using a modified Delphi approach, followed by a consensus meeting, to assess the suite of HCQI for international comparisons, agree on revisions to the original framework and set priorities for research and development. A review of the evidence on quality indicators conducted by a panel of five experts, two rounds of ratings according to predefined criteria and a final consensus meeting. **Source/Endorsements:** Yes OECD **Stakeholder engagement:** Yes Meetings to discuss original framework and any updates **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to different context

			other things, within and across health care systems. **Available measures:** Primary/secondary prevention X effectiveness: vaccination against diphtheria, tetanus and pertussis, children aged 1; vaccination against measles, children aged 1; vaccination against hepatitis B, children aged 1; influenza vaccination coverage, population aged 65 and over; hypertension hospital admission; annual retinal exam for diabetics; mammography screening in women aged 50-69; cervical cancer screening in women aged 20-69 Primary/secondary prevention X safety: obstetric trauma vaginal delivery with instrument; obstetric trauma vaginal delivery without instrument Primary/secondary prevention X responsiveness/patient centeredness: regular doctor spending enough time with patients during the consultation; other doctor sending enough time with patients during the consultation; other doctor providing easy-to-understand explanations; regular doctor provide easy-to-understand explanations; regular doctor giving opportunity to ask questions or raise concerns; other doctor giving opportunity to ask questions or raise concerns; regular doctor involving patients in decisions about care or treatment; other doctor involving patients in decisions about care or	

			treatment; waiting time of more than 4 weeks for getting appointment with a specialist; medical tests, treatment or follow-up skipped due to costs; consultation skipped due to costs; prescribed medicines skipped due to costs; consultation skipped due to difficulties in traveling; waiting time of more than 1 hour on the day of consultation with a doctor Getting better X effectiveness: admission-based AMI 30 day in-hospital (same hospital) mortality; patient-based AMI 30 day (in-hospital and out of hospital) mortality; patient-based ischemic stroke 30 day (in-hospital and out of hospital) mortality; admission-based ischemic stroke 30 day in-hospital (same hospital) mortality; admission-based hemorrhagic stroke 30 day (in-hospital and out of hospital) mortality; hip-fracture surgery initiate within 48 hours after admission to the hospital; patient-based AMI 30 day in-hospital (any hospital) mortality; patient-based ischemic stroke 30 day in-hospital (any hospital) mortality; patient-based hemorrhagic stroke 30 day in-hospital (any hospital) mortality; breast cancer five year relative survival; cervical cancer five year relative survival; colorectal cancer five year relative survival; breast cancer mortality in women; cervical cancer mortality; colorectal cancer mortality; overall volume of antibiotics for systemic use	

			prescribed; volume of cephalosporins/quinolones as proportion of all systemic antibiotics prescribed Getting better X safety: retained surgical item or unretrieved device fragment (15+ years); postoperative PE or DVT (all surgical discharges); postoperative PE or DVT (hip and knee discharges); postoperative sepsis (all surgical discharges); postoperative sepsis (all abdominal discharges); postoperative wound dehiscence (15+ years); retained surgical item or unretrieved device fragment (1-14 years); accidental puncture or laceration (0-14 years); accidental puncture or laceration (15+ years); postoperative hemorrhage or hematoma (0-14 years); postoperative wound dehiscence (0-14 years); postoperative hemorrhage or hematoma (15+ years); long-term use of benzodiazepines/benzodiazepine-related drugs in elderly patients; use of long-acting benzodiazepines in elderly patients; pilot of prescription safety indicators (6 indicators) Living with illness or disability/ chronic care X effectiveness: asthma hospital admission; COPD hospital admission; diabetes hospital admission (uncomplicated, short and long-term complications); diabetes lower extremity amputation; congestive heart failure hospital	

			admission; adequate use of cholesterol lowering treatment in diabetic patients; first choice antihypertensives for diabetes patients; excess mortality for patients with schizophrenia; excess mortality for patients with bipolar disorder; deaths after discharge from suicide among people diagnosed with a mental disorder; deaths after discharge from suicide among people diagnosed with schizophrenia/bipolar disorder; in-patient suicides among people diagnosed with a mental disorder; in-patient suicides among people diagnosed with schizophrenia or bipolar disorder; hospital (same) re-admissions within 30 days for patients discharged with schizophrenia; hospital (same) re-admissions within 30 days among patients discharge with schizophrenia; hospital (any) re-admissions within 30 days for patients discharged with schizophrenia; hospital (any) re-admissions within 30 days among patients discharged with schizophrenia; hospital (same) re-admissions within 30 days for patients discharged with bipolar disorder; hospital (same) re-admissions within 30 days among patients discharged with bipolar disorder; hospital (any) re-admissions within 30 days for patients discharged with bipolar disorder; hospital (any) re-admissions within 30 days among patients discharged with bipolar disorder	

Chen, 2015[123] **Name:** The conceptual framework for Taiwan's hospital clinical performance indicators Taiwan **Link:** https://www.sciencedirect.com/science/article/pii/S0929664615000728?via%3Dihub	**Type of care:** Quality of care **Setting:** Hospital **Population:** Taiwan **Intended use:** Serve as a guidance to identify areas that need to be addressed to improve quality, foster accountability, or fill the data collection gaps among regions or institutes **Defined:** Safety = appropriate structures, renders services in the system or a hospital, and attains the goal to prevent or reduce risk to patients, provider, or environment Clinical effectiveness = the system or a hospital, is the degree of achieving desirable outcomes, and appropriately providing evidence-based services to all patients likely to most benefit Patient centeredness/responsive governance = the degree to which a system or a hospital places the patient at the center of its delivery of health care, respond to community needs, and ensure care continuity and coordination Efficiency = the right level of resources for the system and ensure maximum benefits or results Staff orientation = the degree to which staff are qualified to provide health services, opportunity offered for continuous learning and training, and sense of satisfaction	**Components and included domains:** Safety Clinical effectiveness Patient centeredness/responsive governance Efficiency Staff orientation **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** (1) Hospital accreditation; (2) clinical performance measure systems (including Taiwan Quality Indicator Project, Taiwan Clinical Performance Indicators, and Taiwan Healthcare Indicator Series); (3) claim-based quality measure systems of National Health Insurance (including provider profile data analysis system, disease-specific pay-for-performance program for diabetes mellitus, tuberculosis, breast cancer, cervical cancer, and asthma); and (4) disease specific surveillance, reporting and registry systems (including Taiwan Cancer Screening Programs, Cancer Registry, Cancer Core Measure Project, Baby-friendly Hospital Initiative and Birth Registry, Adverse Medical Reaction Reporting System, Infection Control Inspection Quality Improvement Project, and the Taiwan Nosocomial Infections Surveillance System	**Similarities:** Both frameworks include safety, effectiveness, patient centeredness, and efficiency. **Differences:** The Taiwan framework addresses hospitals specifically, while the 2010 NASEM framework addresses healthcare delivery more broadly. The Taiwan framework includes staff orientation, while the 2010 NASEM framework does not. **Policy levers:** One reason for the development of the framework was that a conceptual framework became necessary to manage these QIs and define "quality of health care" in coherence with policy, target priority area, and find the data collection gap. One of the principles for developing the framework was it must reflect a balanced view of quality and contemporary state of health care policy on quality. **Available measures:** N/A	**Process development:** N/A **Source/Endorsements:** Yes Advisory Council for Healthcare Quality Policy of the Department of Health **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to different context

Chow-Chua, 2002[124] **Name:** Singapore Quality Award Framework Singapore **Link:** https://www.researchgate.net/publication/242337657_Framework_for_Evaluating_Performance_and_Quality_Improvement_in_Hospitals	**Type of care:** Quality of care Hospital performance **Setting:** Hospital performance **Population:** Singapore **Intended use:** To evaluate the performance of a hospital using a model based on the Singapore Quality Award criteria and the balanced scorecard approach **Defined:** N/A	**Components and included domains:** Driver System Results Leadership and quality culture Use of information and analysis Human resource development and management Management of process quality Strategic planning Quality and operational results Customer focus and satisfaction **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks include health systems infrastructure resources/human resource development and management. **Differences:** This framework includes: Driver; System; Results; Leadership and quality culture; Use of information and analysis; Management of process quality; Strategic planning; Quality and operational results; and Customer focus and satisfaction, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** N/A	**Process development:** Not clearly reported **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** No Suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically
Chowdhury, 2021[125] **Name:** Model of Care Saudi Arabia **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8321618/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Saudia Arabia population **Intended use:** Serve as a framework to guide the Kingdom of Saudi Arabia to become a pioneer nation globally by achieving three main goals: a vibrant society, a thriving economy, and an ambitious nation **Defined:** Physical wellbeing = N/A Mental wellbeing = N/A Social wellbeing = N/A Activated person = role that individuals and their families play in keeping well and taking care of their health through self-care, awareness, and empowerment Healthy communities = support activated people by encouraging them to lead	**Components and included domains:** Physical wellbeing Mental wellbeing Social wellbeing Activated person Healthy communities Virtual care Primary care General hospital care Specialized hospital care Keep me well Planned care Women and children Urgent care Chronic care Last phase **Equity/disparities:** Equity and disparities are not explicitly addressed in this framework. **Context:** N/A	**Similarities:** Both frameworks include access, timeliness, safety, care coordination, continuity of care, types of care, and health systems infrastructure capabilities. Effectiveness is considered in the framework, but not explicitly listed as a component. **Differences:** The MOC framework includes the components: keep me well, planned care, women and children, urgent care, last phase, physical wellbeing, mental wellbeing, social wellbeing, activated person, healthy communities, and virtual care while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** N/A	**Process development:** Three national workshops (three care design groups; the Care Design Group (CDG)) were held with the key stakeholders' participation. In the first workshop (the CDG 1), the participants from different regions and different health care sectors in KSA came together to agree on the key issues facing the current health care services and critical areas of improvement. Based on the key issues and priorities developed in CDG 1, the second workshop participants in the CDG 2 designed and suggested the initial list of interventions for each of the six Systems of Care (SOC) included as part of the new MOC. In the third workshop, the CDG 3, the National SOC Leaders, and international experts, along with other

	healthy lifestyles, providing them with the appropriate information, and providing them with access to community care and wellness facilities Virtual care = authoritative source of health advice; in most instances, virtual care will serve as people's first point of contact with medical care providers, improving people's access to medical information and guiding them to navigate the health care system and seek appropriate care Primary care = N/A General hospital care = N/A Specialized hospital care = N/A Keep me well = health coach program, community-based wellness programs, workplace wellness program, school wellness programs, healthy food promotion, health edutainment programs, promoting the Saudi CDC Planned care = one-stop clinics, pathway optimization, length of stay reduction initiatives, step-down and post-discharge services Women and children (also noted as safe birth) =premarital screening, preconception care services, maternity care services, national birth registry, postnatal care services, neonatal care services, well baby clinics Urgent care = resource control center, urgent care clinics, specialized critical care centers Chronic care = chronic disease screening, case coordination, continuing care services			participants, finalized the new MOC design for the Kingdom. It included detailing each of the six SOC's design that constitutes the MOC and considering how the MOC would be adjusted to serve in different contexts, including the City, Town, Rural, Hajj & Umrah, Mental Health, Children's needs. His Excellency, the Minister of Health, launched the new MOC on 23 April 2017. The second phase of the New MOC was conducted in two parallel workstreams over five months (April to August 2017). The first workstream was the regional pathway development focused on working with five pathfinders to develop the national SOC designs into implementable regional pathways. The second workstream was the national implementation planning focused on working with the national taskforces of experts on de- signing and planning for the national development of six cross-cutting and "Keep Well" interventions that require standardized national implementation. **Source/Endorsements:** Yes National Transformation Program **Stakeholder engagement:** Yes Three national workshops were held with key stakeholders, including over 450 Saudi doctors, nurses, pharmacists, dentists, and patients. They

	Last phase = patient and family support, hospice care services, multidisciplinary team development			worked together to design comprehensive care system for meeting health needs throughout the Kingdom. **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically
CIHI, 2004[117] **Name:** Canadian health indicators framework Canada **Link:** https://publications.gc.ca/collections/Collection/H115-16-2004E.pdf	**Type of care:** Other Population health (health indicators), quality 1 aspect **Setting:** Population and public health **Population:** Canada **Intended use:** To address the health and SDOH of Canadians and healthcare of Canada **Defined:** Health status = health conditions, human functions, well-being, deaths Non-medical determinants of health = health behaviors, living and working conditions, personal resources, environmental factors Healthcare performance = acceptability, accessibility, appropriateness, competence, continuity, effectiveness, efficiency, safety Community and healthy system characteristics = community, health system, resources	**Components and included domains:** Health status Non-medical determinants of health Healthcare performance Community and healthy system characteristics Equity **Equity/disparities:** Equity is a crosscutting dimension of the framework. **Context:** The framework has been adapted in several publications, and has been applied to measuring health and healthcare.	**Similarities:** Both frameworks include access, effectiveness, efficiency, and safety, and has equity as a crosscutting dimension. Both frameworks also includes either health system infrastructure capabilities or resources. **Differences:** The CHI framework addresses health indicators, and encompasses health status, non-medical determinants of health, community and health system characteristics as well as health system performance, while the 2010 NASEM framework is more focused healthcare delivery. **Policy levers:** N/A **Available measures:** N/A	**Process development:** N/A **Source/Endorsements:** Yes Canadian Institute for Health Information **Stakeholder engagement:** Yes Stakeholders were consulted across the country for the Health Indicators project. Not specified how. **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied in different context
CMS, 2011[122] **Name:** Quality Measures for Accountable Care Organizations US	**Type of care:** Quality of care **Setting:** Healthcare/ Accountable care organizations **Population:** Medicare patients	**Components and included domains:** Better care for individuals: Patient/caregiver experience	**Similarities:** Both frameworks address healthcare delivery in some way, and includes the domains care coordination, safety, and types of care.	**Process development:** Not reported **Source/Endorsements:** Yes CMS **Stakeholder engagement:** No

Link: https://www.cdc.gov/cliac/docs/addenda/cliac0212/Tab_28_CLIAC_2012Feb_Reference08_ACO_Factsheet.pdf	**Intended use:** To help measure performance of accountable care organizations **Defined:** N/A	Care coordination/ patient safety Better health for populations: Preventive health At risk population - diabetes At risk population - hypertension At risk population - ischemic vascular disease At risk population - heart failure At risk population - coronary artery disease **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Differences:** The CMS framework addresses accountable care organizations for medicare patients, while the 2010 NASEM framework addresses general healthcare delivery in the general population. The Accountable Care Organizations performance framework includes patient experience, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** Better care for individuals (patient/caregiver experience): getting timely care, appointments, and information; how well your doctors communicate; patients' rating of doctor; access to specialists; health promotion and education; shared decision making; health status/functional status Better care for individuals (care coordination/patient safety): risk-standardized, all condition readmission; ambulatory sensitive conditions admissions: COPD, congestive heart failure; percent of PCPs who successfully qualify for an EHR incentive program payment; medication reconciliation: reconciliation after discharge from an inpatient facility; falls - screening for fall risk Better health for populations: influenza immunization; pneumococcal vaccination; adult weight screening and follow-up; tobacco use assessment and tobacco	**Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

			cessation intervention; depression screening; colorectal cancer screening; mammography screening; proportion of adults 18+ who had their blood pressure measured within the preceding 2 years; diabetes composite (all or nothing scoring): hemoglobin A1c control (<8%); diabetes composite (all or nothing scoring): low density lipoprotein (<100); diabetes composite (all or nothing scoring): blood pressure <140/90; diabetes composite (all or nothing scoring): tobacco non use; diabetes composite (all or nothing scoring): aspirin use; diabetes mellitus: hemoglobin A1c poor control (>9%); hypertension: blood pressure control; ischemic vascular disease: complete lipid profile and LDL control <100 mg/dl; ischemic vascular disease: use of aspirin or another anti thrombotic; heart failure: beta blocker therapy or left ventricular systolic dysfunction; coronary artery disease composite: all or nothing scoring: drug therapy for lowering LDL-cholesterol; coronary artery disease composite (all or nothing scoring): angiotensin-converting enzyme inhibitor or angiotensin receptor blocker therapy for patients with CAD and diabetes and/or left ventricular systolic dysfunction	

CMS, 2022[120] **Name:** CMS National Quality Strategy US **Link:** https://www.cms.gov/files/document/cms-national-quality-strategy-handout.pdf	**Type of care:** Quality of care **Setting:** Healthcare **Population:** All individuals **Intended use:** To promote the highest quality outcomes and safest care for all individuals **Defined:** Equity and Engagement = advance health equity and whole-person care; engage individuals and communities to become partners in their care Safety and Resiliency = achieve zero preventable harm; enable a responsive and resilient health care system to improve quality Outcomes and Alignment = improve quality and health outcomes across the care journey; align and coordinate across programs and care settings Interoperability and Scientific Advancement = accelerate and support the transition to a digital and data-driven health care system; transform health care using science, analytics, and technology	**Components and included domains:** Equity and engagement Outcomes and Alignment Safety and Resiliency Interoperability and Scientific Advancement **Equity/disparities:** Equity is one of the four key domains **Context:** Focus on high-impact areas: maternal health, behavioral health, equity, and safety; deploy comprehensive quality improvement approaches; collaborate with other federal agencies and external partners (e.g., VA, AHRQ, CDC, CQMC) to promote alignment in quality measurement; collect social drivers/determinants of health data across programs and health care settings; align across HHS to implement actions from the Presidents' Council of Advisors on Science and Technology to further enhance patient safety, and much more.	**Similarities:** Both frameworks consider equity, safety, and care coordination. **Differences:** The 2010 NASEM framework focuses more narrowly on healthcare while the CMS National Quality Strategy more broadly addresses health equity and considers other aspects such as using science, analytics and technology to transform health care. **Policy levers:** One of the initial actions of the CMS objective to improve quality in high priority clinical areas is to develop dashboards to inform policy decisions, among other things. A success target is to increase alignment across quality initiatives with quality policies. **Available measures:** To further the goals of the CMS National Quality Strategy, CMS leaders from acrossthe agency have come together to streamline quality measures across CMS quality programs for the adult and pediatric populations. This “Universal Foundation” of quality measures will focus provider attention, reduce burden, identify disparities in care, prioritize development of interoperable, digital quality measures, allow for cross-comparisons across programs, and help identify measurement gaps. As CMS moves forward with the Universal Foundation, work will begin to identify foundational measures in other specific settings and	**Process development:** N/A **Source/Endorsements:** Yes CMS **Stakeholder engagement:** Yes CMS leaders **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested

			populations to support further measure alignment across CMS programs as applicable.	
CMS, 2022[121] **Name:** CMS Framework for Health Equity US **Link:** https://www.cms.gov/files/document/cms-framework-health-equity-2022.pdf	**Type of care:** Disparities, equity, SDOH Equity, culturally tailored services 1 aspect **Setting:** Healthcare, population health, and policy **Population:** Healthcare organizations and individuals that CMS serves **Intended use:** To help examine health inequities to identify and address drivers of disparities **Defined:** Priority 1: Expand the Collection, Reporting, and Analysis of Standardized Data Priority 2: Assess Causes of Disparities Within CMS Programs, and Address Inequities in Policies and Operations to Close Gaps Priority 3: Build Capacity of Health Care Organizations and the Workforce to Reduce Health and Health Care Disparities Priority 4: Advance Language Access, Health Literacy, and the Provision of Culturally Tailored Services Priority 5: Increase All Forms of Accessibility to Health Care Services and Coverage	**Components and included domains:** Priority 1, Priority 2, Priority 3, Priority 4, Priority 5 **Equity/disparities:** The aim of the framework is to help examine health inequities to identify and address drivers of disparities. **Context:** N/A	**Similarities:** Both frameworks considers healthcare, equity, and access. **Differences:** The 2010 NASEM framework addresses healthcare delivery and includes equity as a dimension, while the CMS framework addresses health equity and includes healthcare as a component. **Policy levers:** One of the components of the framework is Priority 2: Assess Causes of DisparitiesWithin CMS Programs, and Address Inequities in Policies and Operations to Close Gaps. **Available measures:** N/A	**Process development:** 1. 2015 CMS Equity Plan: lessons learned, continued refinement, assess progress 2. Stakeholder Engagement: Feedback from diverse stakeholders; listening sessions 3. Review of the Evidence Base: regulatory and statutory guidelines, recommendations from federal commissions and advisory groups base, consultations with wide range of SMEs, literature review **Source/Endorsements:** Yes CMS **Stakeholder engagement:** Yes Feedback from diverse stakeholders on CMS equity plan in 2015; listening sessions to help work towards framework development **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically
Committee on Quality Measures for the Healthy People Leading Health Indicators, 2013[126] **Name:** Healthy People 2020 Leading Health Indicator Topics and Leading Health Indicators US	**Type of care:** Other Population health **Setting:** Population health **Population:** US population **Intended use:** To address population health **Defined:** Access to health services = persons with medical	**Components and included domains:** Access to health services Clinical preventive services Environmental quality Injury and violence Maternal, infant, and child health Mental health	**Similarities:** Both frameworks include access and types of care. **Differences:** The Healthy People 2020 framework addresses population health more so, while the 2010 NASEM framework addresses healthcare delivery. The	**Process development:** Not reported **Source/Endorsements:** Yes HHS **Stakeholder engagement:** No **Evidence-based:** No

Link: https://pubmed.ncbi.nlm.nih.gov/24872981/	insurance; persons with a usual primary care provider Clinical preventive services = adults who receive a colorectal cancer screening based on the most recent guidelines; adults with hypertension whose blood pressure is under control; adult diabetic population with an A1c value greater than 9%; children aged 19-35 months who receive the recommended doses of DTaP, polio, MMR, Hip, hepatitis B, varicella, and PCV vaccines Environmental quality = air quality index exceeding 100; children aged 3-11 years exposed to secondhand smoke Injury and violence = fatal injuries; homicides Maternal, infant, and child health = infant deaths; preterm births Mental health = suicides; adolescents who experience major depressive episodes Nutrition, physical activity, and obesity = adults who meet current Federal physical activity guidelines for aerobic physical activity and muscle strengthening activity; adults who are obese; children and adolescents who are considered obese; total vegetable intake for persons aged 2 years and older Oral health = persons aged 2 years and older who used the oral health care system in the past 12 months Reproductive and sexual health = sexually active females aged 15-44 years who received	Nutrition, physical activity, and obesity Oral health Reproductive and sexual health Social determinants Substance abuse Tobacco **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	Healthy People 2020 includes SDOH explicitly while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** Access to health services: persons with medical insurance; persons with a usual primary care provider Clinical preventive services: adults who receive a colorectal cancer screening based on the most recent guidelines; adults with hypertension whose blood pressure is under control; adult diabetic population with an A1c value greater than 9%; children aged 19-35 months who receive the recommended doses of DTaP, polio, MMR, Hip, hepatitis B, varicella, and PCV vaccines Environmental quality: air quality index exceeding 100; children aged 3-11 years exposed to secondhand smoke Injury and violence: fatal injuries; homicides Maternal, infant, and child health: infant deaths; preterm births Mental health: suicides; adolescents who experience major depressive episodes Nutrition, physical activity, and obesity: adults who meet current Federal physical activity guidelines for aerobic physical activity and muscle strengthening activity; adults who are obese; children and adolescents who are considered obese; total vegetable intake for persons aged 2 years and older Oral health: persons aged 2 years and older who used the oral	**Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied in different contexts

	reproductive health services in the past 12 months; persons living with HIV who know their aerostats Social determinants = students who graduate with a regular diploma 4 years after starting 9th grade Substance abuse = adolescents (12-17 years) using alcohol or any illicit drugs during the past 30 days; adults engaging in binge drinking during the past 30 days Tobacco = adults who are current cigarette smokers; adolescents who smoked cigarettes in the past 30 days		health care system in the past 12 months Reproductive and sexual health: sexually active females aged 15-44 years who received reproductive health services in the past 12 months; persons living with HIV who know their aerostats Social determinants: students who graduate with a regular diploma 4 years after starting 9th grade Substance abuse: adolescents (12-17 years) using alcohol or any illicit drugs during the past 30 days; adults engaging in binge drinking during the past 30 days Tobacco: adults who are current cigarette smokers; adolescents who smoked cigarettes in the past 30 days	
Commonwealth Fund, 2004[225] **Name:** N/A Multiple countries **Link:** https://www.commonwealthfund.org/sites/default/files/documents/___media_files_publications_fund_report_2004_jun_first_report_and_recommendations_of_the_commonwealth_funds_international_working_group_on_quality_in_ministers_complete2004report_752_pdf.pdf	**Type of care:** Quality of care **Setting:** Healthcare **Population:** International population **Intended use:** Highlights the categories of international measures/quality indicators of health care quality **Defined:** Appropriateness and Effectiveness Indicators = Breast cancer 5-year relative survival rate; Breast cancer 5-year observed survival rate; Breast cancer screening rate; Cervical cancer 5-year relative survival rate; Cervical cancer 5-year observed survival rate; Cervical cancer screening rate; Colorectal cancer 5-year relative survival rate; Colorectal cancer 5-year observed survival rate; Childhood leukemia 5-year relative survival rate; Childhood	**Components and included domains:** Appropriateness and Effectiveness Indicators Accessibility Indicators Continuity and Acceptability Indicators **Equity/disparities:** Equity and disparities are not explicitly addressed in this framework. **Context:** N/A	**Similarities:** Both frameworks addresses healthcare delivery, and include the domains effectiveness, access, timeliness, and continuity of care. **Differences:** The Commonwealth Fund framework includes patient experience, while the 2010 NASEM framework does not do so explicitly. The Commonwealth Fund framework serves more as categories of quality indicators, while the 2010 NASEM framework serves as a framework more broadly and not specifically for quality indicators. **Policy levers:** The opportunity to build on the substantial progress that has been made, the model that the International	**Process development:** Conceptualization of Quality; Indicator Selection using the criteria reported in the 'criteria' field (1. Compile available indicators; 2. Review evidence base, policy relevance, actionability, and interpretability; 3. Assess feasibility for international comparisons; 4. Improve international comparability; 5. Ensure reliability). **Source/Endorsements:** Yes Commonwealth Fund **Stakeholder engagement:** No Suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail)

	leukemia 5-year observed survival rate; Non-Hodgkin's Lymphoma 5-year relative survival rate; Non-Hodgkin's Lymphoma 5-year observed survival rate; Kidney transplant 5-year observed survival rate; Liver transplant 5-year observed survival rate; AMI 30-day case-fatality rate, ages 20–84; Ischemic stroke 30-day case-fatality rate, ages 20–84; Asthma mortality rate per 100,000 people ages 5–39, 1990–99 Suicide rate per 100,000 people, all ages; Suicide rate per 100,000 people, ages 15–19; Suicide rate per 100,000 people, ages 20–29; Influenza vaccination rate, age 65+; Polio vaccination rate, age 2; Incidence of pertussis per 100,000 people; Incidence of measles per 100,000 people; Incidence of Hepatitis B per 100,000 people; Non-smoking rate Accessibility Indicators = Difficulty seeing a specialist; Difficulty getting care nights or weekends; Ability to make a same-day doctor's appointment when needed; Waiting for emergency care a big problem; Waiting time >4 months for elective surgery; Waiting time <1 month for elective surgery; Financial barriers to getting medical care; Financial barriers to filling a prescription; Financial barriers to test, treatment, or follow-up care Continuity and Acceptability Indicators = Conflicting medical information from different		Working Group has demonstrated for international collaboration in the development of quality indicators, and the multinational commitment to taking this work forward together offer the promise that these efforts will eventually produce a comprehensive set of quality indicators that permit policymakers to compare overall health system performance across countries. **Available measures:** Appropriateness and Effectiveness Indicators: Breast cancer 5-year relative survival rate; Breast cancer 5-year observed survival rate; Breast cancer screening rate; Cervical cancer 5-year relative survival rate; Cervical cancer 5-year observed survival rate; Cervical cancer screening rate; Colorectal cancer 5-year relative survival rate; Colorectal cancer 5-year observed survival rate; Childhood leukemia 5-year relative survival rate; Childhood leukemia 5-year observed survival rate; Non-Hodgkin's Lymphoma 5-year relative survival rate; Non-Hodgkin's Lymphoma 5-year observed survival rate; Kidney transplant 5-year observed survival rate; Liver transplant 5-year observed survival rate; AMI 30-day case-fatality rate, ages 20–84; Ischemic stroke 30-day case-fatality rate, ages 20–84; Asthma mortality rate per 100,000 people ages 5–39,	**Validity testing status:** Not tested No indication that this has been tested empirically

	providers; Patient-doctor communication: important questions unanswered; Patient-doctor communication: doctor does not ask your opinion; Patient-doctor communication: no discussion of emotional burden of illness; Composite rating of physician responsiveness as excellent/very good		1990–99 Suicide rate per 100,000 people, all ages; Suicide rate per 100,000 people, ages 15–19; Suicide rate per 100,000 people, ages 20–29; Influenza vaccination rate, age 65+; Polio vaccination rate, age 2; Incidence of pertussis per 100,000 people; Incidence of measles per 100,000 people; Incidence of Hepatitis B per 100,000 people; Non-smoking rate Accessibility Indicators: Difficulty seeing a specialist; Difficulty getting care nights or weekends; Ability to make a same-day doctor's appointment when needed; Waiting for emergency care a big problem; Waiting time >4 months for elective surgery; Waiting time <1 month for elective surgery; Financial barriers to getting medical care; Financial barriers to filling a prescription; Financial barriers to test, treatment, or follow-up care Continuity and Acceptability Indicators: Conflicting medical information from different providers; Patient-doctor communication: important questions unanswered; Patient-doctor communication: doctor does not ask your opinion; Patient-doctor communication: no discussion of emotional burden of illness; Composite rating of physician responsiveness as excellent/very good	
Commonwealth Fund, 2006[226]	**Type of care:** Quality of care **Setting:** Health system **Population:** U.S.	**Components and included domains:** High quality and safety Access to care	**Similarities:** Both frameworks addresses healthcare, and include the components safety, access, equity, efficiency, value,	**Process development:** Not reported

Name: Core Goals and Priorities for Performance Improvement US **Link:** https://www.commonwealthfund.org/sites/default/files/documents/___media_files_publications_fund_report_2006_aug_framework_for_a_high_performance_health_system_for_the_united_states_commission_framework_high_performance_943_pdf.pdf	**Intended use:** To help achieve a high performance health system **Defined:** High care quality and safety = patients get the right health care that is effective, as needed for prevention, treatment, and palliation; care provided is safe; health care is coordinated over time; care is patient-centered Access to care = universal participation; financial protection and established benefits; care is affordable; care is provided equitably Efficiency, high value care = care delivery and insurance administration is efficient; care is delivered at right time and right setting; care is evaluated for both effectiveness and value System capacity to improve = investment in innovation and research; information infrastructure; educational system; responds quickly, at both individual and population levels; culture of improvement	Efficiency, high value care System capacity to improve **Equity/disparities:** Equity for all is one of the components (goals) of the framework. **Context:** Authors explained initial steps to be taken based on the framework to work towards improvement in performance: expand health insurance coverage, implement major quality and safety improvements, work toward a more organized delivery system that emphasizes primary and preventive care that is patient-centered, increase transparency and reporting on quality and costs, reward performance for performance quality and efficiency, expand the use of interoperable information technology, encourage collaboration among stakeholders.	patient-centeredness, care coordination, effectiveness, health system infrastructure resources/capabilities, and types of care (prevention, treatme **Differences:** The Commonwealth Fund's framework is designed as core goals and priorities for performance improvement, while the 2010 NASEM framework is a framework for addressing healthcare delivery. The Commonwealth Fund's framework includes educational system, culture of improvement, and investment in innovation and research that the 2010 NASEM framework does not. **Policy levers:** Authors note that policy changes need to be made as needed based on review of data on performance of all stakeholders in health system. Policies may be implied to align with core goals to improve performance. A high performing health system in the U.S. will likely combine market forces and public policy to achieve its goals. It's important that public policy ensures that all Americans have access to the same cost-effective, high quality care. Public policy needs to take the lead to achieve significant changes in expanding health insurance coverage. **Available measures:** N/A	**Source/Endorsements:** Yes Commonwealth Fund **Stakeholder engagement:** No Model suggested by organization **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied in different context
Council of Australian Governments, 2011[105]	**Type of care:** Quality of care **Setting:** Healthcare	**Components and included domains:** Objectives: performance	**Similarities:** Both frameworks address healthcare, and include	**Process development:** N/A

Name: Report on Government Services Framework Australia **Link:** https://www.aihw.gov.au/getmedia/ea9b2361-38de-43f3-9426-8705fcc8f1da/performance-and-accountability-framework.pdf.aspx'	**Population:** Australia **Intended use:** To support a safe, high quality Australian health system, through improved transparency and accountability **Defined:** Effectiveness = measure how well the outputs of a service achieve the stated objectives of that service Cost-effectiveness = measure how efficiently the outcomes of a service were achieved Efficiency = measure how efficiently the outputs of a service were achieved Equity = measure how well a service meets the requirements of particular groups in society with special needs	Equity: access, equity of access indicators, equity of outcome indicators Effectiveness, access, access indicators, appropriateness, appropriateness indicators, quality, quality indicators, program effectiveness indicators Efficiency: inputs per output unit, technical efficiency indicators, cost effectiveness indicators **Equity/disparities:** Equity is one of the components of the framework, and equity of access and equity of outcome is also included in the framework. **Context:** Medicare Local indicators, hospital/local health networks	equity, effectiveness, efficiency, and access. **Differences:** The RoGS framework doesn't have equity as a crosscutting dimension, while the 2010 NASEM framework does. The RoGS framework has equity, effectiveness, and efficiency three main domains, and has indicators as part of the framework, while the 2010 NASEM framework does not. **Policy levers:** The framework has been designed to facilitate the achievement of key national healthpolicy objectives, such as the ongoing improvement of the safety and quality of the health system; ensuring efficiency and sustainability through a rigorous data collection, monitoring and reporting system; improving integration between the primary health care and hospital sectors; and enabling comparisons between all sectors of the Australian health system including comparisons across the public and private sectors to assist both the public and private sectors' improving performance. **Available measures:** Initial indicators for hospitals and local hospital networks: Effectiveness - safety and quality: hospital standardized mortality ratio; death in low-mortality diagnostic related groups; in hospital mortality rates for acute myocardial infarction, heart failure, stroke, fractured neck of femur, and	**Source/Endorsements:** Yes Council of Australian Governments **Stakeholder engagement:** No Model suggested by council **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to a different context

			pneumonia; unplanned hospital readmission rates for patients discharged following management of acute myocardial infarction, heart failure, knee and hip replacements, depression, schizophrenia, and pediatric tonsillectomy and adenoidectomy; healthcare associated Staphylococcus aureus (including MRSA) bacteriaernia; healthcare associated Clostridium difficile infections; rate of community follow up within the first seven days of discharge from a psychiatric admission Equity and effectiveness - access: access to services by type of service compared to need; ED waiting times by urgency category; % of ED patients transferred to a ward or discharged within 4 hours, by triage category; elective surgery patient waiting times by urgency category; cancer care pathway - waiting times for cancer care Efficiency - efficiency and financial performance: relative stay index for multi-day stay patients; day of surgery admission rates for non emergency multi-day stay patients; cost per weighted separation and total case weighted separations; financial performance against activity funded budget (annual operation result)	
Davis, 2013[127] **Name:** Efficiency, effectiveness, equity (E^3)	**Type of care:** Quality of care Performance of health systems/hospital	**Components and included domains:** Efficiency Effectiveness Equity	**Similarities:** Both frameworks include the domains equity, efficiency, and effectiveness.	**Process development:** Not reported

New Zealand **Link:** https://www.sciencedirect.com/science/article/pii/S0168851013000602?via%3Dihub	**Setting:** Health system/hospital performance **Population:** New Zealand **Intended use:** To assess the performance of hospitals **Defined:** Efficiency = N/A Effectiveness = clinical impact, including safety and quality Equity = N/A	**Equity/disparities:** Equity is one of the three main domains of the framework. **Context:** N/A	**Differences:** The 2010 NASEM framework includes other components that are not in the E^3 framework. **Policy levers:** While there is an obvious parallel between the "balanced scorecard" concept as applied at health system and hospital levels (for example, Yuen and Nga) respectively, the distinct policy levers and lines of accountability for these two levels (policy-making versus management), as well as the different requirements of data aggregation, suggest that these lines of work are at this stage best left distinct. **Available measures:** N/A	**Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** No Suggested by authors **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to a different context
De Rosis, 2022[128] **Name:** Adapted version of Donabedian Framework US **Link:** https://onlinelibrary.wiley.com/doi/10.1002/hpm.3732	**Type of care:** Quality of care **Setting:** Healthcare **Population:** General population **Intended use:** To address healthcare quality **Defined:** What there is: structure = resources, personnel, infrastructures What is done: process = service provision, coordination --> PREMs What is achieved: outcome = health status and satisfaction of patients --> PROMs PREMs	**Components and included domains:** Structure Process Outcome **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks include health system infrastructure capabilities and coordination of care. **Differences:** The adapted Donabedian framework includes structure, process, and outcome that is not included in the 2010 NASEM framework. **Policy levers:** N/A **Available measures:** N/A	**Process development:** Not clearly reported **Source/Endorsements:** No Suggested by author **Stakeholder engagement:** No Suggested by author **Evidence-based:** No **Defined population:** No (target unclear) **Validity testing status:** Not tested No indication that this has been tested empirically
Donabedian, 1966[129] **Name:** Donabedian Model US **Link:** https://www.ncbi.nlm.nih.gov/books/NBK44008/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Patients **Intended use:** To examine health services and evaluate quality of health care **Defined:** Structure = the context in which care is delivered, including hospitals,	**Components and included domains:** Structure; Process; Outcome **Equity/disparities:** Equity and disparities is not explicitly addressed in the framework. **Context:** Applicable to diverse healthcare settings and among various levels within a delivery	**Similarities:** Both frameworks focuses on quality of healthcare. **Differences:** The Donabedian framework has three main domains, while the 2010 NASEM framework has numerous components. The Donabedian framework doesn't	**Process development:** Avedis Donabedian, a physician and health services research at the University of Michigan, developed the model **Source/Endorsements:** No Model suggested by individual author

	buildings, staff, financing, equipment Process = transactions between patients and providers throughout the delivery of healthcare Outcomes = the effects of healthcare on the health status of patients and populations	system. Used to modify structures and processes within a healthcare delivery unit, such as a small group practice or ambulatory care center, to improve patient flow or information exchange. Also applicable to the structure and process for treating certain diseases and conditions with the aim to improve the quality of chronic disease management.	include an equity component while the 2010 NASEM framework does. **Policy levers:** N/A **Available measures:** N/A	**Stakeholder engagement:** No Model suggested by individual author **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied in different context
Dover, 2019[130] **Name:** Health Equity Measurement Framework Canada **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6379929/	**Type of care:** Disparities, equity, SDOH Equity, care appropriateness, safety 1 dimension **Setting:** Public health, public policy **Population:** General population **Intended use:** To measure the direct and indirect effects of SDOH to support improved statistical modeling and measurement of health equity **Defined:** Socioeconomic, cultural, and political context = the structure of the society and the socioeconomic, political, cultural, and functional mechanisms through which it operates Social stratification process = the ways a society is hierarchically stratified, based on systematically unequal distribution of power, prestige, and resources, as well as discrimination Social location = the rank or position an individual is attributed to hold in a sociocultural and economic	**Components and included domains:** Socioeconomic, cultural, and political context Social stratification process Health policy context Social location Social circumstances Material circumstances Psychosocial stressors Appraisal and coping Biology Environment Health-related behaviors Health beliefs Stress response Health state Pre-existing health state Need Utilization of health-promoting resources Acceptability Appropriateness Continuity Safety Effectiveness Availability Accessibility Health outcome **Equity/disparities:** The framework was developed to help measure health equity. **Context:** N/A	**Similarities:** Both frameworks consider equity, effectiveness, safety, and access. **Differences:** The HEMF addresses SDOH, while the 2010 NASEM framework addresses healthcare delivery. The HEMF framework contains many arrows showing how each component is related, as well as effect modification. The HEMF framework considers many components outside of the healthcare system, such as socioeconomic, cultural, and political context and health policy context. **Policy levers:** The framework provides a more encompassing view of themultitude of SDOH and drivers of health service utilisation and by guiding quantitative analysis for public health surveillance and policy development. This unified framework includes the socioeconomic, cultural, and political context, health policy context. The HEMF highlights intervention areas to be influenced by strategic public policy for any organisation	**Process development:** Initial development based on WHO's SDOH framework to create Alberta Quality Matrix for Health. Identification of other components based on Canadian Council on SDOH's review, which identified 36 frameworks on SDOH. Conceptualization of components and definition of causal pathways based on narrative literature review including published and grey literature. Consultation process with potential knowledge users, including academics, public health practitioners, and policy influencers from municipal, provincial, and federal departments. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes At the stages of conceptualisation of the framework components and definition of causal rela-tionships, they were invited to critically reflect on the causal pathways, completeness, and applicability of the HEMF in

	hierarchy within a society at a given time Social circumstances = social cohesion at the population level and social capital at the individual level Material circumstances = the financial means (income and material or intangible assets) allowing purchase and consumption for ensuring healthy, dignifying living conditions Psychosocial stressors = any social, environmental or external challenge that requires an individual to adapt to it Appraisal and coping = appraisal refers to the evaluation of the event; coping process is about a variety of potential strategies to deal with the Stressor Biology = biological factors (age, sex, genetics, and hormones) associated with susceptibility to certain diseases and injuries, which can result in changes in Health State Environment = broad category involving area-based measures and physical and social features of the space Health-related behaviors = any activity undertaken by people that influences directly or indirectly their health Health beliefs = individual or collective perceptions of what influences health in a positive or negative way Stress response = acts on multiple body systems (neuro-endocrine, autonomic nervous, metabolic, and immune		whose purview has an effect on health, including helping non-health sectors (such as education and labour) to better understand how their policies influence population health and perceive their role in health equity promotion. **Available measures:** N/A	their work. The elicitation of feedback helped refine the HEMF by addressing gaps in components or in the relationships between them, validating and clarifying concepts, and ensuring the potential for application in the area of equity surveillance and measurement. **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically

	systems) and can change a wide variety of body markers Health state = consists of any health description and/or measurement of an individual at a given time and may involve any aspect of physical or mental health and well-being Pre-existing health state = any previous health state that can change the likelihood of occurrence of the particular Health State under analysis Need = either self-perceived or professionally evaluated Need to utilize Health-promoting Resources Utilization of health-promoting resources = captured from the public, private, and non-for-profit sectors. These sectors provide primary, secondary, and tertiary healthcare services for prevention, diagnosis, and treatment of illnesses, diseases, injuries, and disabilities Health policy context = the nexus of policies and decisions influencing Availability of health-promoting resources and a number of dimensions of health system quality, including Acceptability, Appropriateness, Safety, Effectiveness, and Continuity Acceptability = the respectfulness and responsiveness of healthcare to individual's needs, preferences, and expectations Appropriateness = receiving a suitable, evidence-based health service that is balanced with individual needs and preferences			

	Continuity = health services are well coordinated and integrated for predictable and coherent delivery of care Safety = mitigation of risks when an individual is receiving care in the health system Effectiveness = the use of current scientific knowledge and best practises to achieve optimal health outcomes for the individual Availability of health-promoting resources = captures 1) the presence of health professionals, services, and supplies; 2) the existence and spatial location of physical infrastructure (e.g., facilities and ambulances); and 3) the health system's organisational characteristics, including waiting times and hours of operation Accessibility = individuals' ability to be able to use a health-promoting resource, once a Need is identified Health outcome = a health state after any type of (potential) Utilisation of Health-promoting Resources			
Fisher, 2013[131] **Name:** N/A US **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3557960/	**Type of care:** Quality of care **Setting:** Mental healthcare **Population:** US population **Intended use:** To develop a common framework of measures that will allow for international comparisons of mental health system performance **Defined:** Symptom or diagnostic assessment = schizophrenia or other	**Components and included domains:** Symptom or diagnostic assessment Evidence-based pharmacotherapy Evidence-based psychosocial interventions Other somatic interventions Substance use General medical care Continuity and coordination of care Access measures Utilization, cost and efficiency	**Similarities:** Both frameworks include safety, access, efficiency, types of care, care coordination, and continuity of care. **Differences:** The mental health care framework is targeted at mental health care while the 2010 NASEM framework is focused on health system delivery broadly. The mental health care framework includes disparities, social determinants	**Process development:** Representatives from each country submitted reports of quality measurement initiatives in mental health. Indicators were reviewed, and all measurable indicators were compiled and organized. **Source/Endorsements:** No Criteria suggested by authors **Stakeholder engagement:** Yes Representatives from each country submitted reports of

	psychotic illness; bipolar or depressive disorders; anxiety disorder; suicide risk; other Evidence-based pharmacotherapy = selection of medications; adequate medication dosage; medication adherence; polypharmacy; occurrence of side effects; monitoring; medication reconciliation; other Evidence-based psychosocial interventions = psychotherapy; assertive community treatment; case management; employment support or assistance; family psychoeducation; early intervention programs; other Other somatic interventions = Electroconvulsive therapy; other Substance use = assessment/screening; quantity/frequency of use; engagement in case; pharmacologic treatment; blood/urine monitoring; outcomes; psychosomatic treatment; coordination with substance abuse treatment; access to/wait times for substance abuse treatment; utilization of substance abuse treatment; integrated dual diagnosis treatment; other General medical care = preventive medical care or screening; chronic illness medical care; other Continuity and coordination of care = inpatient discharge planning; outpatient follow-up after inpatient discharge; coordination with outpatient mental health; coordination with	Patient safety Forensic or legal issues Outcome assessment Recovery Cultural or ethnic issues Population-based resources Client/family perceptions of care Other types of measures or domains **Equity/disparities:** Disparities is a subdomain (racial or ethnic disparities in care) of the culture or ethnic issues domain. **Context:** N/A	of health, and patient experience, while the 2010 NASEM framework does not address those explicitly. **Policy levers:** N/A **Available measures:** Symptom or diagnostic assessment: schizophrenia or other psychotic illness, bipolar or depressive disorders, anxiety disorder, suicide risk, other Evidence-based pharmacotherapy: selection of medications, adequate medication dosage, medication adherence, polypharmacy, occurrence of side effects, monitoring, medication reconciliation, other Evidence-based psychosocial interventions: psychotherapy, assertive community treatment, case management, employment support or assistance, family psychoeducation, early intervention programs, other Other somatic interventions: electroconvulsive therapy, other Substance use: assessment/screening, quantity/frequency of use, engagement in care, pharmacologic treatment, blood/urine monitoring, outcomes, psychosomatic treatment, coordination with substance abuse treatment, access to/wait times for substance abuse treatment, utilization of substance abuse treatment, integrated dual diagnosis treatment, other General medical care: preventive medical care or	quality measurement initiatives in mental health. Researchers at Columbia University reviewed the list of indicators and identified indicators that were unclear or were classified differently to develop consen-sus on the classification. Discrepancies were resolved by dis- cussion among the three lead authors to develop consensus on the evaluation and to iteratively modify the framework of domains and subdomains to better reflect the range and purpose of the measures collected. Coding was continued until 100% consensus was achieved. **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) Mental health care **Validity testing status:** Not tested No indication that this criteria set has been empirically tested

	primary care; inpatient readmission; other Access measures = access to primary care; access to emergency mental health care; access to social services, housing and foster care; access to/wait times for outpatient service; other Utilization, cost and efficiency = utilization of outpatient services; duration of hospitalization; other Patient safety = use of seclusion/restraint; mediation errors or adverse events; elopement/drop out; non-medication adverse events; falls/injuries; other Forensic or legal issues = criminal justice encounters; involuntary or compulsory hospitalizations; involuntary or compulsory community treatment; other Outcome assessment = change in reported symptoms; functioning; general health status; mortality; employment or income; housing; client or family self-assessment; other Recovery = access to peer or consumer services; recovery environment; shared decision making; other Cultural or ethnic issues = racial or ethnic disparities in care; training in cultural competency; access to culturally specific care; other Population-based resources = total expenditure for mental health services/population; mental health workforce/population; other		screening, chronic illness medical care, other Continuity and coordination of care: inpatient discharge planning, outpatient follow-up after inpatient discharge, coordination with outpatient mental health, coordination with primary care, inpatient readmissions, other Access measures: access to primary care; access to emergency mental health care; access to social services, housing and foster care; access to/wait times for outpatient service; other Utilization, cost and efficiency: utilization of outpatient services, duration of hospitalization, other Patient safety: use of seclusion/restraint, medication errors or adverse events, elopement/drop out, non-medication adverse events, falls/injuries, other Forensic or legal issues: criminal justice encounters, involuntary or compulsory hospitalization, involuntary or compulsory community treatment, other Outcome assessment: change in reported symptoms, functioning, general health status, mortality, employment or income, housing, client or family self-assessment, other Recovery: access to peer or consumer services, recovery environment, shared decision making, other Cultural or ethnic issues: racial or ethnic disparities in care, training in cultural competency,	

	Client/family perceptions of care = not subdivided Other types of measures or domains = not subdivided		access to culturally specific care, other Population-based resources: total expenditure for mental health services/population, mental health workforce/population, other Client/family perceptions of care: not subdivided Other types of measures or domains: not subdivided	
Freeman, 2018[132] **Name:** Framework for assessing regional primary health-care organisations' actions on health equity Australia **Link:** https://link.springer.com/article/10.1007/s00038-018-1083-9	**Type of care:** Disparities, equity, SDOH Equity, care quality 1 aspect **Setting:** Regional/local primary healthcare organizations **Population:** Australia **Intended use:** To help examine the equity performance of regional primary healthcare organizations, and to ultimately reduce health inequities in regional primary healthcare organizations **Defined:** Health equity as a goal of the organization = N/A Collect health equity information = N/A Plan and enact effective strategies to address inequities = N/A Evaluate equity impact of general initiatives, e.g., through an EFHIA = Benefits from general initiatives distributed more Community participation and engagement with communities affected by health inequities = transformed power relationships underpinning inequities Orient local PHC services towards health equity =	**Components and included domains:** Health equity as a goal of the organization Collect health equity information Community participation and engagement with communities affected by health inequities Plan and enact effective strategies to address inequities: Evaluate equity impact of general initiatives, e.g., through an EFHIA; Community participation and engagement with communities affected by health inequities; Orient local PHC services towards health equity; Address determinants of local health inequities Reduced health inequities in region **Equity/disparities:** The framework allows a platform for advancing knowledge and international comparison of the health equity efforts of regional primary health-care organizations. **Context:** Australian Medical Locals	**Similarities:** Both frameworks include access and equity. **Differences:** The framework by Freeman et al. addresses primary care specifically and equity is the central component of the framework, while the 2010 NASEM framework addresses healthcare delivery more broadly and equity is a cross-cutting dimension. The primary care framework provides more of a roadmap on how to reduce health inequities, while the 2010 NASEM framework is more of a framework to address different components and dimensions of healthcare quality. The primary care framework addressed health outcomes and SDOH, while the 2010 NASEM framework did not. **Policy levers:** N/A **Available measures:** N/A	**Process development:** The framework was developed based on theory, literature, and researcher deliberation. Data were drawn from Medicare Local documents, an online survey of 210 senior Medicare Local staff, and interviews with 50 survey respondents. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes Completed online survey or interviews to provide input on factors enabling or constraining population health planning, including addressing health equity, and Medicare Locals' achievements, engagement with stakeholders, community engagement, and PHC planning for four population groups: Aboriginal and Torres Strait Islander peoples, new migrants and refugees, people with mental illness, and people living in low socio-economic circumstances. These groups were selected as important to consider for health equity. **Evidence-based:** Empirically based

	strategies addressing equity of access to local PHC services, e.g. affordability, availability, and acceptability of services, and engagement strategies with local communities --> improved equity of access to local PHC services; strategies supporting access to other health care and social services, including other community services, secondary care, and tertiary care --> improved equity of access to health and social services; strategies addressing equity in quality of care, e.g. counteracting discrimination, attending to power differentials, tailoring treatment, advice, and interventions to the context of people's lives, providing culturally safe care, and trauma and violence-informed care --> improved equity in quality of care in local PHC services Address determinants of local health inequities = equity-sensitive health promotion campaigns targeting individual behaviour in their context, e.g. smoking, diet, exercise, alcohol and other drug use --> reduced inequities in smoking, diet, and other individual health behaviours; intersectoral collaborations to act on local inequities in living and working conditions --> more equitable local living and working conditions; contributions to broader advocacy on social, political, and cultural determinants of health --> more equitable distribution of broader			**Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied in different context

	social, political, and cultural determinants of health Reduced health inequities in region = N/A			
Gardner, 2010[133] **Name:** Performance measurement framework conceptual model US **Link:** https://journals.sagepub.com/doi/10.1177/1062860610366589	**Type of care:** Quality of care **Setting:** Healthcare **Population:** United States **Intended use:** To provide direction to policy makers and measure developers for future performance measure development and application **Defined:** Patient centered health care system interactions: level 1 - individual (individual clinician + patient); level 2 - micro organizational (local) (healthcare team); level 3 - marco organizational (regional) (healthcare delivery systems, hospitals, SNFs, specialty physician practices); level 4 - environmental (national) (health plans, employers) Measure aggregation categories: composite measures, multiple measure sets, individual measures Performance measure domains: structure, process, outcomes, access, patient experience, value of care	**Components and included domains:** Patient centered health care system interactions Measure aggregation categories Performance measure domains **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** Diabetes	**Similarities:** Both frameworks address healthcare, and includes access and value of care. **Differences:** The ACOP framework illustrates different levels of patient centered health care system interactions, including individual, micro organizational, macro organizational, and environmental, as well as measure aggregation categories, while the 2010 NASEM framework does not. The ACOP framework includes performance measure domains such as structure, process, outcomes and patient experience, while the 2010 NASEM framework does not. **Policy levers:** Framework was created to provide direction to policy makers and measure developers for future performance measure development and application. The American College of Physicians recommends that policy makers and measure developers adopt this clinical performance measurement framework to promote transformational change and improve the quality of health care in the United States. **Available measures:** N/A	**Process development:** N/A **Source/Endorsements:** Yes American College of Physicians **Stakeholder engagement:** No Model suggested by organization **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to a different context
Gauld, 2011[134] **Name:** N/A	**Type of care:** Quality of care Health system performance	**Components and included domains:** Healthy lives Quality	**Similarities:** Both frameworks include access, efficiency, equity, patient-centered, safety,	**Process development:** We drew upon national and international data to develop

New Zealand **Link:** https://pubmed.ncbi.nlm.nih.gov/21723641/	**Setting:** Health system performance **Population:** New Zealand **Intended use:** To assess health system performance derived from routine data **Defined:** Healthy lives = current state of New Zealand population health Quality = preventive care such as screening programs, coordination between primary care and other providers, and care received during hospitalization; care should be patient-centered and delivered in a safe environment Access = consideration of workforce and services capacity as well as whether services are accessible Efficiency = functioning in the most cost-effective manner with the least waste of time and effort Equity = a health system should provide services equitably, regardless of population ethnicity or socioeconomic status	Access Efficiency Equity **Equity/disparities:** Equity is one of the domains of the framework. **Context:** N/A	health systems infrastructure capabilities, types of care, and care coordination. **Differences:** The New Zealand framework includes healthy lives, and quality is stated explicitly as a domain, while NHQDR does neither of these. **Policy levers:** Results indicate that New Zealand's future policy activities could be directed toward: reducing infant mortality, obesity and diabetes; medicine reconciliation for hospitalized patients and reducing adverse events; eliminating unmet need and cost barriers in primary care settings and improving oral health access; lowering administrative costs; and reversing the inequities that are commonplace. New Zealand's scores for access and equity are of particular concern as values of equality underpin New Zealand health policy and society. Potential benefits aside, questions remain around how to use a scorecard in practical health policy settings. **Available measures:** Healthy lives: Potential years of life lost, per 100,000 people; Amenable mortality, deaths per 100,000; Deaths from cancer, deaths per 100,000; Infant mortality, deaths per 1000 live births; Healthy life expectancy at the age of 65 (males), years; Healthy life expectancy at the age of 65 (females), years Healthy life expectancy at the age of 65, years (m/f average scores);	benchmarks for health system performance, then applied basic ratio scores to compare New Zealand performances to the benchmark. 64 indicators were included in four assessment categories: healthy lives, quality, access, and efficiency. In a fifth category, 27 of these indicators were used to score health system equity. Indicator scores in each category were then averaged to give a health system score out of 100. **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** No Suggested by authors **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested This is the New Zealand version of the Commonwealth Fund scorecard, and shows that this is a model for health system assessment that can be applied in different country contexts

			Self-rated general health ≥ very good in adults; Self-rated general health ≥ very good in children aged 0–14 years; Justified school absence rate, per school year (2006); Obesity, BMI ≥ 30; Daily smoker; Hazardous alcohol consumption (audit ≥ 8); Prevalence of diagnosed diabetes mellitus Quality - adults receiving recommended screening and preventative care: flu vaccination; cervical screening; mammograms; cardiovascular assessment Quality - children receiving recommended screening and preventative care: children's immunizations; children who had one or more teeth removed due to decay/abscess/infection/gum disease; B4 school checks Quality - others: Better help for smokers to quit; Adults with mood disorder receiving medication; Children who are receiving treatment for asthma; Diabetes not under control (HbA1c < 8%); Adults with Hypertension who received plans for self management or have a nurse; Hospitalised patients with new treatment: medications reviewed at discharge; Any discharge gaps after hospitalisation*; Chronic patients readmitted to hospital due to complications; Patients who developed infections while in hospital; Reported medications or laboratory errors; Adverse events while in public hospital; Patients with	

			chronic conditions who think the health system needs to be rebuilt; Doctor rarely or never encourages you to ask questions; Doctor rarely or never tells you about treatment options or involves you in decisions; Chronic patients not given clear instructions from health professionals regarding further symptoms or when to seek help; Adults with chronic health problems given written instruction or plan for home care Access: GPs per thousand population; Physicians per thousand population; Regular GP; Regular GP (children); Unmet need for GP in the previous 12 months; Unmet need for GP in the previous 12 months (children); Cost barrier for GP access in the previous 12 months; Cost barrier for GP access in the previous 12 months (children); Uncollected prescription due to cost in the previous 12 months; Uncollected prescription due to cost in the previous 12 months (children); Never visited oral health care worker; Never visited oral health care worker (children); Unmet need for oral health care services in the previous 12 months; Unmet need for oral health care services in the previous 12 months (children); Primary health care provider available within 24 h; Population over 60 min from ED; Population over 30 min from GP	

			Efficiency (hospital throughput): Day surgery rates, % of elective and arranged surgery; Average length of stay, days; Improved access to elective surgery, % meeting target; Shorter waits for cancer treatment, % meeting target Efficiency (acute throughput): Shorter stays in emergency department (ED), % meeting target; Emergency triage times – triage 1, % meeting target; Emergency triage times – triage 2, % meeting target; Emergency triage times – triage 3, % meeting target Efficiency (wastage/errors): Test results not available or test repeated unnecessarily; Went to ED for condition that could have been treated by regular doctor; Perception of inefficient care; Attendance at speciality clinics Efficiency (additional costs): Health administration costs; Sick leave Equity - healthy lives: Infant mortality; Healthy life expectancy at the age of 65, males; Healthy life expectancy at the age of 65, females; Healthy life expectancy at the age of 65, total Self-rated general health ≥ very good in adults; Self-rated general health ≥ very good in children aged 0–14 years; Justified school absence rate; Obesity, BMI ≥ 30; Daily smoker; Hazardous alcohol consumption (audit ≥ 8); Prevalence of diagnosed diabetes mellitus	

			Equity - quality: Cardiovascular assessment; Children's immunisations; Children who had one or more teeth removed due to decay/abscess/infection/gum disease; Adults who are receiving medications for mood disorder; Children who are receiving treatment for asthma Equity - access: Regular GP, per thousand population; Regular GP (children), per thousand population; Unmet need for GP in the previous 12 months; Unmet need for GP in the previous 12 months (children); Cost barrier for GP access in the previous 12 months; Cost barrier for GP access in the previous 12 months (children); Uncollected prescription due to cost in the previous 12 months; Uncollected prescription due to cost in the previous 12 months (children); Never visited oral health care worker; Never visited oral health care worker (children); Unmet need for oral health care services in the previous 12 months; Unmet need for oral health care services in the previous 12 months (children); Primary health care provider available within 24 h	
Haj-Ali, 2017[135] **Name:** Primary Care Performance Measurement Framework for Ontario Canada	**Type of care:** Quality of care **Setting:** Primary care **Population:** Ontario, Canada **Intended use:** To help measure primary care performance in Ontario, Canada	**Components and included domains:** Access/timeliness Integration Efficiency Effectiveness Focus on population health Safety	**Similarities:** Both frameworks include equity as a cross-cutting dimension, and the components safety, effectiveness, efficiency, timeliness, access, patient/family centeredness, types of care, care coordination,	**Process development:** Environmental scan to examine the current state of primary care performance in Ontario, across Canada and internationally. Scan included comprehensive literature review, review of grey literature, and contacts with

Link: https://pubmed.ncbi.nlm.nih.gov/28277205/	**Defined:** Access/timeliness = extent of (avoidable) emergency department, walk-in clinic, urgent care center use; access to a regular primary care provider; access to an inter-professional primary care team; timely access at regular place of care; access to after-hours care (telephone and in-person); access to non face-to-face care (e.g., telephone, email, etc.); access to home visits for target populations; patient access to their own health information Integration = information sharing across the continuum of care including patients and family caregivers; care coordination with other health and community care providers and services; time to referred appointment with medical/surgical specialist or other specialized services; hospital admissions and readmissions; follow-up with regular primary care provider post hospital discharge; waiting time for community services; primary care providers' access to specialist advice via telephone, email, etc.; time to referred diagnostic tests (e.g., CAT scan, MRI, etc.); shared care arrangements for patients to see a specialist in their regular primary care setting Efficiency = per capita healthcare cost (primary care, specialist care, hospital care, diagnostics, pharmaceuticals, long-term care, community care); support for family caregivers; unnecessary	Patient-centeredness/person-centeredness Appropriate resources Equity **Equity/disparities:** Equity is a cross-cutting domain of the framework. **Context:** N/A	continuity of care, and health systems infrastructure cap **Differences:** The Ontario framework explicitly includes the domains integration, focus on population health, and patient experience, while the 2010 NASEM framework does not. The Ontario framework aims to address primary care performance, while the 2010 NASEM framework addresses health system delivery more generally. **Policy levers:** One of the recommendations by the Steering Committee was to equip primary care providers, organizations, health system managers, and policymakers with an understanding of performance measurement, quality improvement methods and leading practices. The framework should also be updated and revised as required to align with emerging evidence, changing policy priorities, new data sources and evolving information needs. Health system managers, policy makers and funders could use the measures to monitor system performance and the effect of policy initiatives and health system investments. Researchers could select outcome measures for use in clinical, health services and policy research in primary care. **Available measures:** Access: extent of (avoidable emergency department, walk-in clinic, urgent care center use; access	organizations throughout Ontario and Canada that HQO knew were doing relevant research or developing performance measurement frameworks for primary care. The Steering Committee for the Summit establish a set of criteria to shortlist a set of measurement priorities to consider. A worksheet of 60 potential measurement priorities and other background materials were distributed before the meeting. Meeting attendees held a discussion and then voted for their highest performance measurement priorities, keeping in mind the following question: What aspects of primary care performance would be the most valuable to measure on a regular basis to inform decision-making at the practice and system (community, regional, provincial) levels? The votes were tabulated to generate separate ranked lists of practice- and system-level measurement priorities. In Spring 2013, the organizations represented on the Steering Committee circulated a stakeholder survey to engage their members and solicit their views on the aspects of primary care performance that would be the most valuable to meas- ure. Over 850 people responded. Informed by the Summit and survey results, the Steering Committee finalized the overarching PCPM framework.

	duplication of diagnostic tests/imaging; implementation and meaningful use of electronic medical records/electronic health records; self-management support and collaboration with patients and families; patient wait times in office; extent of generic prescribing Effectiveness = management of chronic conditions including people with mental health and addictions and multiple chronic conditions; advance disease/palliative care; symptom management; negotiated care plan for patients with chronic conditions; shared clinical decision-making Focus on population health = preventive care for infants and children (beyond immunization); health and socio-demographic information about the population being served (including health status); immunization through the lifespan; screening and management of risk factors for cardiovascular disease and other chronic conditions (e.g., obesity, smoking, physical inactivity, diet, alcohol and substance abuse, sociodemographic characteristics, sexual and other high-risk behaviors); chronic disease screening (e.g., cancer, diabetes, hypertension, asthma, depression, dementia); prenatal care Safety = infection prevention and control; medication management, including medication reconciliation;		to a regular primary care provider; access to an interprofessional primary care teams; timely access at regular place of care; access to after-hours care (telephone and in-person); access to non face-to-face care (e.g., telephone, email, etc.); access to home visits for target population Integration: information sharing across the continuum of care including patients and family caregivers; care coordination with other health and community care providers and services; time to referred appointment with medical/surgical specialist or other specialized services; hospital admissions and readmissions; follow-up with regular primary care provider post hospital discharge; waiting time for community services Efficiency: per capita healthcare cost (primary care, specialist care, hospital care, diagnostics, pharmaceuticals, long-term care, community care); support for family caregivers; unnecessary duplication of diagnostic tests/imaging; implementation and meaningful use of electronic medical health records; self-management support and collaboration with patients and families; patient wait times in office Effectiveness: management of chronic conditions including people with mental health and addictions and multiple chronic conditions; advanced disease/palliative care;	**Source/Endorsements:** Yes Health Quality Ontario **Stakeholder engagement:** Yes Summit of primary care stakeholders, stakeholder survey helped identify system- and practice-level measurement priorities and related specific performance measures **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication this has been tested empirically

	recognition and management of adverse events including medical errors; injury prevention Patient-centeredness/person-centeredness = respect for patients' and families' values, culture, needs and goals; process to obtain patient/client and caregiver input regarding healthcare services; respectful and understandable communication with patients Appropriate resources = comprehensive scope of primary care practice; funds received by primary care practices (by category); human resources, availability, composition (skills mix) and optimized scope of practice; healthy work environment and safety; funding and use of electronic systems to link with other settings; practice improvement and planning; human resources training and professional development, including patient- and family-centered care; provider renumeration methods; total cost of care; availability of information technology systems; information technology investment and expenditure; provider satisfaction (employee engagement culture) Equity = cross-cutting domain assessed based on economic, demographic and social variables applied to performance measures in other domains		symptom management; negotiated care plan for patients with chronic conditions Focus on population health: preventive care for infants and children (beyond immunization); health and socio-demographic information about the population being served (including health status); immunization through the lifespan; screening and management of risk factors for cardiovascular disease and other chronic conditions (e.g., obesity, smoking, physical inactivity, diet, alcohol and substance abuse, socio-demographic characteristics, sexual and other high-risk behaviors); chronic disease screening (e.g., cancer, diabetes, hypertension, asthma, depression, dementia); prenatal care Safety: infection prevention and control; medication management, including medication reconciliation; recognition and management of adverse events including medical errors Patient-centeredness: respect for patients' and families' values, culture, needs and goals; process to obtain patient/client and caregiver input regarding healthcare services; respectful and understandable communication with patients; coordination of care within the primary care setting; process for addressing suggestions/complaints Appropriate resources: comprehensive scope of	

			primary care practice; funds received by primary care practices (by category); human resources availability, composition (skills mix) and optimized scope of practice; healthy work environment and safety; funding and use of electronic systems to link with other settings; practice improvement and planning; human resources training and professional development, including patient- and family-centered care	
Halfon, 2014[136] **Name:** 3.0 Transformation Framework US **Link:** https://www.healthaffairs.org/doi/10.1377/hlthaff.2014.0485?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed	**Type of care:** Quality of care **Setting:** Health system performance **Population:** US **Intended use:** To stimulate thinking and support the planning and development of the new roadmap for the next generation of the US health care system **Defined:** N/A	**Components and included domains:** Definition of health: creating capacities to achieve goals, satisfy needs, fortify reserves Goal of health system: optimize health Model of health and disease causation: life-course health development Primary focus of services: promote and optimize health of individuals and populations Organizational operational model: community-accountable health development systems Dominant payment mechanisms: health trusts and management of balanced portfolio of financing vehicles Role of health and health care provider/organization: to optimize health and well-being Role of individual and community: co-designers of health Objective: Population and community health outcomes; optimizing the health of	**Similarities:** Both frameworks address health system delivery. **Differences:** There no clear overlapping domains between the two frameworks, as the 3.0 Transformation Framework is more of a conceptual model of the health system, while the 2010 NASEM framework provides a model of how the health care delivery may be measured **Policy levers:** The 3.0 Transformation Framework portrays a sequential evolution of a complex health system, but it does not assume that change has been or will be inevitable or linear. The continuing metamorphosis of this complex system is in response to rapidly changing epidemiology, policy jolts such as the implementation of Medicare and Medicaid and the passage of the ACA, and to scientific breakthroughs and disruptive innovations that are altering medical practice. The 3.0 Transformation Framework	**Process development:** Not reported **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** No Suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Use and applied in national, state, and local settings

		populations over the life span and across generations Organization of services: Community-integrated health system; integrated health care networks partner with public health and community organizations to both reduce community health risk factors and provide coordinated illness care Care process: Integrated health, psychosocial services, and wellness care designed to optimize and maintain health and well-being across the life course Payment methodology: Recognize value with long-term time horizons and capture multisector financial impacts outside of health care cost; sustainable financing alternatives such as population-based global budgets; single budget for a broad scope of health care services, combined with incentives Health information technology: Health and medical information follows the person; there is connectivity between the health and human service systems; and actors have access to real-time data on quality, costs, and outcomes for individuals and populations Quality of care: High and continuously improving quality through a learning health system Population health improvement: Focused on health outcomes for geographically defined population, including upstream	will require supportive policies that incorporate longer time horizons, in ways that are similar to other sectors such as national defense, energy, and transformation. **Available measures:** N/A	

		socioeconomic and developmental correlates of health **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework; however, there is one domain "population health improvement: focused on health outcomes for geographically defined population, including upstream socioeconomic and developmental correla **Context:** The Center for Medicare and Medicaid Innovation (CMMI) needed to communicate the rationale for broad change to a diverse set of audiences, including providers, payers, policy makers, and the public, so the center's population health team adapted the 3.0 Transformation Framework to provide a context for the type of innovations it hoped to catalyze. Michigan State Innovation Model: Through its Michigan State Healthcare Innovation Plan, Michigan's State Innovation Model aspires to achieve 3.0 transformations by combining four health system elements: patient-centered medical homes, community-integrated Accountable Systems of Care, Community Health Innovation Regions, and a statewide health information exchange and performance-reporting infrastructure. Children in Delaware and Florida - Nemours: Nemours, a children's health system		

		operating in the Delaware Valley and Florida, expanded its focus in 2003 to encompass optimal health through a vision consistent with the 3.0 Transformation Framework model. To execute this strategy, Nemours Health and Prevention Services was established to work with all systems that care for children in promoting and optimizing their health. The Magnolia Community Initiative: The Magnolia Community Initiative near downtown Los Angeles is a prototype of a transformed system of health and human services in partnership with an engaged community. The Magnolia Community Initiative introduced design concepts and service delivery functions consistent with the 3.0 Transformation Framework. Instead of establishing a single, formal structure across the many sectors and organizations to direct the transformation, the partners cooperate to align the health and related services and supports that they provide. They focus on transformations that can scale, spread, and be sustained over time.		
Ham, 2015[137] NHS Group Department of Health, 2014[189] **Name:** N/A UK **Link:** https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/measuring-the-	**Type of care:** Quality of care Health system performance **Setting:** Population health and healthcare **Population:** UK population **Intended use:** To address health system performance and population health	**Components and included domains:** Page 38: Prevention Access Quality Health outcomes Figure 4: Preventing people from dying prematurely	**Similarities:** Both frameworks address health system delivery in some way, and include access, safety, effectiveness (health outcomes in the framework in this report), and types of care. **Differences:** The framework in this report includes patient	**Process development:** The overall review, which consisted of reporting on the framework, included a review by a small team at The King's Fund. It involved consultation with technical experts and stakeholders, within the limits of what was feasible in the timescale and the time of year it

performance-of-local-health-systems-dh-review-kingsfund-oct15.pdf	**Defined:** Page 38: Prevention= N/A Access = N/A Quality = N/A Health outcomes = N/A Figure 4: Preventing people from dying prematurely = potential years of life lost from causes considered amenable to healthcare: adults, children and young people Enhancing quality of life for people with long-term conditions = health-related quality of life for people with long-term conditions Helping people recover from episodes of ill health or following injury = emergency admissions for acute conditions that should not usually require hospital admission; emergency readmissions within 30 days of discharge from hospital Ensuring that people have a positive experience of care = patient experience of primary and hospital care (patient experience of GP out of hours service, patient experience of hospital care) Treating and caring for people in a safe environment and protecting them from avoidable harm = N/A	Enhancing quality of life for people with long-term conditions Helping people recover from episodes of ill health or following injury Ensuring that people have a positive experience of care Treating and caring for people in a safe environment and protecting them from avoidable harm **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	experience, while that is not explicitly addressed in the 2010 NASEM framework. This framework in this report includes enhancing quality of life for people with long-term conditions, helping people to recover from episodes of ill health or following injury, and ensuring that people have a positive experience of care, while the 2010 NASEM framework does not. **Policy levers:** Key policy priorities (Single Departmental Plan, NHS Mandate, NHS Constitution, Better Care Fund, and NHS five year forward view), and ongoing national work on indicator development in general were considered in the author's work on this report. Authors recommend that Intelligent transparency is a policy initiative that has the potential to support improvements in care and outcomes and to provide patients and the public with information about the performance of local health services. **Available measures:** Preventing people from dying prematurely: Potential years of life lost (PYLL) from causes considered amenable to healthcare: Adults, Children and young people; Life expectancy at 75: Males, Females; Neonatal mortality and stillbirths; Reducing premature mortality from the major causes of death: under 75 mortality rate	was undertaken. Authors also drew on current and historical policy and practice in the UK and internationally, and the published literature. **Source/Endorsements:** Yes King's Fund **Stakeholder engagement:** Yes Consultation with technical experts and stakeholders on emerging findings in workshops, including from members of clinical commissioning groups, professional societies, national bodies and patient groups; Health Foundation was asked to review indicators of general practice quality **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

			from CVD, under 75 mortality rate from respiratory disease, under 75 mortality rate from liver disease, under 75 mortality rate from cancer (one- and five-year survival from all cancers, one- and five-year survival from breast, lung, and colorectal cancer, one- and five-year survival from cancers diagnosed at stage 1&2; Reducing premature death in people with mental illness: excess under 75 mortality rate in adults with serious mental illness (excess under 75 mortality rate in adults with common mental illness, suicide and mortality from injury of undetermined intent among people with recent contact from NHS services; Reducing deaths in babies and young children: infant mortally (five-year survival from all cancers in children); Reducing premature death in people with a learning disability (excess under 60 mortally rate in adults with a learning disability) Enhancing quality of life for people with long-term conditions: health-related quality of life for people with long-term conditions; ensuring people feel supported to manage their condition (proportion of people feeling supported to manage their condition; improving functional ability in people with long-term conditions (employment of people with long-term conditions); reducing time spent in hospital by people with long-	

			term conditions (unplanned hospitalization for chronic ambulatory care sensitive conditions, unplanned hospitalization for asthma, diabetes, and epilepsy in under 19s); enhancing quality of life for carers (health-related quality of life for carers); enhancing quality of life for people with mental illness (employment of people with mental illness - health related quality of life for people with mental illness); enhancing quality of life for people with dementia (estimated diagnosis rate for people with dementia - a measure of effectiveness of post-diagnosis care in sustaining independence and improving quality of life); improving quality of life for people with multiple long-term conditions (health-related quality of life of people with three or more long-term conditions) Helping people to recover from episodes of ill health or following injury: emergency admissions for acute conditions that should not usually require hospital admission, emergency readmissions within 30 days of discharge from hospital; improving outcomes from planned treatments (total health gain as assessed by patients for elective procedures - physical health-related procedures, psychological therapies, recovery in quality of life for patients with mental illness); preventing lower respiratory	

			tract infections in children from becoming serious (emergency admissions for children with LRTI); improving recovery from injuries and trauma (survival from major trauma); improving recovery from stroke (proportion of stroke patients reporting an improvement in activity/lifestyle on the Modified Rankin Scale at 6 months); improving recovery from fragility fractures (proportion of patients with hip fractures recovering to their previous levels of mobility/walking ability at 30 and 120 days; helping older people to recover their independent after illness or injury (proportion of older people (65 and over) who were still at home 91 days after discharge from hospital into reablement/rehabilitation service, proportion offered rehabilitation following discharge from acute or community hospital; dental health (decaying teeth, tooth extractions in secondary care for children under 10) Ensuring that people have a positive experience of care: patient experience of primary care (GP services, GP out-of-hours services, NHS dental services), patient experience of hospital care, friends and family test, patient experience characterized as poor or worse (primary care, hospital care); improving people's experience of outpatient care (patient experience of outpatient services); improving hospitals' responsiveness to personal	

			needs (responsiveness to in-patients' personal needs); improving people's experience of accident and emergency services (patient experience of A&E services); improving access to primary care services (access to GP services and NHS dental services); improving women and their families' experience of maternity services (women's experience of maternity services); improving the experience of care for people at the end of their lives (bereaved carers' views on the quality of care in the last 3 months of life); improving the experience of healthcare for people with mental illness (patient experience of community mental health services); improving children and young people's experience of healthcare (children and young people's experience of inpatient services); improving people's experience of integrated care (people's experience of integrated care) Treating and caring for people in a safe environment and protecting them from avoidable harm: deaths attributable to problems in healthcare, severe harm attributable to problems in healthcare; reducing the incidence of avoidable harm (deaths from venous thromboembolism related events, incidence of healthcare associated infection (MRSA, C. difficile), proportion of patients with category 2, 3, and 4	

			pressure ulcers, hip fractures from falls during hospital care; improving the safety of maternity services (admission of full-term babies to neonatal care); improving the culture of safety reporting (patient safety incidents reported)	
Handler, 2001[138] **Name:** Conceptual framework for the public health system as a basis for measuring system performance US **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1446752/	**Type of care:** Other public health system performance **Setting:** Public health system performance **Population:** US population **Intended use:** To address measurement of the public health system performance **Defined:** Macro context = N/A Public health system = N/A Public health system mission and purpose = philosophy, goals, and "core functions" Structural capacity = information resources, organizational resources, physical resources, human resources, fiscal resources Processes = the 10 essential public health services Outcomes = effectiveness, efficiency, equity	**Components and included domains:** Macro context Public health system Public health system mission and purpose Structural capacity Processes Outcomes **Equity/disparities:** Equity is part of the outcomes component of the framework. **Context:** N/A	**Similarities:** Both frameworks include effectiveness, efficiency, and equity. **Differences:** This framework addresses the public health system performance, while the 2010 NASEM framework addresses healthcare delivery more specifically. **Policy levers:** This mission piece of the framework is conceptualized as being carried out through the performance of the core functions of assessment, policy development, and assurance. In terms of the outcomes, ideally, carrying out the system's planning and policy development processes generates interventions (outputs) intended to improve health status, the bottom line of the public health system. Overall, the framework will allow public health researchers, practitioners, and policymakers to more ef- fectively examine the relationship between the practice of public health and population outcomes and will contribute to the development of a science base for the public health system. **Available measures:** N/A	**Process development:** A conceptual framework for the public health system was developed on the basis of the work of Donabedian and a conceptual model previously developed by Bernard Turnock and Arden Handler. The framework proposed in this article was developed in conjunction with an expert panel as well as the Public Health Practice Program Office of the Centers for Disease Control and Prevention (CDC). **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** Yes The framework proposed in this article was developed in conjunction with an expert panel as well as the Public Health Practice Program Office of the Centers for Disease Control and Prevention (CDC) **Evidence-based:** No **Defined population:** No (target unclear) **Validity testing status:** Not tested No indication that this has been tested empirically

Health Consumer Powerhouse, 2018[139] **Name:** Euro Health Consumer Index Matrix 2018 Multiple countries **Link:** https://healthpowerhouse.com/media/EHCI-2018/EHCI-2018-index-matrix-A3-sheet.pdf	**Type of care:** Quality of care Healthcare performance **Setting:** Healthcare **Population:** European population **Intended use:** To help assess performance of national healthcare systems in 35 countries **Defined:** Patient rights and information = Pat. Org's involved in decision making; Right to second opinion; Access to own medical record; Registry of bona fide doctors; Web or 24/7 telephone HC info; Cross-border care seeking; Provider catalogue with quality ranking; Patient records e-accessible; Online booking appointments; E-prescriptions Accessibility (waiting times for treatment) = Family doctor same day access; Direct access to specialist; Major elective surgery <90 days; Cancer therapy <21 days; CT scan <7 days; Waiting time for pediatric psychiatry Outcomes = 30-day case fatality for AMI; 30-day case fatality for stroke; Infant deaths; Cancer survival; Deaths before 65 years old; MRSA infections; Abortion rates; Suicide rates; Diabetes patients with HbA1c >7 Range and reach of services provided = Equity of healthcare systems; Cataract operations per 100,000, 65+; Kidney transplants per million pop; Dental care incl, in public	**Components and included domains:** Patient rights and information Accessibility (waiting times for treatment) Outcomes Range and reach of services provided Prevention Pharmaceuticals **Equity/disparities:** Equity of healthcare systems is a domain of the framework. **Context:** Previous versions of this framework (2016 and 2017) have been used to assess healthcare performance in European countries.	**Similarities:** Both frameworks address healthcare delivery or health system performance, and include the components equity, access, timeliness, and types of care. **Differences:** The Euro Health Consumer Index framework includes equity as a component, while the 2010 NASEM framework includes equity as a cross-cutting dimension. The EHCI framework includes patient rights and informations, outcomes, range and reach of services provided, and pharmaceuticals, while the 2010 NASEM framework does not include these components. **Policy levers:** N/A **Available measures:** Patient rights and information: Pat. Org's involved in decision making; Right to second opinion; Access to own medical record; Registry of bona fide doctors; Web or 24/7 telephone HC info; Cross-border care seeking; Provider catalogue with quality ranking; Patient records e-accessible; Online booking appointments; E-prescriptions Accessibility (waiting times for treatment): Family doctor same day access; Direct access to specialist; Major elective surgery <90 days; Cancer therapy <21 days; CT scan <7 days; Waiting time for pediatric psychiatry Outcomes: 30-day case fatality for AMI; 30-day case fatality for stroke; Infant deaths; Cancer survival; Deaths before 65	**Process development:** Not reported **Source/Endorsements:** Yes Health Consumer Powerhouse **Stakeholder engagement:** No Suggested by author **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Previous versions of this framework (2016 and 2017) have been used

	healthcare; Informal payments to doctors; Long term care for the elderly; % of dialysis done outside of clinic; Caesarean sections Prevention = Infant 8-disease vaccination; Blood pressure; Smoking prevention; Alcohol; Physical activity; HPV vaccination; Traffic deaths Pharmaceuticals = Rx subsidy; Novel cancer drugs deployment rate; Access to new drugs (time to subsidy); Arthritis drugs; Statin use; Antibiotics/capita		years old; MRSA infections; Abortion rates; Suicide rates; Diabetes patients with HbA1c >7Range and reach of services provided: Equity of healthcare systems; Cataract operations per 100,000, 65+; Kidney transplants per million pop; Dental care incl, in public healthcare; Informal payments to doctors; Long term care for the elderly; % of dialysis done outside of clinic; Caesarean sections Prevention: Infant 8-disease vaccination; Blood pressure; Smoking prevention; Alcohol; Physical activity; HPV vaccination; Traffic deaths Pharmaceuticals: Rx subsidy; Novel cancer drugs deployment rate; Access to new drugs (time to subsidy); Arthritis drugs; Statin use; Antibiotics/capita	
Health Policy Institute of Ohio, 2004[140] **Name:** Health Disparities Framework US **Link:** http://www.healthpolicyohio.org/wp-content/uploads/2014/02/healthdisparities2005.pdf	**Type of care:** Disparities, equity, SDOH Disparities, appropriateness of care 1 dimension **Setting:** Ohio **Population:** Residents of Ohio **Intended use:** To better understand the complex causes of health disparities among racial and ethnic groups **Defined:** Health -- Before Care = income levels, poverty, and other social conditions; safety and adequacy of housing; employment status and type of employment; education levels; lifestyle choices--diet, exercise, tobacco and alcohol use; environmental conditions--air	**Components and included domains:** Health -- Before Care Access to Care Health Care Delivery **Equity/disparities:** The framework sets out to address and understand health disparities. **Context:** Evaluation of Disparities-Reduction Programs, minimum standards for cultural and linguistically competent health services, greater minority representation within the healthcare workforce, and more.	**Similarities:** Both frameworks address health care, effectiveness of care, access to care, and either equity or disparities. **Differences:** The Health Disparities Framework is centered on understanding health disparities, while the 2010 NASEM framework just has equity as part of the framework. Access to care is a significant domain of the Health Disparities Framework, but it is just a component of the 2010 NASEM framework. **Policy levers:** Policy solutions were offered after presenting the framework, to try to address the issue of health disparities,	**Process development:** N/A **Source/Endorsements:** Yes Health Policy Insititute of Ohio **Stakeholder engagement:** Unclear Not reported **Evidence-based:** No **Defined population:** Yes (framework target described in detail) Residents of Ohio **Validity testing status:** Tested Expanded access to services; establishment or enhancement of state offices of minority health; greater minority representation within the health care workforce

	and water quality, pesticide exposure, green space Access to Care = financial resources; availability and proximity of providers; access to transportation; insurance coverage; regular source of care; language barriers; legal barriers (e.g., eligibility restrictions, illegal immigrants); prior experience with the health care system; cultural preferences--care-seeking behaviors; health literacy levels; diversity of the health care workforce Health Care Delivery = insurance coverage and type; cultural competency levels; patient-provider communications; provider discrimination or bias; differential propensities for certain disease by racial/ethnic populations; patient preferences and adherence to treatment plans; diversity of the health care workforce; appropriateness of care; effectiveness of care; language barriers		as well as the challenges associated with each. **Available measures:** N/A	
Health Resources and Services Administration, 2020[141] **Name:** Advancing Health Center Excellence Framework US **Link:** https://bphc.hrsa.gov/sites/default/files/bphc/funding/hce-fact-sheet.pdf	**Type of care:** Disparities, equity, SDOH Equity, care quality 1 component **Setting:** Health Centers **Population:** Health Centers and their patients **Intended use:** To promote Health Center Program grantee excellence in seven key domain areas, which align with HRSA's mission "to improve health outcomes and address health disparities through access to	**Components and included domains:** Governance and Management; Workforce; Financial Sustainability; Population Health and SDOH; Quality, Patient Care, and Safety; Patient Experience; Access and Affordability **Equity/disparities:** Health equity is at the center of the framework and is affected by the seven key domains of the framework.	**Similarities:** Both frameworks considers access to care, timeliness, care coordination, patient-centeredness, safety, and equity. **Differences:** The HRSA framework considers a broader domains such as governance and leadership, and financial sustainability, while the 2010 NASEM framework is more narrowly centered on health care. The HRSA framework centers around health equity.	**Process development:** N/A **Source/Endorsements:** Yes Health Resources and Services Administration **Stakeholder engagement:** Unclear **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested See notes in context field above

	quality services, a skilled health workforce, and innovative, high- **Defined:** Governance and Management = governance; leadership; management Workforce = strategic workforce management; recruitment; employee development; employee engagement; retention Financial Sustainability = liquidity; solvency; sufficient profitability; financial agility Population Health and SDOH = population needs assessment and management; community needs and resource mapping; resource allocation; community partnerships and collaborations; track and close social service referral loops Quality, Patient Care, and Safety = clinical effectiveness; continuity of care; safety; equity Patient Experience = patient activation and engagement; partnership with families and caregivers; building trusting relationships; patient-centered care coordination Access and Affordability = comprehensive and timely services; affordability; enabling services; community outreach	**Context:** Implement health center strategic plan and reports on progress to the board; conduct employee engagement surveys to identify staff needs in the areas of professional fulfillment, burnout, productivity, stress, well-being, diversity, and inclusion; maintain sufficient profitability to support, maintain, and enhance operations of programs and services; provide high-quality, safe, and effective care to members of the community, specifically minority and underserved populations; and many more	**Policy levers:** One of the framework components was governance and management, which includes being responsible for managing and implementing policies and plans set by the board. The component financial sustainability is defined as a health center having planning policies and practices, among other things. **Available measures:** Each Advancing Health Center Excellence domain has a maturity model to characterize the measures and activities representing health center capabilities and development. A health center can perform at different levels of maturity across different domains. The maturity levels provide benchmarks (through measures or activities) for evaluating the current capability level of a health center's practices and outcomes. These domain maturity models serve as a basis for setting performance improvement goals and provide context for achieving those goals. There are four levels of health center maturity that characterize a continuum of performance for each domain, with leadership as highest performance level The levels progress in maturity from compliance-driven, fundamental, strategic, to leading. Each maturity level builds on the success of the previous level by adding a new	

			functionality, an increase in capability, or an additional strategic integration. Level 4: Leading: Health center employs leading practices in the domain, fully integrating the domain area into the health center strategy. Level 3: Strategic: Domain area proactively managed and aligned with the health center strategy. Level 2: Fundamental: Domain area tactically managed and health center strategy is partially or fully defined. Level 1: Compliance-driven: Health center is compliant with all relevant program requirements to the domain area.	
Healthy People 2030, 2022[142] **Name:** Social Determinants of Health US **Link:** https://health.gov/healthypeople/priority-areas/social-determinants-health	**Type of care:** Disparities, equity, SDOH SDOH, care quality 1 domain **Setting:** Public health **Population:** U.S. population **Intended use:** To address SDOH **Defined:** Economic stability = help people earn steady incomes that allow them to meet their health needs Education access and quality = increase educational opportunities and help children and adolescents do well in school Healthcare access and quality = increase access to comprehensive, high-quality health care services Neighborhood and built environment = create neighborhoods and environments that promote health and safety	**Components and included domains:** Economic stability Education access and quality Healthcare access and quality Neighborhood and built environment Social and community context **Equity/disparities:** SDOH have a major impact on people's health, well-being, and quality of life. SDOH contributes to wide health disparities and inequities. Just promoting healthy choices won't eliminate these and other health disparities. Instead, public health organizatio **Context:** N/A	**Similarities:** Both frameworks considers healthcare and healthcare access in some way. **Differences:** The SDOH framework addresses SDOH and includes healthcare as a domain, while the 2010 NASEM framework addresses healthcare delivery. There is not much overlap between the components of both frameworks. **Policy levers:** N/A **Available measures:** N/A	**Process development:** N/A **Source/Endorsements:** Yes Healthy People 2030 **Stakeholder engagement:** Yes The Social Determinants of Health Workgroup made up of subject matter experts with different backgrounds and areas of expertise developed objectives. **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Unclear Not reported

	Social and community context = increase social and community support			
HHS, 2022[227] **Name:** Social Determinants of Health Ecosystem US **Link:** https://aspe.hhs.gov/sites/default/files/documents/aabf48cbd391be21e5186eeae728ccd7/SDOH-Action-Plan-At-a-Glance.pdf	**Type of care:** Disparities, equity, SDOH SDOH, care quality 1 domain **Setting:** Government, community-based organizations, health care providers, health plans, and other private sector partners **Population:** General public **Intended use:** Address SDOH **Defined:** Objectives = improve community conditions, address individuals' social needs, address individuals' healthcare needs, address structural racism, coordination across sectors to promote health equity and achieve holistic care Approaches = whole-of-government, cross-sector, community driven activities Health and Human Services Integration = improve access, equitable delivery, referral networks Upstream = public health and prevention, multi-sector private public partners Midstream = human services Downstream = healthcare	**Components and included domains:** Objectives Approaches Health and Human Services Integration Upstream Midstream Downstream **Equity/disparities:** The goal is to promote health equity and achieve holistic care using coordination across sectors illustrated in the framework. **Context:** N/A	**Similarities:** Both frameworks consider equity and access. **Differences:** The framework by HHS addresses SDOH and includes healthcare, while the 2010 NASEM framework addresses healthcare delivery. The SDOH framework considers many sectors including government, public health, private and other public sectors, and the NASEM framework only focuses on healthcare. **Policy levers:** N/A **Available measures:** N/A	**Process development:** N/A **Source/Endorsements:** Yes HHS **Stakeholder engagement:** No Model suggested by HHS **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically
Hill, 2015[143] **Name:** National Institute on Agining Health Disparities Research Framework US **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4671408/	**Type of care:** Disparities, equity, SDOH Disparities, health care quality 1 component **Setting:** Research **Population:** Aging population **Intended use:** Provides a landscape for stimulating multidisciplinary approaches, evaluating research productivity	**Components and included domains:** Key levels of analysis/domains: environmental, sociocultural, behavioral, biological Fundamental factors: ethnicity, gender, age, race, disability status, identity (sexual and gender minorities)	**Similarities:** Both frameworks addresses equity/disparities, access to care, **Differences:** The NIA Health Disparities Research framework contains different levels of analysis while the 2010 NASEM framework does not. The NIA framework contains specific descriptions of the components	**Process development:** The framework was developed through an iterative process by the authors with feedback from the Task Force on Minority Aging Research. **Source/Endorsements:** Yes National Institute on Aging

	and identifying opportunities for health disparities research related to aging that may ultimately achieve health equity. Aids in efforts to ameliorate or **Defined:** Environmental factors=geographical and political, socioeconomic, health care Sociocultural factors=cultural, social, psychological Behavioral factors=coping, psychosocial risk/resilience, health Biological factors=physiological indicators, genetic stability, cellular function and communication	**Equity/disparities:** The fundamental factors of the framework are ethnicity, gender, age, race, disability status, and sexual and gender minorities. **Context:** Many research awards have been granted using this framework as a guide.	of the framework (2010 NASEM framework does not). The NIA framework covers a wide range of factors that can affect healthcare delivery, while the 2010 NASEM framework focuses on more general factors such as effectiveness, efficiency, timeliness, safety. **Policy levers:** N/A **Available measures:** N/A	**Stakeholder engagement:** Yes Task Force on Minority Aging Research **Evidence-based:** No **Defined population:** Yes (framework target described in detail) The aging population, with a focus on addressing disparities **Validity testing status:** Tested NIA has awarded over $100 million in research awards since 2015 using the NIA health disparities research framework as a guide.
Hulton, 2016[144] **Name:** N/A Other **Link:** https://obgyn.onlinelibrary.wiley.com/doi/10.1016/j.ijgo.2015.11.005	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Nigeria **Intended use:** Monitoring aspects of quality of healthcare **Defined:** Provision of care: Human resources = MNH services are provided by skilled, regulated, and motivated healthcare providers that are recruited, supported, managed, and retained in appropriate numbers and mix. Infrastructure = Facilities are effectively designed, built, cleaned, and maintained to provide quality, cost-effective MNCH care and are responsive to need and provide a safe, supportive, and functional environment. Equipment, supplies and medicine = MNCH services have a reliable and responsive supply of appropriate	**Components and included domains:** Provision of care: human resources; infrastructure; equipment, supplies and medicine; clinical practice; evidence and information; referral and networks of care Experience of care: human resources; infrastructure; equipment, supplies and medicine; respect, cognition and equity; evidence and information; referral and networks of care **Equity/disparities:** Equity is a component of the framework. **Context:** N/A	**Similarities:** Both frameworks include equity, human resources and infrastructure, and coordination of care/continuity of care. **Differences:** The Nigerian framework includes numerous other components such as evidence and information that is not included in the 2010 NASEM framework. **Policy levers:** N/A **Available measures:** N/A	**Process development:** The framework was adapted from the original framework by Hulton et al. 2000. **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** No Suggested by authors **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to a case study in Northern Nigeria

	equipment, supplies, and essential medicines that are properly stored, maintained, and used by trained and skilled staff, to ensure the provision of quality MNCH care. Clinical practice = MNCH care is provided in accordance with internationally recognized, evidence-based good practice for improving MNCH outcomes. respect, cognition, and equity = Information on health services and options available are explained to clients in a way that they understand. Providers treat all clients with respect and dignity regardless of their socioeconomic or cultural status. Networks of care and integration = All points on the MNCH continuum of care are connected so that referral is effective and timely, and service providers communicate with each other between services and between levels of care. This will ensure optimal recognition, management, referral and follow-up of routine conditions, complications, and emergencies. Evidence and information = MNCH services have information systems providing reliable, timely, and easily accessible data and information. Healthcare planners, managers, and healthcare professionals can use this information to make evidence-based and timely decisions for strengthening quality of MNCH care.			

	Experience of care: Human resources = Women and families express confidence in the level of human resources available for the care of themselves and/or their family members in terms of competency, number, and gender of staff. Infrastructure = Women and families express confidence in the level of physical resources available for the care of themselves and/or their family members in terms of physical infrastructure and the health facility environment. Equipment, supplies, and medicine = Women and families report no shortages of equipment, drugs, and supplies that, from their perspective, influenced the quality of care they received. Clinical practice = N/A Respect, cognition, and equity = Women and families, regardless of education, economic status, place of residence, or other sociocultural factors, report feeling well informed, emotionally supported, and receive culturally sensitive, respectful care from all levels of health staff. Networks of care and integration = Women and their families understand where they should go and why. Evidence and information = MNCH managers have information systems providing reliable, timely, and easily accessible data and information. Communities and			

	clients can access and use this information to better manage their health, monitor how their local health services are performing, and hold the health system accountable to providing quality care			
Hurst, 2001[145] **Name:** N/A Multiple countries **Link:** https://www.oecd-ilibrary.org/docserver/788224073713.pdf?expires=1712241406&id=id&accname=guest&checksum=5B6FDCC69A4D337471FFD4B2C2E32ADA	**Type of care:** Quality of care **Setting:** Health systems **Population:** OECD member countries **Intended use:** To assess health system performance **Defined:** Health outcome indicators = N/A Responsiveness indicators = N/A Equity indicators = equity of health outcomes, equity of access, equity of finance Efficiency indicators = macroeconomic efficiency, overall micro efficiency	**Components and included domains:** Health outcome indicators Responsiveness indicators Equity indicators Efficiency indicators **Equity/disparities:** Equity is one of the components of the framework. **Context:** Not reported	**Similarities:** Both frameworks address the healthcare system, and include the components equity and efficiency. **Differences:** The OECD proposed framework includes health outcome indicators and responsiveness indicators, and two types of efficiency are include (macro and micro), as well as specific types of equity, including equity of finance, which are not in the 2010 NASEM framework. **Policy levers:** The article was a social policy occasional paper, and part of the research includeded the development of the proposed framework considered health policy makers. **Available measures:** Most frequently-used health outcome indicators: avoidable mortality by selected conditions; infant mortality; perinatal mortality; low birthweight; incidence of infectious disease; avoidable hospitalizations by selected conditions; survival rates from cancer; survival rates from cancer; survival rates from dialysis and transplants; inhospital mortality due to AMI; 30-day preoperative mortality data; 28-day emergency readmission rates; vaccination	**Process development:** Not reported **Source/Endorsements:** Yes OECD **Stakeholder engagement:** No Model suggested by OECD **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically

			rates; breast/cervical cancer screening Most frequently-used responsiveness indicators: patient satisfaction or acceptability; patient-rated dignity of treatment; patient-rated autonomy and confidentiality; patient-rated promptness of attention; patient-rated quality of basic amenities; patient-rated access to support networks during care; patient-rated choice of care provider; patient experience (continuity; physician/patient communication; provision of information; waiting times; privacy; cancelled operations; delayed discharge	
Hurtado, 2001[5] **Name:** National Health Care Quality Framework US **Link:** https://nap.nationalacademies.org/catalog/10073/envisioning-the-national-health-care-quality-report	**Type of care:** Quality of care **Setting:** Healthcare **Population:** U.S. **Intended use:** To assess whether the health care delivery system is making progress in achieving the purpose to to continuously reduce the burden of illness, injury, and disability, and to improve the health and functioning of the people of the United States **Defined:** Safety = avoiding injuries or harm to patients from care that is intended to help them Effectiveness = "providing services based on scientific knowledge to all who could benefit, and refraining from providing services to those not likely to benefit (avoiding overuse and underuse)"	**Components and included domains:** Safety Effectiveness Patient centeredness Timeliness Staying healthy Getting better Living with illness or disability Coping with end-of-life Equity **Equity/disparities:** Equity is a cross-cutting dimension of the framework. **Context:** N/A	**Similarities:** Both frameworks addresses health care, and include the components safety, effectiveness, patient-centeredness, and timeliness. **Differences:** The NHCQ framework includes consumer perspectives on health care needs, such as staying healthy, getting better, living with illness or disability, and coping with the end-of-life, while the 2010 NASEM framework does not. **Policy levers:** Authors note that a framework is a way of making explicit the aspects of healthcare that should be measured in order to assess quality and define policy accordingly. The framework can be used to encourage measurement and reporting in specific areas to inform national and state policy makers,	**Process development:** N/A **Source/Endorsements:** Yes National Academy of Sciences, National Academy of Engineering, Institute of Medicine, National Research Council **Stakeholder engagement:** Unclear Not reported **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically

	Patient centeredness = health care that establishes a partnership among practitioners, patients, and their families (when appropriate) to ensure that decisions respect patients' wants, needs, and preferences and that patients have the education and support they need to make decisions and participate in their own care Timeliness = obtaining needed care and minimizing unnecessary delays in getting that care Staying healthy = getting help to avoid illness and remain well Getting better = getting help to recover from an illness or injury Living with illness or disability = getting help with managing an ongoing, chronic condition or dealing with a disability that affects function Coping with end-of-life = getting help to deal with a terminal illness Equity = providing care that does not vary in quality because of personal characteristics such as gender, ethnicity, geographic location, and socioeconomic status		purchasers, providers, and other specialized audiences. The framework can be used to guide policy and to inform relevant audiences. **Available measures:** N/A	
Indian Health Service, 2019[146] **Name:** National Accountability Dashboard for Quality US **Link:** https://www.ihs.gov/newsroom/factsheets/nationalqualityaccountability/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** American Indians and Alaska Natives **Intended use:** Highlight key domains of quality of healthcare systems **Defined:** N/A	**Components and included domains:** Quality (efficient, effective, and equitable) Accreditation Workforce Patient-centered care Safety Timely care **Equity/disparities:** Equity is a domain of quality in the framework.	**Similarities:** Both frameworks address healthcare, and includes equity, effectiveness, efficiency, patient-centeredness, safety, and timeliness. Both frameworks include health system infrastructure capabilities (workforce) in some way. **Differences:** The National Accountability Dashboard for	**Process development:** The NAD-Q is the result of a collaborative process that reflects input from a diverse group of subject matter experts from across IHS in the areas of clinical and public health care, quality improvement, and health informatics. **Source/Endorsements:** Yes Indian Health Service

		Context: N/A	Quality (NAD-Q) addresses the American Indian and Alaska Native population while the 2010 NASEM framework doesn't address a specific population by race/ethnicity. The NAD-Q includes the component quality and accreditation, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** Goal 1 Access: Objective (Obj.).1.1: Recruit, develop, and retain a dedicated, competent, and caring workforce (Participation in the Federal Employee Viewpoint Survey) Obj. 1.3: Increase access to quality health care services (Facilities with an Emergency Preparedness Plan; Facilities Reporting on Access to Care in the Emergency Department; Facilities with an Opioid Prescribing Policy) Goal 2 Quality: Obj. 2.1: Create quality improvement capability at all levels of the organization. (Hospital & Ambulatory Accreditation; Patient Centered Medical Home Designation; Ambulatory facilities with a Quality Improvement program; Facilities Improving Safety) Goal 3 Management & Operations: Obj. 3.2: Secure and effectively manage the assets and resources (Employee Influenza Vaccination)	**Stakeholder engagement:** Yes The framework is the result of a collaborative process that reflects input from a diverse group of subject matter experts from across IHS in the areas of clinical and public health care, quality improvement, and health informatics. **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

Institute for Healthcare Improvement, 2016[160] **Name:** Framework for Improving Health Equity Multiple countries **Link:** https://pubmed.ncbi.nlm.nih.gov/27319115/	**Type of care:** Disparities, equity, SDOH Equity **Setting:** Healthcare organizations **Population:** International **Intended use:** To guide healthcare organizations on ways they can directly impact health equity in their communities **Defined:** Make health equity a strategic priority = Healthcare leaders must be explicit that improving health equity is an organizational priority, both to support resource allocation and as a signal that the organization is serious about reducing health disparities Establish a governance structure and processes around health equity and provide resources to support health equity initiatives Deploy specific strategies to address multiple determinants of health on which care organizations can have a direct impact Socioeconomic status = recruit, retain and develop all clinical and nonclinical staff to help ensure meaningful contributions at all levels toward health equity, build facilities in underserved communities, etc. Physical environment = make healthcare investments that go beyond community benefit and are allocated back into the community; Create and fund community spaces, parks and walking trails, etc.	**Components and included domains:** Make health equity a strategic priority Establish a governance structure and processes around health equity and provide resources to support health equity initiatives Deploy specific strategies to address multiple determinants of health on which care organizations can have a direct impact Socioeconomic status Physical environment Healthy behaviors Healthcare services **Equity/disparities:** The framework was developed to specifically address equity and disparities. **Context:** N/A	**Similarities:** Both frameworks address equity, access, and health systems infrastructure. **Differences:** The IHI framework explicitly includes SDOH, disparities, and patient experience in the framework, while the NHQDR does not necessarily do explicitly do so. The NHQDR addresses health care quality more so, while the IHI addresses health equity and disparities. **Policy levers:** N/A **Available measures:** N/A	**Process development:** Not reported **Source/Endorsements:** Yes Institute for Healthcare Improvement **Stakeholder engagement:** No Model suggested by author **Evidence-based:** No **Defined population:** Yes (framework target described in detail) Populations affected by disparities **Validity testing status:** Not tested No indication that this has been tested

	Healthy behaviors = develop community partnerships for healthy activities; create and sponsor health ambassadors who are community members trained as out- reach workers to promote healthy behaviors, etc. Healthcare services = provide accessible primary care that is focused on meeting the needs of the underserved; train all staff on structural racism to raise consciousness and ensure workforce diversity is taken into consideration when hiring staff, etc.			
Institute of Medicine, 1993[149] **Name:** Model of access to personal health care services US **Link:** https://www.ncbi.nlm.nih.gov/pubmed/25144064	**Type of care:** Other Access, quality of providers 1 aspect **Setting:** US health care **Population:** Population **Intended use:** Supporting a set of indicators for monitoring access to personal health care services at the national level over time **Defined:** Access = the timely use of personal health services to achieve the best possible health outcomes.	**Components and included domains:** Barriers (structural, financial, prersonal) Use of services (visits, procedures) Mediators (appropriateness, efficacy of treatment, quality of providers, patient adherence) Outcomes (health status, equity of services) **Equity/disparities:** As barriers and as part of outcomes (equity of services) **Context:** N/A	**Similarities:** The framework aims to support monitoring access to personal health care services at the national level over time. **Differences:** The framework depicts access and its components while the NASEM framwork lists access as only one of many quality of care domains. **Policy levers:** There are implications for access indicators in healthcare policy. A major reason to disaggregate access indicators is to be able to track subgroups of policy interest, such as racial and ethnic groups, the uninsured, and the poor. **Available measures:** Barriers (structural): availability; how organized; transportation Barriers (financial): insurance coverage; reimbursement levels; public support	**Process development:** A committee of content experts developed the framework. **Source/Endorsements:** Yes IOM **Stakeholder engagement:** Yes part of committee **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested

			Barriers (personal): acceptability; cultural; language; attitudes; education/income Use of services: visits; procedures Mediators: appropriateness; efficacy of treatment; quality of providers; patient adherence Outcomes (health status): mortality; morbidity; well-being; functioning Outcomes: equity of services	
Institute of Medicine, 2003[148] **Name:** N/A US **Link:** https://www.ncbi.nlm.nih.gov/books/NBK221290/#ddd00015	**Type of care:** Quality of care **Setting:** Healthcare **Population:** U.S. population **Intended use:** To highlight the priority areas of various areas of healthcare **Defined:** N/A	**Components and included domains:** Cross-cutting systems interventions Living with illness/disability: chronic care Getting better: acute care Coping with end of life care: palliative care Staying healthy: preventive care **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks address healthcare delivery, and include types of care and care coordination (cross-cutting systems interventions). **Differences:** The IOM framework mainly addresses types of care, while the 2010 NASEM framework addresses health system delivery more broadly to include other components. **Policy levers:** N/A **Available measures:** N/A	**Process development:** Not reported **Source/Endorsements:** Yes Institute of Medicine **Stakeholder engagement:** No Suggested by authors **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically
Institute of Medicine, 2005[147] **Name:** N/A US **Link:** https://nap.nationalacademies.org/read/11517/chapter/1#ii	**Type of care:** Quality of care **Setting:** Healthcare **Population:** US population **Intended use:** To address priority areas for performance measure development **Defined:** Ambulatory care = Ambulatory care Quality Alliance; Ambulatory Care Survey (CAHPS Clinician and Group Survey: getting care quickly, getting needed care, how well providers communicate, health promotion and eduction, shared decision making, knowledge of medical	**Components and included domains:** Ambulatory care Acute care Health plans and accountable health organizations Long-term care End-stage renal disease Longitudinal measures of outcomes and efficiency Comprehensive measurement: Extend quality domains through the development of new measures; Efficiency; Equity; Patient-centeredness Longitudinal measurement: Expand a longitudinal perspective to encompass other care settings and clinical	**Similarities:** Both frameworks address health system delivery or performance, and include equity, access, effectiveness, efficiency, timeliness, patient-/family-centeredness, types of care, care coordination, continuity of care, and health systems infrastructure capabil **Differences:** Equity is a cross-cutting dimension in the 2010 NASEM framework, while it is just a component of the IOM framework. The IOM framework includes patient experience, while the 2010 NASEM framework does not do so	**Process development:** N/A **Source/Endorsements:** Yes Institute of Medicine **Stakeholder engagement:** No Suggested by authors and team **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

	history, how well office staff communicate) Acute care = Hospital Quality Alliance; Structural Measures (computerized provider order entry, intensive care unit intensivists, evidence-based hospital referrals); Hospital CAHPS (patient communication with physicians, patient communication with nurses, responsiveness of hospital staff, cleanliness/noise level of physical environment, pain control, communications about medicines, discharge information) Health plans and accountable health organizations = Health Plan Employer Data and Information Set (integrated delivery systems (health maintenance organizations): effectiveness, access/availability of care, satisfaction with experience of care, health plan stability, use of service, cost of care, informed health care choices, health plan descriptive information; Preferred provider organizations within Medicare Advantage: selected administrative data and hybrid measures) Long-term care = Minimum Data Set (long-term care, short-stay care); Outcome and Assessment Information Set (ambulation/locomotion, transferring, toileting, pain, bathing, management of oral medications, acute care hospitalization, emergent care, confusion)	conditions; Longitudinal experiences of care; Outcomes and efficiency of care Patient-level, population-level, and systems-level measurement: Develop measures and approaches to measurement that support decision making by leaders at the physician group, hospital, and community levels; Systems-level measures Shared accountability: Develop measures and methods that cost shared accountability; This is a cross-cutting approach that will be fostered by measures in the above six areas **Equity/disparities:** Equity is a component of the framework. **Context:** N/A	explicitly. The IOM framework includes comprehensive measurement; patient-level, population-level, and systems-level measurement; shared accountability; health plans and accountable health organizations; and end-stage renal disease, while the 2010 NASEM framework does not. **Policy levers:** By measuring and tacking systems-level performance at the community level, it may ultimately be possible to assess the national consequences of policy and financing environments as a whole. **Available measures:** There is a very wide range of measures provided by the IOM.	

	End-stage renal disease = National Healthcare Quality Report (transplant registry and results, dialysis effectiveness, mortality) Longitudinal measures of outcomes and efficiency = 1-year mortality results, resource use, and functional status after acute myocardial infarction Comprehensive measurement: Extend quality domains through the development of new measures; Efficiency; Equity; Patient-centeredness Longitudinal measurement: Expand a longitudinal perspective to encompass other care settings and clinical conditions; Longitudinal experiences of care; Outcomes and efficiency of care Patient-level, population-level, and systems-level measurement: Develop measures and approaches to measurement that support decision making by leaders at the physician group, hospital, and community levels; Systems-level measures Shared accountability: Develop measures and methods that cost shared accountability; This is a cross-cutting approach that will be fostered by measures in the above six areas			
Institute of Medicine, 2010[7] **Name:** Conceptual framework for categorizing health care quality and disparities measurement US	**Type of care:** Quality of care **Setting:** Healthcare **Population:** U.S. population **Intended use:** To serve as a conceptual framework for	**Components and included domains:** Crosscutting dimensions: Equity Value Components of quality care: Effectiveness Safety	**Similarities:** The framework is the same. **Differences:** There are no differences (they are the same framework). **Policy levers:** AHRQ and IOM intended to use the update to	**Process development:** N/A **Source/Endorsements:** Yes IOM, AHRQ **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** Unclear

Link: https://www.ncbi.nlm.nih.gov/books/NBK220171/	categorizing healthcare quality and disparities measurement **Defined:** Equity = N/A Value = N/A Effectiveness = N/A Safety = Improve the safety and reliability of the U.S. health care system Timeliness = N/A Patient-/family-centeredness = N/A Access = Ensure that care is accessible and affordable for all segments of the U.S. population Efficiency = N/A Preventive care = N/A Acute treatment = N/A Chronic condition management = N/A Care coordination = Ensure patients receive well-coordinated care within and across all health care organizations, settings, and levels of care Health systems infrastructure capabilities = Improve the foundation of health care systems (including infrastructure for data and quality improvement; communication across settings for coordination of care; and workforce capacity and distribution among other elements) to support high-quality care	Timeliness Patient-/family-centeredness Access Efficiency Types of care: Preventive care Acute treatment Chronic condition management Care coordination Health systems infrastructure capabilities **Equity/disparities:** Equity is a crosscutting dimension of the framework. **Context:** An earlier version of this framework addressed healthcare delivery in the U.S., for the NHQR/NHDR.	the framework to help drive national and local action for improving health, value, and equity in U.S. healthcare delivery. **Available measures:** N/A	**Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this model has been tested empirically
ISO, 2003[151] **Name:** Health indicators conceptual framework Multiple countries **Link:** https://groups.oasis-open.org/higherlogic/ws/public/d	**Type of care:** Other Population health, quality part of model **Setting:** Public health **Population:** World population	**Components and included domains:** Health status (well-being, health conditions, human function, deaths) Non-medical determinants of health (health behaviors, social and community factors,	**Similarities:** Both frameworks include efficiency, safety, effectiveness, access, equity, health system infrastructure utilization. **Differences:** The framework by WHO includes a health status	**Process development:** N/A **Source/Endorsements:** Yes International Organization for Standardization

ownload/21734/Health%20Indicators.pdf/latest	**Intended use:** To help measure and monitor the performance of health care systems **Defined:** Well-being = significant others, nutrition, economics, satisfaction, comfort, happiness, self-esteem Health conditions = diagnosis, manifestations, site, etiology Human function = disability, impairment, functional status, related diagnosis Deaths = immediate cause, acute conditions, chronic conditions, age, sex, expected life span Health behaviors = BMI, tobacco use, EtOH use, seat belts, caffeine use, exercise, firearm safety, fire safety Social and community factors = emphasis on healthcare, emphasis on disease prevention, social support for the patient, school readiness, cost of housing, literacy written, literacy spoken Environmental factors = water purity, distance to a healthcare facility, handling of sewage, fuels, regulations regarding the environment Genetic factors = genetic fingerprint, proteomic fingerprint, post-transcriptional modification of proteins, phenotypic groupings, rates of inheritable disorders, associated disorder Socio-economic factors = economic status, employment status, employment availability, education level, education	environmental factors, genetic factors, socio-economic factors) Health system performance (acceptability, appropriateness, competence, continuity, efficiency, safety, effectiveness, security, communication, accessibility) Community and health system characteristics (resources, population, health system) **Equity/disparities:** Equity spans across all dimensions (e.g., health status) of the framework, and can apply to any of the concepts or indicators contained therein. **Context:** N/A	dimension (including well-being, health conditions, human function and deaths), a non-medical determinants of health dimension (including health behaviors, social and community factors, environmental factors, genetic factors, and socio-economic factors), and a community and health system characteristics dimension (including resources and population) that is not in the 2010 NASEM framework. The framework by WHO addresses overall health and other factors that impact it and healthcare while the 2010 NASEM framework addresses healthcare delivery only. **Policy levers:** N/A **Available measures:** Well-being: significant others, nutrition, economics, satisfaction, comfort, happiness, self-esteem Health conditions: diagnosis, manifestations, site, etiology Human function: disability, impairment, functional status, related diagnosis Deaths: mmediate cause, acute conditions, chronic conditions, age, sex, expected life span Health behaviors: BMI, tobacco use, EtOH use, seat belts, caffeine use, exercise, firearm safety, fire safety Social and community factors: emphasis on healthcare, emphasis on disease prevention, social support for the patient, school readiness, cost of housing, literacy written, literacy spoken Environmental factors: water	**Stakeholder engagement:** No Model suggested by organization **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically

	utilization, social class, profession, net worth Acceptability = satisfaction scale, value Appropriateness = practice, measure, value Competence = practice, measure, value Continuity = practice type, measure, context, value Efficiency = practice measure, value, cost Safety = practice, condition, harm, risk of harm, level of harm Effectiveness = recurrence, survival rate, admission rate Security = confidentiality, authentication, authorization, non-repudiation Communication = timely, accurate, sufficient, pertinent, interpretable Accessibility = diagnosis, age, race, sex, culture, religion, country of origin, location, economic factors, insurance Resources = type, level of funding, source of funding, level of expenditure on training, level of expenditure on research, number of units, cost per unit Population = density of physicians, specialty, location, average salary, salary range (95% confidence interval), cost of care Health system = type of utilization of services, level of utilization of services, type of accreditation, level of accreditation, duration of accreditation, stability of health care services Equity		purity, distance to a healthcare facility, handling of sewage, fuels, regulations regarding the environment Genetic factors: genetic fingerprint, proteomic fingerprint, post-transcriptional modification of proteins, phenotypic groupings, rates of inheritable disorders, associated disorder Socio-economic factors: economic status, employment status, employment availability, education level, education utilization, social class, profession, net worth Acceptability: satisfaction scale, value Appropriateness: practice, measure, value Competence: practice, measure, value Continuity: practice type, measure, context, value Efficiency: practice measure, value, cost Safety: practice, condition, harm, risk of harm, level of harm Effectiveness: recurrence, survival rate, admission rate Security: confidentiality, authentication, authorization, non-repudiation Communication: timely, accurate, sufficient, pertinent, interpretable Accessibility: diagnosis, age, race, sex, culture, religion, country of origin, location, economic factors, insurance Resources: type, level of funding, source of funding, level of expenditure on training, level of expenditure on research, number of units, cost per unit Population: density of physicians, specialty, location, average salary, salary range	

			(95% confidence interval), cost of care Health system: type of utilization of services, level of utilization of services, type of accreditation, level of accreditation, duration of accreditation, stability of health care services Equity	
Jacobs, 2023[152] **Name:** N/A US **Link:** https://pubmed.ncbi.nlm.nih.gov/36724323/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** US population **Intended use:** To focus providers' attention on measures that are meaningful for the health of broad segments of the population; reduce provider burden by streamlining and aligning measures; advance equity with the use of measures that will help CMS recognize and track **Defined:** Adult: Wellness and prevention = colorectal cancer screening; breast cancer screening; adult immunization status Chronic conditions = controlling high blood pressure; hemoglobin A1c poor control (>9%) Behavioral health = screening for depression and follow-up plan; initiation and engagement of substance use disorder treatment Seamless care coordination = plan all-cause readmissions or all-cause hospital admissions Person-centered care = (varies by program): Consumer Assessment of Healthcare Providers and Systems overall rating measures	**Components and included domains:** Adult: Wellness and prevention Chronic conditions Behavioral health Seamless care coordination Person-centered care Equity Pediatric: Wellness and prevention Chronic conditions Behavioral health Person-centered care **Equity/disparities:** Equity is a domain of the framework, under "Adults". **Context:** N/A	**Similarities:** Both frameworks addresses healthcare delivery, and include the domains types of care, care coordination, person-centered care, and equity. **Differences:** The CMS model has separate domains for adults vs. pediatric populations. Equity is a cross-cutting dimension in the 2010 NASEM framework, while it is just a domain under the Adult population in the CMS model. The CMS model includes behavioral health, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** Adult: Wellness and prevention: colorectal cancer screening; breast cancer screening; adult immunization status Chronic conditions: controlling high blood pressure; hemoglobin A1c poor control (>9%)Behavioral health: screening for depression and follow-up plan; initiation and engagement of substance use disorder treatment Seamless care coordination: plan all-cause readmissions or all-cause hospital admissions Person-centered care: (varies by program): Consumer	**Process development:** We have created a cross-center working group focused on coordination of these processes and on development and implementation of aligned measures to support a consistent approach under the Universal Foundation. We started by identifying preliminary measures for the Universal Foundation's adult and pediatric components. The streamlined measures included would be used across CMS programs and populations, to the extent that they are applicable and in keeping with legislative statutes. **Source/Endorsements:** Yes CMS **Stakeholder engagement:** No Suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

	Equity = identification and number undetermined: screening for social drivers of health Pediatric: Wellness and prevention = well-child visits (well-child visits in the first 30 months of life; child and adolescent well-care visits); immunization (child immunization status; immunization for adolescents); weight assessment and counseling for nutrition and physical activity for children and adolescents; oral evaluation, dental services Chronic conditions = asthma medication ration (reflects appropriate medication management of asthma) Behavioral health = screening for depression and follow-up plan; follow-up after hospitalization for mental illness; follow-up after emergency department visit for substance use; use of first-line psychosocial care for children and adolescents on antipsychotics; follow-up care for children prescribed attention deficit-hyperactivity disorder medication Person-centered care = (varies by program): Consumer Assessment of Healthcare Providers and Systems overall rating measures		Assessment of Healthcare Providers and Systems overall rating measures Equity: identification and number undetermined: screening for social drivers of health Pediatric: Wellness and prevention: well-child visits (well-child visits in the first 30 months of life; child and adolescent well-care visits); immunization (child immunization status; immunization for adolescents); weight assessment and counseling for nutrition and physical activity for children and adolescents; oral evaluation, dental services Chronic conditions: asthma medication ration (reflects appropriate medication management of asthma) Behavioral health: screening for depression and follow-up plan; follow-up after hospitalization for mental illness; follow-up after emergency department visit for substance use; use of first-line psychosocial care for children and adolescents on antipsychotics; follow-up care for children prescribed attention deficit-hyperactivity disorder medication Person-centered care: (varies by program): Consumer Assessment of Healthcare Providers and Systems overall rating measures	
Javed, 2022[153] **Name:** Race as SDOH: upstream, midstream, downstream pathways	**Type of care:** Disparities, equity, SDOH SDOH, disparities, care quality 1 aspect	**Components and included domains:** SDOH Upstream pathways from SDOH to racial inequity Midstream determinants	**Similarities:** There don't seem to be any similarities between the two frameworks.	**Process development:** N/A **Source/Endorsements:** No Model suggested by authors

US **Link:** https://www.ahajournals.org/doi/10.1161/CIRCOUTCOMES.121.007917?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed	**Setting:** Research and policy, healthcare, population health **Population:** Populations affected by CVD, specifically racially/ethnically diverse individuals **Intended use:** To address SDOH **Defined:** SDOH = economic stability, built environment, education, food, community/social context, healthcare system Upstream pathways from SDOH to racial inequity = low income/wealth, unemployed/unstable jobs, less likely to receive financial assistance for housing, less likely to own property; homelessness, neighborhood poverty, transportation and physical activity barriers, crime/violence, housing insecurity, food insecurity; black individuals 30% less likely to earn college degree, Hispanic individuals 60% less likely to receive an advanced degree, black individuals experience high student loan burden, low eduction products poor employment prospects; food insecurity, food desert, lack of grocer store with healthy food options, higher prevalence of fast food outlets in poor income neighborhoods; racial/ethnic discrimination, smaller social networks, poor social cohesion, poor social support/community engagement (based on limited evidence); institutional racism, implicit provider bias,	Downstream determinants Disease **Equity/disparities:** The framework is applied to racial/ethnic disparities in CVD **Context:** CVD	**Differences:** The SDOH framework addresses SDOH, while the 2010 NASEM framework addresses healthcare delivery. The SDOH framework includes economic stability, built environment, education, food, community/social context, upstream pathways from SDOH to racial inequity, midstream determinants, downstream determinants, and disease, while the 2010 NASEM framework does not. **Policy levers:** Authors conclude with a set of research and policy recommendations to inform future work in the field, and move a step closer to health equity, based on the framework. **Available measures:** N/A	**Stakeholder engagement:** No Model suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to a different context

	communication/language challenges, lack of culturally competent care Midstream determinants = psychological stress, physical stress, unsafe/unhealthy living conditions; physical inactivity; health behaviors (smoking, excessive alcohol); unhealthy diet (less fruits, vegetables, fresh food, and more processed/red meat, salt, trans fat); poor community/social support; poor quality healthcare, differential diagnosis, treatment, racism (internalized stress) Downstream determinants = (hypertension, hypercholesterolemia, diabetes, thrombosis in this example) Disease (CVD in this example)			
Jee, 1999[154] **Name:** N/A Multiple countries **Link:** https://www.oecd-ilibrary.org/docserver/513803511413.pdf?expires=1712242569&id=id&accname=guest&checksum=C095CDECB082AD1362F74C764179ADE2	**Type of care:** Quality of care Health indicators for outcome-oriented policymaking **Setting:** Health care and population health **Population:** OECD member countries **Intended use:** To classify the range of indicators that have been put forward to measure health outcomes **Defined:** Health Status Indicators: Mortality = life expectancy; infant mortality; standardized causes of mortality rates; premature mortality: potential years of life lost Morbidity and Quality of Life: general morbidity; disease-specific morbidity	**Components and included domains:** Health Status Indicators: Mortality Morbidity and Quality of Life: general morbidity; disease-specific morbidity Composite health measure (mortality + morbidity) Indicators of Performance of the Medical-Care System: Quality of medical care **Equity/disparities:** Equity and disparities are not explicitly addressed in this framework. **Context:** N/A	**Similarities:** Both frameworks include effectiveness ("rates of effective health-care interventions" in this report). Both frameworks address medical care quality in some way. **Differences:** The framework in this report addresses indicators of health outcomes and includes a component on quality of medical care, while the 2010 NASEM framework itself addresses health system delivery broadly. The framework in this report include mortality, morbidity and quality of life (general and disease-specific morbidity), while the 2010 NASEM framework does not. **Policy levers:** The framework was developed to provide help provide information for policy	**Process development:** Not reported **Source/Endorsements:** Yes OECD **Stakeholder engagement:** Unclear The paper was prepared collaboratively by Melissa Jee of the Health Policy Unit and Zeynep Or, acting as consultant to OECD **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this model has been tested empirically

	General morbidity = perceived health status; measures of impairment, disability, and handicap; multi-dimensional health status measures (e.g., SF-36, EuroQol, and Health Utility Index) Disease-specific morbidity = prevalence and incidence of diseases Composite health measure (mortality + morbidity) = health expectancies (e.g., disability-free life expectancy and health-adjusted life expectancy); disability-adjusted life years Indicators of Performance of the Medical-Care System: Quality of medical care = rates of avoidable mortality and morbidity; survival rates; rates of effective health-care interventions which play an important role in health gain; rates of adverse events following treatment; rates of satisfaction with health-care system		makers on health outcomes. The framework was developed for classifying the range of indicators that have been put forward to measure health outcomes. Authors illustrate in the report the potential value of different indicators for policy making within this framework and describes some recent trends in health status in OECD countries. **Available measures:** Mortality: life expectancy, infant mortally, standardized causes of mortality rates, premature mortality: potential years of life lost Morbidity and quality of life (general morbidity): perceived health status; measures of impairment, disability, and handicap, multi-dimensional health status measures (e.g., SF-36, EuroQol, and Health Utility Index) Morbidity and quality of life (disease-specific morbidity): prevalence and incidence of diseases Composite health measures (mortality and morbidity): health expectancies (e.g., disability-free life expectancy) and Health-adjusted life expectancy; disability-adjusted life years Quality of medical care: rates of avoidable mortality and morbidity; survival rates; rates of effective healthcare interventions which play an important role in health gain; rates of adverse events following treatment; rates of	

			satisfaction with healthcare system	
Jun, 1998[155] **Name:** N/A US **Link:** https://pubmed.ncbi.nlm.nih.gov/9803321/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Stakeholders in healthcare **Intended use:** To address and highlight the dimensions of health care quality **Defined:** N/A	**Components and included domains:** Tangibles: appearance; processes; cleanliness Courtesy: attitude; privacy; professionalism Reliability: consistency (equal treatment); billing accuracy Communication: technical complexity explained; interaction; time spent Competence: education; expected; continual improvement (measurable, empowerment) Understanding customer: patient; physician Access: visibility; convenience Responsiveness Caring Patient outcomes Collaboration: teamwork; synergistic package; internal and external to hospital **Equity/disparities:** Equal treatment is a sub-component of the Reliability dimension. **Context:** N/A	**Similarities:** Both frameworks consider equity and health systems infrastructure capabilities, and include access and effectiveness ("patient outcomes" in this study's framework). **Differences:** The framework in this study includes patient experience (caring, attitude, responsiveness) explicitly, while the 2010 NASEM framework does not. Equity is a cross-cutting dimension in the 2010 NASEM framework, while it is just a sub-component in this study. **Policy levers:** N/A **Available measures:** N/A	**Process development:** Focus group interviews with patients, physicians, and hospital administrators to get their feelings, attitudes, and perceptions about health care quality using a procedure called Grounded Theory. Interviews were subsequently transcribed into word-processing software and imported into NUD*IST (software package designed for coding qualitative data). Data yielded 29 categories or nodes, and the categories were further subdivided into 11 dimensions of health care service quality. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes Focus group interviews with patient, administrator, and physician stakeholders on their feelings, attitudes, and perceptions about service quality **Evidence-based:** Empirically based **Defined population:** Unclear Patients, physicians, and hospital administrators were involved in the focus group interviews, but it's not explicitly clear who the framework is population is **Validity testing status:** Not tested No indication that this model has been tested empirically

Kitson, 2013[150] **Name:** The Fundamentals of Care Framework Australia **Link:** https://ilccare.org/the-fundamentals-of-care-framework/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Patients, nursing care community **Intended use:** To overcome poor conceptual clarity surrounding fundamental care by outlining three core dimensions underpinning such care **Defined:** Policy level = financial, quality and safety, governance, regulation and accreditation System level = resources, evaluation and feedback, leadership, culture Psychosocial care recipient needs = communication, being involved and informed, respect, education and information, having values and beliefs considered and respected, dignity, emotional wellbeing, privacy Physical care recipient needs = rest and sleep, personal cleansing and dressing, medication management, toileting needs, eating and drinking, comfort, safety, mobility Relational caregiver actions = being empathetic, helping patients cope, engaging with patients, supporting and involving families and carers, working with patients to set goals, active listening, helping patients to stay calm, being compassionate, being present Relationship = trust, focus, anticipate, know, evaluate	**Components and included domains:** Context of care: policy level, system level Integration of care: psychosocial care recipient needs, physical care recipient needs, relational caregiver actions Relationship **Equity/disparities:** Equity and disparities is not explicitly addressed in the framework. **Context:** Clinical practice in regard to education, direct patient care and leadership	**Similarities:** Both frameworks address healthcare in some way, and include safety. **Differences:** Other than safety, there is no overlap between the components of the two frameworks. The Fundamentals of Care Framework is addresses nursing care (caregiver-care recipient roles) while the 2010 NASEM framework focuses more broadly on healthcare delivery. **Policy levers:** The framework contains a component called policy level, which includes financial, quality and safety, governance, and regulation and accreditation. **Available measures:** N/A	**Process development:** From the presentations and discussions (seminar with stakeholders) on the first day a sub-group of volunteers from the ILC group agreed to work on the data that had been generated from the wider group. Three rapporteurs (Paul Yerrell (PY), Kerry Kuluski (KK) and Tiffany Conroy (TC)) took detailed notes of the first day's discussion and then together with the lead facilitators (Alison Kitson (ALK), Louise Locock (LL) and Renee Lyons (RL)) the data was analysed for emerging themes and issues. This summary was then presented to the volunteer sub-group of Day 2. Its task was to work together on several of the discrete themes that emerged from Day 1 and to generate a conceptual framework. Four major areas were identified: issues relating to how the initial nurse patient relationship is established within the clinical encounter; further work on what fundamentals of care consisted of; consideration of the wider contextual (health system and wider policy, political and regulatory frameworks) environment that impacts on care and finally work on the action plan (which again was divided up into actions for clinicians, researchers, educators and policy makers). The data from this second day was written up immediately by ALK and TC and checked for

				consistency and intelligibility with KK, LL and RL. From this data, the proposed Fundamentals of Care Framework together with the Action Plan have emerged. A first iteration of the paper was circulated to the Day 2 participant sub-group members in September 2012 for comment and feedback. Following this a refined version was circulated to all seminar participants for comment and feedback in December 2012. The final version was edited in January 2013 and published on behalf of the ILC by the University of Adelaide. **Source/Endorsements:** Yes International Learning Collaborative **Stakeholder engagement:** Yes An invitational seminar was held in June 2012 at Green Templeton College, University of Oxford, facilitated by members of the International Learning Collaborative (ILC) and the Health Experiences Institute (HEXI) and included a wide range of experts in patient centred care, nursing practice, health policy, and research and executives from patient associations and health care regulatory organisations. The purpose of the two day event was specifically to debate whether there was a problem in how patients experience the fundamentals of care and if so, how authors could set about improving these.

				Evidence-based: Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to different context
Kramers, 2003[157] **Name:** N/A Multiple countries **Link:** https://academic.oup.com/eurpub/article/13/suppl_1/101/544301?login=false	**Type of care:** Other Population health, health care quality/performance 1 dimension **Setting:** N/A **Population:** Europe **Intended use:** To classify health indicators **Defined:** Demography and socio-economic situation = population, socio-economic factors Health status = mortality, morbidity (disease-specific), generic health status, composite measures of health status Determinants of health = personal and biological factors, health behaviors, living and working conditions Health systems = prevention, health protection and health promotion; health care resources; health care utilization; health expenditures/financing; health care quality/performance	**Components and included domains:** Demography and socio-economic situation Health status Determinants of health Health systems **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks include health care/systems resources/infrastructure capabilities. **Differences:** The ECHI framework classifies health indicators, while the 2010 NASEM framework addresses healthcare delivery in general. The ECHI framework includes domains such as demography and socio-economic situation, health status, and determinants of health, while the 2010 NASEM framework does not. **Policy levers:** Authors state that the indicator set should cover areas in public health which Member States want to pursue (MS policy priorities; also regions within MS may have their own health policies); it should meet the needs of Community policies. The probability of changing policy interests calls for a high degree of flexibility, made possible by current electronic data systems. The health indicators developed in the article are linked to health policy aims. **Available measures:** Population: population composition and change; births, deaths, migration, regional distribution, projections	**Process development:** The team has met five times between February 1999 and October 2000. Draft texts were prepared by the project co-ordinator and were subject of substantial amendment and detailed discussion during these meetings. In the early stages the discussion was focused on the basic frame of the indicator list, the criteria and the concept of user-windows. During the second year, it shifted towards the selection and definition of the indicators. The Member State policy profiles were used to also include new proposals for which no regular data collection is still available. In a final stage, the list was integrally checked with Eurostat to ensure a sufficiently realistic approach. During the second half of the project period and there- after, the ECHI results were discussed intensely in the HMP project co-ordinators meetings, and they in-creasingly served as a frame of reference for work in other projects. The final results were presented in the Eurostat meeting on public health statistics, and were taken up as a priliminary guideline for further

			Socio-economic factors: education, employment, ethnic origins, household situation, income distribution, gross economic indicators Mortality: life expectancy and related indicators; general mortality (crude, standardized death rates; perinatal and child mortality; inequality in deaths); cause-specific mortality (crude, standardized death rates, years of life lost, for a) the 'main causes of death', in terms of size, using the European shortlist of 65 causes; and b) a limited set of causes of death selected as relevant for certain risk factors or issues of prevention or health care Morbidity, disease-specific: incidence/prevalence of selected diseases/disorders; analogous to 'mortality', proposed are a) diseases that are responsible for a large share of the burden of ill health (large impact) in the population (based on Burden of Disease studies and WHO HFA list; base list of 28 disease/disorder groups), and b) a limited set of diseases selected as relevant for certain risk factors or issues of prevention and health care (five items proposed). Disease definitions should coincide with the causes of death, were applicable. Generic health status: perceived health; chronic conditions general; functional limitations; activity restrictions; general mental health; general	developments in European health statistics. **Source/Endorsements:** Yes European commissions' Health Monitoring Programme **Stakeholder engagement:** Yes To develop a set of health indicators for the ECHI project **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically

			quality of life; absenteeism from work; inequality measure Composite measures of health status: disability free life expectancy; other health expectancies Personal and biological factors: biological (risk) factors - BMI, birth weight, blood pressure, serum cholesterol, nutritional status indicators; personal conditions - coping ability, sense of mastery, other mental conditions Health behaviors: substance use - smoking, alcohol use, (il)licit drug use; nutrition - energy from food components, consumption of specific food items, breastfeeding, contaminants; other health-related behaviors - physical activity, sexual behavior, induced abortions, traffic behavior, other? Living and working conditions: physical environment (outdoor air, housing, drinking water supply, sewage system, ionizing radiation, noise); working conditions (physical/mental workplace exposures, work accidents, occupational diseases); social and cultural environment (social support/isolation/networks, life events/violence) Prevention, health protection and health promotion: disease prevention (vaccination coverage, cancer screening, screening for blood pressure/cholesterol, prenatal/neonatal screening, general prevention examination,	

			integrated children's health monitoring); health promotion (campaigns on health behaviors, mental health promotion); health protection (regulations on public smoking, measures on advertising/prices of tobacco/alcohol, regulations on alcohol and driving, seat belts, cycle helmets, regulations on food safety and quality, on air/water quality) Health care resources: facilities (hospital beds in various settings/functions); manpower (various medical staff employed, staff ratios); education (numbers of various medical staff graduated); technology (number of units of specified equipment) Health care utilization: in-patient care utilization (bed days, occupancy rates, average length of stay, discharges by disease group); out-patient care utilization (out-patient contacts); surgical operations (number of selected operations); medicine use/medical aids (medicine use; total and by some 10 specific important groups) Health expenditures/financing: health care system (key indicators for structure/financing of the national health care system; insurance coverage; distribution of household expenditures on health); national expenditure on health (expenditures by categories of the System of Health Accounts); expenditure on medical services (expenditures by categories of the System of Health Accounts);	

			medical goods dispensed to out-patients (expenditures by categories of the System of Health Accounts); total health expenditure by age group; health expenditure by fund source Health care quality/performance: subjective indicators (perception of the health system, complaints); health care process indicators (autopsy rate, waiting lists/times, surgeries/interventions considered inappropriate, variations in specific surgeries/interventions, quality of blood products); health outcomes (avoidable deaths, iatrogenic disease/death, 30-days in-hospital mortality, 28-day readmission rate, surgical wound infection, incidence of end-stage renal failure, antibiotic resistance, cancer survival rates	
Kringos, 2010[158] **Name:** Primary Care System Framework Multiple countries **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2975652/	**Type of care:** Quality of care **Setting:** Primary care **Population:** Users of primary care health system **Intended use:** To guide the development of measurable indicators on the basis of characteristics of primary care systems identified in the literature. **Defined:** Dimension of the primary care structure = governance of primary care system; economic conditions of the primary care system;	**Components and included domains:** Dimension of the primary care structure Dimensions of the primary care process Dimensions of the primary care outcomes **Equity/disparities:** Health equity is one of the dimensions of primary care outcomes in the framework. **Context:** Primary care	**Similarities:** Both frameworks considers equity, efficiency, coordination of care, and access to care. **Differences:** The 2010 NASEM framework is focused on health care delivery broadly, while the Primary Care System Framework is focused on primary care only. **Policy levers:** A dimension of the framework is governance of the primary care system, and one of the feature of the dimension is policy on equity in access. Authors note that policy on equality in access	**Process development:** N/A **Source/Endorsements:** No Models suggested by authors **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) Users of primary care health system **Validity testing status:** Tested Applied in different context

	primary care workforce development Dimensions of the primary care process = access to primary care services; comprehensiveness of primary care services; continuity of primary care; coordination of primary care Dimensions of the primary care outcomes = quality of primary care; efficiency of primary care; equity in health		(governance), primary care coverage (economic conditions), geographic availability of primary care services (access), and affordability of primary care services (access) are all related to equity. The framework is expected to result in variation in primary care systems across Europe and knowledge about primary care oriented policy strategies (e.g., related to accessibility or integration). The PC framework offers countries the opportunity to evaluate their PC system in the context of their policy aims. **Available measures:** N/A	
Kruk, 2008[159] **Name:** Framework for health systems performance measures Multiple countries **Link:** https://www.sciencedirect.com/science/article/abs/pii/S016885100700200X?via%3Dihub	**Type of care:** Quality of care Health system performance **Setting:** Health system performance **Population:** General population **Intended use:** To serve as a framework for assessing health system performance **Defined:** Inputs = Policies; funding/financing; organization Policies = Right to health laws, composition of essential services package, private sector regulation Funding/Financing = Level of health expenditures, models of financing, fee schedules/provider salaries Organization = Private/public provider mix, distribution of facilities/providers, management and information systems	**Components and included domains:** Inputs: Policies; funding/financing; organization Outputs/Process Indicators: Effectiveness (access to care, quality of care); equity (access for disadvantaged groups, quality for disadvantaged groups, participation/accountability); efficiency (adequacy of funding, costs and productivity, administrative efficiency) Outcomes/Impact: Effectiveness (health status improvement, patient satisfaction); equity (health status improvement for disadvantaged groups, fair financing, risk protection); efficiency (maximizing value of resources) **Equity/disparities:** Equity is a dimension of the framework, further separated into	**Similarities:** Both frameworks address health system delivery, and includes equity, effectiveness, efficiency, access, safety, timeliness, and continuity of care. **Differences:** This framework is separated into three main columns (inputs; outputs/process indicators; and outcomes/impact), and outputs/process indicators and outcomes/impact are further categorized into the three main dimensions of effectiveness, equity, and efficiency. **Policy levers:** Policies (right to health laws, composition of essential services package, private sector regulation) is a component under the Inputs domain of the framework. **Available measures:** Effectiveness (outcomes -	**Process development:** Literature review and discussion with experts informed the development of the framework. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes We also reviewed key arti- cles, conference publications, and texts that were not included in the database search through discussion with experts **Evidence-based:** No **Defined population:** No (target unclear) **Validity testing status:** Not tested No indication that this model has been tested empirically

	Outputs/Process Indicators = Effectiveness (access to care, quality of care); equity (access for disadvantaged groups, quality for disadvantaged groups, participation/accountability); efficiency (adequacy of funding, costs and productivity, administrative efficiency) Access to care = availability, utilization, timeliness Quality of care = safety, efficacy, continuity Outcomes/Impact = Effectiveness (health status improvement, patient satisfaction); equity (health status improvement for disadvantaged groups, fair financing, risk protection); efficiency (maximizing value of resources)	outputs/process indicators and outcomes/impact categories. **Context:** N/A	health status) = infant mortality; maternal mortality Effectiveness (outcomes - patient satisfaction) = being treated with respect; quality of physician-patient communication; length of wait for care Effectiveness (outputs - access to care) = physicians, nurses, hospitals per 1000 population; basic and comprehensive emergency obstetric care facilities per 500,000 population; percentage of population within 10km of a clinic Effectiveness (outputs - quality of care) = use of evidence-based diagnostics and therapies (Hb A1C for diabetes, aspirin for myocardial infarction, correct antibiotic for community acquired pneumonia); infection and complication rates of surgery; case fatality rates; treatment completion rates Equity (outcomes - health status for disadvantaged groups) = mortality rates for lowest income quintile (under-five, 15-49, maternal, cancer) Equity (outcomes - fair financing) = proportion of government health financing that reaches the poorest income quintile Equity (outcomes - risk protection) = proportion of population with catastrophic health expenditures Equity (outputs - access for disadvantaged groups) = utilization of essential health services by disadvantaged	

			groups (e.g., attended delivery, modern contraceptives, specialist visits) Equity (outputs - quality for disadvantaged groups) = efficacy, safety, continuity indicators analyzed for disadvantaged groups Equity (outputs - participation/accountability) = perception of exclusion/inclusion from health system Efficiency (outcomes - value of resources) = mortality rates per dollars invested in health care Efficiency (outputs - adequacy of funding) = per capita health care spending (government, private, total) Efficiency (outputs - costs and productivity) = costs per case treated (per hospital day, per outpatient visit); average length of stay; cost-effectiveness ratios for specific services (compared to alternative services) Efficiency (outputs - administrative efficiency) = health worker attrition rates	
Leggat, 1997[161] **Name:** Framework for assessing the performance of integrated health delivery systems Multiple countries **Link:** https://journals.sagepub.com/doi/10.1016/S0840-4704(10)61148-9?url_ver=Z39.88-2003&rfr_id=ori:rid:crossref.org&rfr_dat=cr_pub%20%200pubmed	**Type of care:** Quality of care Performance of health systems **Setting:** Health systems quality of care **Population:** General population **Intended use:** To assess the performance of integrated health delivery systems **Defined:** N/A	**Components and included domains:** Financial perspective: How does the IDS look to funders? Customer perspective: How do patients/other customers view the IDS? Internal business perspective: At what must the IDS excel? Innovation and learning perspective: How can the IDS continue to improve? Community benefit: How does the IDS impact the health status of the population?	**Similarities:** There are no clear similarities between the two frameworks, but they both address the health delivery system. **Differences:** This study's framework includes financial perspective, customer perspective, internal business perspective, innovation and learning perspective, and community benefit, while the 2010 NASEM framework does not.	**Process development:** 1. Identify stakeholders 1a. Determine stakeholder priorities 2. Obtain commitment to evaluate 3. Design the methodology: whose perspective, or which stakeholder's point of view, should be considered? what level of analysis should be used? what time frame will be employed? what type of data

		Equity/disparities: Equity is not explicitly addressed in framework. **Context:** N/A	**Policy levers:** The establishment of a consistently used evaluation framework for integrated delivery systems will provide the government, governing bodies and other evaluators with an effective assessment tool that will enable greater understanding of the impact of the integrate health delivery systems (IDS) on the health care system. **Available measures:** N/A	will be used? what referent or benchmark will be used? 4. Collect the data 5. Interpret the data 6. Report and recommendations 7. Evaluate the process **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** Yes **Evidence-based:** No **Defined population:** No (target unclear) **Validity testing status:** Not tested No indication that this has been tested empirically
Levesque, 2020[162] **Name:** Integrated performance measurement framework Australia **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6950882/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** International healthcare systems **Intended use:** Incorporate a manageable number of performance domains that together provide a comprehensive assessment, as well as conceptual and operational clarity and coherence that support multifaceted measurement systems for healthcare **Defined:** Healthcare resources and structures = investments in, allocation and organisation of healthcare resources Patient needs and expectations = measures of ill health, prevalence of chronic illness, limitations to daily activities caused by health issues, or health literacy Healthcare functions, processes and context = a focus on	**Components and included domains:** Patient needs and expectations Healthcare resources and structures Healthcare functions, processes and context Outcomes Receipt and experience of services Coverage Efficiency Adaptability Resilience Accessibility Effectiveness Appropriateness Safety Productivity Sustainability Equity Impact **Equity/disparities:** Equity is an overarching construct that relates to the population distribution of other constructs, such as access,	**Similarities:** Both frameworks includes equity, efficiency, effectiveness, access, safety, and healthcare resources and structure. Both frameworks addresses healthcare. **Differences:** The integrated performance measurement framework includes patient needs and expectations, outcomes, receipt and experience of services, coverage, adaptability, resilience, impact, sustainability, productivity, and appropriateness while the the 2010 NASEM framework does not. **Policy levers:** Authors note that the proposed framework can support more comprehensive assessment and also provide transparency about decisions regarding which aspects of performance are measured and reported. Its	**Process development:** Mapping data sources (grey literature; published literature); categorizing selected data; identifying and naming concepts (clustered into 25 broad categories); deconstructing and categorizing the concepts (identify assumptions regarding performance measurement (logic, functional, goal achievement models); differentiate 'measurable' and 'derived' constructs); integrating concepts (distinguish 'directly measurable' and 'derived' constructs; patient, provider, population and system perspectives); synthesis, resynthesis and making it all make sense (schematically relate constructs to each other, independent research determination; any disagreement resolved by discussion. Visual representation developed);

	standard operating practices and how various components of the system interact together during the process of delivering services Outcomes = patient reported measures and activities of daily living; includes physical, psychological, social effects of care and maybe also the outcomes that are generated by experience of care such as trust and confidence in capacity to manage care Receipt and experience of services Coverage = the extent to which services rendered meet the potential need for those services in a community Efficiency = the extent to which healthcare systems and organizations make the best use of available resources Adaptability = as the demands for healthcare services - and the technologies available to deliver them - change, systems need to be able to adapt to respond, and planning tools need to recognize the interdependencies within the care service and care infrastructure system Resilience = the ability to mount a robust response to unforeseen, unpredicted, and unexpected demands and to resume or continue normal operation Accessibility = the extent to which patients are able: to recognize and identify their healthcare needs; to seek care; to reach providers of care; to	appropriateness and effectiveness. **Context:** Conferences, scientific meetings, populating and publishing indicator sets to healthcare system	principal purpose is measurement – although it has clear relevance for quality improvement and for policy. **Available measures:** Patients' needs: Number of people in poor health; Self-reported health status; Prevalence of diabetes; Health literacy. Patients' expectations: Importance of politeness and courtesy; Perception of delays or waiting times; Desire for choice and engagement in care decisions. Healthcare resources: Number of doctors, nurses; Financial and human resources invested. Healthcare structures; Organisational models of care; Organisational climate and culture; Allocation models. Healthcare services: Number of surgeries; Number of emergency department visits; Receipt of care; Healthcare quality: politeness; respect; precision; consistency. Healthcare processes: Models of care; Patient pathways and protocols; Coordination and integration processes; Flow of information; Collaboration. Healthcare outcomes: Number of deaths per 100,000 population Number of healthcare associated infections Health-related quality of life measures Accessibility: Out of pocket costs Number of visits relative to number of expected visits	validating the conceptual framework (presenting to conferences, scientific meetings, populating and publishing indicator sets to healthcare system); rethinking the conceptual framework (simplification of visual presentation to better capture perspectives and interlinking nature of performance constructs) **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Presented to conferences, scientific meetings, populated and published indicator sets to healthcare system

	pay for care; and to receive care that is proportionate and matched to their needs. Effectiveness = the extent to which healthcare services deliver to patients the benefits expected Appropriateness = the extent to which patients receive services that respond to: a) their health needs, b) align with best-practice models of care; c) is delivered in a technically proficient way; d) in accordance with their expectations about the manner in which they should be treated Safety = incorporates the notion of risk – are processes in place to prevent unnecessary harm to patients – both minimizing iatrogenic harm and acting in a way that interrupts patient deterioration and circumvents exacerbations that are amenable to care. Productivity = the number of goods and services delivered per unit of resource Sustainability = the extent to which healthcare systems function in ways that meet patients' current health and healthcare needs without compromising the ability to meet needs in the future Impact = the influence that services have on a population's overall health and functioning Equity = the extent to which everyone in a population has the opportunity to reach their full health potential, equity incorporates the idea that receipt of care, appropriateness		Patient survey data measuring reported barriers to care Waiting times / timeliness / punctuality Appropriateness: Compliance with recommended care (e.g. proportion of AMI patients discharged on preventive medications) Patient survey data on patient-centredness Safety: Hand hygiene or surgical checklists compliance Infection control Adverse events Effectiveness: Patient reported outcomes measures Does healthcare make a positive difference to patients' health? Are needs of patients reduced? Is disease progression altered? Relative survival Symptom control Changes in activities of daily living Coverage: Schedule of available funded procedures and treatments Patient reported confidence in ability to access care Consequences of unmet need (e.g. dental caries) Productivity: Consultations per physician Scans per CT facility Cost per bed day Efficiency: Unnecessary duplication of tests Number of consultations per doctor Relative stay index	

	of care and outcomes of care should be consistent across social groups and responsive to needs		Adaptability: Shifts in supply patterns in response to health trends Uptake rates of effective new technologies Introduction of new models of care to meet emerging expectations Sustainability: Investment in Research & Development programs Utilisation of cost effective alternative models of care Pace of increase in expenditure Absenteeism, long term vacancies, use of locums Assured supply of essential drugs Resilience: Flexibility – ability to mobilise resources when required Timeliness in high activity periods in the emergency department Elective surgery cancellations when there is heightened demand for emergency surgery Impact: Premature mortality Life expectancy Activities of daily living Changes over time in health status Equity/Fairness in health, fairness in healthcare: Disparities in accessing care for equal need Infant mortality by Aboriginality	
Levitt, 2010[204] **Name:** Quality Flower/Tool Canada **Link:** https://qualitybookoftools.ca/wp-	**Type of care:** Quality of care **Setting:** Primary care, family practice **Population:** Family practices in Ontario, but also could be useful for primary care settings	**Components and included domains:** Eight categories that incorporate the common elements of family practice activities: Patient-centered Equitable	**Similarities:** Both frameworks have similar components including equity, efficiency, access, effectiveness, timeliness, safety, and patient-centeredness.	**Process development:** The Quality program (a collaborative group from McMaster University and the Ontario College of Family Physician) team developed and tested the program and the original Quality

content/uploads/2021/01/QBT-Book.2013-Lightning.4.pdf	throughout Canada and internationally **Intended use:** To help improve quality in primary care **Defined:** N/A	Timely and accessible Safe Effective clinical practice Efficient Integrated and continuous Appropriate practice resources Five values integral to developing a sustainable quality-improvement culture: Continuous quality improvement Self-reflection Voluntary Patient/consumer involvement Interdisciplinary team **Equity/disparities:** Equity is one of the measures/components of the Quality Flower **Context:** N/A	**Differences:** The Quality Flower was developed for primary care and family practice, while the 2010 NASEM framework addresses healthcare delivery more generally. **Policy levers:** In the integrated and continuous component, one of the subcomponents is out-of office care: there is a policy for out-of-office care. A subcomponent of the Appropriate Practice Resources component is human resources management, which includes the practice team having human resources policies and procedures. **Available measures:** Privacy and confidentiality: The practice team maintains the privacy of patient information in accordance with legislation Guiding documents and legal contracts: The practice team demonstrates its commitment to respecting the needs and rights of its patients Mandatory reporting: Mandatory reporting occurs in accordance with legislation Boundary issues: All members of the clinical team are trained in professional standards regarding boundary issues Encouraging patient feedback and suggestions: The practice team encourages patient feedback and suggests; the practice respects patients' rights to complain Informed decision making: patients are provided with	Tool in a number of phases. In 2003-2005, the team reviewed the national and international literature on quality assessments in family practice/primary care, conducted focus-group interviews, environmental scans and teleconferences with patients and practitioners, and visited sites in the United Kingdom, Australia, New Zealand and Toronto, Canada that operate quality programs. The information guided the process for the Quality program and tool development. The project team was assisted by a steering committee composed of primary care providers, administrative staff and patients/consumers, a number of consultants and an advisory committee of key stakeholders. The program and tool was tested in three practices in urban and rural settings in Ontario in 2005-2006, and in seven family health teams (including 130 health-care providers caring for 74,000 patients) in 2007-2008. A modified Delphi process, conducted in 2008-2009 on the Indicators, led to a complete rewrite of the Quality Tool in 2009-2010. The revised version is called The Quality Book of Tools and covers the complex scope of family practice. **Source/Endorsements:** Yes Ontario Ministry of Health and Long-Term Care

			enough information to make informed decisions about their care Educational resources for patients: the clinical team provides educational information on health Equitable care: New patients are accepted into the practice without discrimination; patients get the same quality of care regardless of who they are and where they live; the clinical team identifies and provides additional services for patients with special needs Timely and accessible: Patients can reach the practice by telephone, email and/or other electronic means; Patients can book appropriate appointments; Registration of new patients and transfer of medical records are timely and accessible; Investigations and referrals occur in a timely manner After-hours and emergency care: The clinical team provides access to 24-hour care, 7 days a week; The practice team responds to emergencies and urgent medical conditions Infection control: the practice follows infection-control guidelines Cold chain: the practice team follows provincial guidelines for vaccine storage/cold chain Office procedures: procedures performed in the office conform to accepted guidelines Disposal of sharps and medical waste: the practice team safely disposes of sharps and biomedical waste	**Stakeholder engagement:** Yes See Process of development field above **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Unclear Not reported

			Medical equipment: medical equipment and resources are safe, appropriate, secure, available and maintained Drugs: drugs available in the practice are appropriate, controlled, secure and maintained; prescription management Medical record-keeping: medical records are stored or filed safely and securely; medical records include all essential information necessary to provide quality patient care; there is a system to track and mange patient test results and medical reports Incident reporting: there is an incident reporting system to identify and address serious or potentially serious adverse events Lifestyle and prevention: smoking cessation; alcohol; diet and exercise Immunization: baby, childhood and adolescent immunizations; adult immunizations Surveillance and screening: screening for colorectal cancer; screening for cervical cancer; screening for breast cancer Life cycle clinical management: well baby/child care; adolescent care; maternity care; adult care; frail elder care Sexual health: sexual health Family violence: family violence Chronic disease management: mental health; diabetes mellitus; hypertension; secondary prevention in coronary heart disease; stroke or transient ischemic attacks; asthma;	

			COPD; hypothyroidism; epilepsy; cancer Palliative care: palliative care Open indicator: open indicator Efficient information management: there is a system to manage patients tests and reports efficiently Continuity of care in the office: the practice team provides continuity of care; the practice team provides continuity of care to patients with complex needs (high-frequency users, regular emergency users, patients often in crisis, and patients with multiple problems) Out-of-office care: there is a policy for out-of-office care Human resources management: All clinical team members of the practice are qualified and certified; The practice team has human resources policies and procedures; The practice members function as a team; The practice team members balance work and home life Physical facilities: The practice is physically accessible; The practice's waiting area accommodates patients and their family members; Examination areas ensure patient comfort and privacy Workplace safety and fire management: the practice is committee to workplace safety; fire risk is minimized Practice improvement and planning: The practice team promotes continuous quality improvement (CQI); The practice team has a formulated	

			practice plan for improvement and risk management	
Levitt, 2013[163] **Name:** Quality Book of Tools Canada **Link:** https://www.longwoods.com/content/23240/healthcare-quarterly/developing-an-institute-of-medicine-aligned-framework-for-categorizing-primary-care-indicators-for	**Type of care:** Quality of care **Setting:** Primary care **Population:** Primary care **Intended use:** To categorize primary care indicators **Defined:** Patient-centered = patient issues include feedback and input, informed decision-making and self-management and the provision of educational resources Equitable = patients are accepted and treated in the practice without discrimination, regardless of who they are and where they live, and, when required, are given extra services Timely and Accessible = patients obtain appointments, referrals, test results and after-hours or emergency care in a timely manner; new patients' medical records are transferred efficiently Safe = safety issues include infection control, vaccine storage, performance of office procedures, disposal of sharps and medical waste, safe and appropriate medical equipment, drug and prescription management, medical record storage, ensuring that medical records include essential information, tracking of test results and incident reporting Effective clinical practice = patients receive quality clinical care based on best-practice	**Components and included domains:** Patient-centered Equitable Timely and Accessible Safe Effective clinical practice Efficient Integrated and continuous Appropriate practice resources **Equity/disparities:** Equity is one of the components of the framework. **Context:** Primary care	**Similarities:** Both frameworks includes patient-centeredness, equity, timeliness, access, safety, effectiveness, and efficiency. **Differences:** The Quality Book of Tools is tailored for primary care, while the 2010 NASEM framework addresses healthcare delivery more broadly. The Quality Book of Tools includes the components integrated and continuous, as well as appropriate practice resources, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** N/A	**Process development:** (1) developing category titles and definitions that aligned with those of the IOM (2001), Ontario Health Quality Council (2007) and Cancer Quality Council of Ontario (n.d.) based on included primary care indicators in the QBT; (2) comparing the category titles in the Quality Book of Tools with those from other international tools (3) describing and comparing each of the category titles based on its included indicators **Source/Endorsements:** Yes Ontario College of Family Physicians **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Tool was tested, validated and refined using a modified Delphi method

	evidence-based guidelines; this includes the clinical outcomes of lifestyle and prevention, immunization, screening and surveillance, life-cycle clinical management, sexual health, family violence, chronic disease management and palliative care Efficient = tests and reports are managed and accessed efficiently, avoiding unnecessary duplication and time wastage Integrated and continuous = indicators include integration and continuity of care, including services for patients with complex needs, integration with community care and provision of out-of-office care Appropriate practice resources = indicators include human resources management, physical facilities, workplace safety and fire management, and practice improvement and planning			
Liu, 2013[164] **Name:** Theoretical framework of holistic hospital management Japan **Link:** https://www.sciencedirect.com/science/article/abs/pii/S0168851013002224?via%3Dihub	**Type of care:** Other Hospital management, but can be quality of care **Setting:** Healthcare, hospital management **Population:** Japan **Intended use:** Performance measurement for holistic hospital management in the Japanese healthcare setting **Defined:** Satisfaction = N/A Health status = health statistics, occupational health, etc. Safety/Quality = patient safety, occupational safety, quality of care, etc.	**Components and included domains:** Stakeholder perspectives (patient, employee, management) Assessment properties (healthcare outcomes, performance shaping factors) Healthcare outcomes (satisfaction, health status, safety/quality, time/efficiency, effectiveness) Performance shaping factors (structure, process, culture, climate) **Equity/disparities:** Equity and disparities are not explicitly addresses in the framework.	**Similarities:** Both frameworks include safety, timeliness, efficiency, effectiveness, and patient-centeredness. **Differences:** The framework by Liu addresses hospitals specifically while the 2010 NASEM framework addresses healthcare delivery more broadly. The hospital framework includes stakeholder perspectives in the figure of the framework, while the 2010 NASEM framework does not. The hospital framework includes healthcare outcomes such as satisfaction and health	**Process development:** 1. Published literature search (PubMed and PubMed Central) for articles that fulfilled the following criteria: Clear description of indicators: an article included clear description of indicators; Application to actual setting: indicators were applied to actual work setting in healthcare; Multiple measures: an article included indicators from not only one but multiple measures; Measurable indicators: indicators were not only defined but also quantitatively measured or assessed; Management

	Time/Efficiency = waiting time/delay, readmission/return, productivity, etc. Effectiveness = patient-centeredness, management effectiveness, financial effectiveness, etc. Structure = employment systems, education/training, equipment, staffing, etc. Process = work conditions, work environment, operations/procedures, clinical process, management process, etc. Culture/Climate = openness, information disclosure, safety culture, compliance, etc.	**Context:** A minimum set of performance indicators was selected for holistic hospital management in the Japanese context.	status, as well as performance shaping factors such as structure, process, and culture/climate, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** Patient satisfaction: patient satisfaction survey (multiple items) Patient safety: incidents/errors; accident/adverse event; nosocomial infection (specific germs, e.g., MRSA and C. difficile) Waiting/delay: outpatient waiting time; waiting time in emergency room Information: received written information Employee satisfaction: employee satisfaction survey (multiple items) Occupational health: sickness leave Occupational safety: needle stick injury Work conditions: staff turnover; overtime; length of service; occupied position Employment conditions: number of staff per bed Health statistics: Mortality (specific disease, e.g., stillbirths/infant deaths, post-operative mortality and perioperative mortality); Survival/revival (specific disease, e.g., breast cancer, cervical cancer, colon cancer and lung cancer); Number of outpatients per day Inpatient admission; Number of operations/procedures	purpose: indicators were used for the purpose of management of a hospital or departments. 2. Questionnaire to healthcare experts. A major purpose of the questionnaire survey was to select a limited number of indicators, which are applicable to hospital management in the Japanese context, from viewpoints of healthcare experts. A total of 66 indicators were offered in the questionnaire. These indicators were selected based on the results of the systematic review and interviews with health-care professionals within the project team. **Source/Endorsements:** No Model suggested by individual author **Stakeholder engagement:** Yes A questionnaire survey to healthcare experts. The expert questionnaire asked respondents to rate the degree of “usefulness” for each of 66 indicators on a three-point scale **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied in different context

			Readmission/return: unscheduled readmission; unexpected return to ICU/OR Organizational efficiency: bed occupancy; length of stay; admissions per bed; number of outpatients per doctor; number of emergency patients per doctor Financial effectiveness: financial measures; cost/expenditure Staffing: full-time equivalents; full-time staff Safety culture: safety culture survey (multiple items)	
Ludlow, 2022[165] **Name:** Community-Based Health Care Evaluation Framework Canada **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9270820/	**Type of care:** Quality of care **Setting:** Community-based health care **Population:** Global population **Intended use:** To evaluate outcomes and impacts of community-based health care **Defined:** Aims = improved health outcomes, improved value of care, improved experience of care Health system outcome measures = mortality (mental health, addictions); quality of life, PROM; cost of care; avoidable hospitalization; avoidable emergency department use; access to integrated primary health care; E-Health penetration; person-centered satisfaction of care (Global PREMs) Short-term impact = avoidable hospitalization; avoidable emergency department use; access to integrated primary health care	**Components and included domains:** Aims Health system outcome measures Short-term impact Long-term impact **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** Community-based programs in the context of provincial ministry of health planning process in Canada	**Similarities:** Both frameworks include value of care and access to care. **Differences:** The CBHC framework is specifically for community-based health care, while the 2010 NASEM framework is for healthcare delivery broadly. The CBHC framework is designed to includes aims, health system outcome measures, short term impact, and long term impact, while the 2010 NASEM framework is not. The CBHC framework categorizes components of the framework at each intersection between three different aims (improved health outcomes, improved value of care, improved experience of care) and: health system outcome measures, short term impact, and long term impact. **Policy levers:** This research was commissioned by Alberta's Ministry of Health as a central part of policy work to support	**Process development:** Modified Delphi informed conceptualization and prioritization of indicators. Formative research identified evaluation framework elements (triple aim, global measures, and impact), health system levels (tiers), and potential CBHC indicators. Two Delphi rounds were held. Round 1, panelists independently ranked indicators on CBHC relevance and health system tiering. Results were analyzed by coding agreement/disagreement frequency and central tendency measures. Round 2, a consensus meeting was used to discuss disagreement, identify Tier 1 indicators and concepts, and define indicators not relevant to CBHC. Post-Delphi, indicators and concepts were refined, Tier 1 concepts mapped to the evalu- ation framework, and indicator narratives developed. Three

	Long-term impact = mortality (mental health, addictions); quality of life, PROMS; cost of care, avoidable hospitalization; avoidable emergency department use; person-centered satisfaction of care/PREMs		future decision making about implementing a system-level Community Based Health Care in the province. Stakeholders include policy perspectives. The framework has implications for CBHC policy and planning. **Available measures:** Mortality (mental health, addiction): mortality rates (due to mental/behavioral problem, drug use, alcohol, suicide, etc.); rates of self-injury, including suicide; youth suicide rate (decrease) Quality of life, PROM: patient (self-reported) quality of life; PROMS - percentage of patients with a chronic condition that are maintaining or improving health as indicated in a EQ 5D survey Cost of care: total cost of care; per capita healthcare cost (primary care, specialist care, hospital care, diagnostics, pharmaceuticals, long-term care, community care) Avoidable hospitalization: hospital admissions and readmissions; % readmission (30 day) to acute care for all patient/client admissions Avoidable emergency department use: inappropriate use of ER Access to integrated primary health care: access to an interprofessional primary care team; PCN Enrol - percentage of Albertans enrolled in a primary health care network; access to a regular primary care provider	stakeholder consultations (scientific, government, and public/patient communities) were held for endorsement and recommendation. **Source/Endorsements:** Yes Ministry of health in Alberta, Canada **Stakeholder engagement:** Yes Consulted to endorse and capture feedback for next steps **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to different context

			E-Health penetration: implementation and meaningful use of electronic medical records/electronic health records; % of patients who are using a patient portal; online access to health information; information sharing across continuum of care including patients and family caregivers; patient access to their own health information Person-centered satisfaction of care (global PREMs): patient and family experience and satisfaction	
Ma, 2023[166] **Name:** Conceptual Model for Health and Health Care Equity US **Link:** https://catalyst.nejm.org/doi/full/10.1056/CAT.22.0442	**Type of care:** Disparities, equity, SDOH Equity **Setting:** Healthcare **Population:** General population **Intended use:** To address health care equity **Defined:** Prevention and access = equitable access to care; preventive care Transitions = equitable and timely admission and transition between care units Quality of care = equitable quality of care using measures such as infection and mortality rates, and equitable experience with care Post-discharge = equitable social and family support, assistance with language and health literacy during post-discharge period Societal and structural equity = measurable at community level Socioeconomic and environmental factors = economy, labor market,	**Components and included domains:** Prevention and access Transitions Quality of care Post-discharge Societal and structural equity Socioeconomic and environmental factors Improved equity in health outcomes **Equity/disparities:** The framework is aimed at addressing health and healthcare equity. **Context:** N/A	**Similarities:** Both frameworks include access to care, care coordination, continuity of care, timeliness and equity. **Differences:** The framework in this commentary piece includes the domains quality of care, socioeconomic and environmental factors and improved health outcomes, while the NHQDR does not. **Policy levers:** N/A **Available measures:** N/A	**Process development:** Authors adapted from the model by Sivashanker and colleagues (Health care equity: from fragmentation to transformation). **Source/Endorsements:** No **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** No **Defined population:** No (target unclear) **Validity testing status:** Not tested No indication that this model has been tested empirically

	neighborhood poverty, neighborhood physical conditions, housing, etc. Improved equity in health outcomes = N/A			
Marshall, 2004[167] **Name:** Conceptual Model of the Continuum of Health Promotion, Prevention and Primary Care Multiple countries **Link:** https://www.oecd.org/els/health-systems/33865865.pdf	**Type of care:** Quality of care Healthcare and health promotion **Setting:** Health promotion and healthcare **Population:** OECD member countries **Intended use:** To serve as a model of the continuum health promotion and healthcare in OECD countries **Defined:** Health promotion = the various population-base strategies that target major risk factors of disease, mostly through efforts to change health-related behavior Preventive care = organized population-directed services in areas such as vaccination, screening and prenatal care Diagnosis/Treatment: Primary health care; Secondary health care Primary health care = the subset of diagnostic therapeutic activities considered as being the first line organized personal medical care (in contrast to specialized medical care such as provided by medical specialists and in hospitals). [Apart from general forms of diagnosis and treatment, the Panel regarded the coordination of care between different providers and the provision of guidance to patients through the	**Components and included domains:** Health promotion Preventive care Diagnosis/Treatment: Primary health care; Secondary health care Population-based health services Personalized medical care **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks address healthcare delivery in some way, and includes types of care and care coordination. **Differences:** This OECD framework also addresses health promotion, while the 2010 NASEM framework does not. This OECD framework also includes diagnosis/treatment, population-based health services, and personalized medical care, while the 2010 NASEM framework does not. **Policy levers:** The technical quality of medical care now rivals cost and access as the foremost concern of health policymakers. To improve care for their citizens and to realize potential efficiency gains, policymakers are looking for methods to measure and benchmark the performance of their healthcare systems as a precondition for evidence-based health policy reforms. Published international health data sets such as OECD Health Data currently lack comparable measures for the technical quality of national health systems, and there is, so far, little possibility of such international benchmarking. To fill this gap, the OECD Health Care Quality Indicators Project brought together many stakeholders and countries to	**Process development:** In order to develop indicators, the panel formed three categories to capture the core functions in selected areas in a health care system (health promotion, preventive care, and primary care). The three categories span the continuum of health care services in the areas of quality of care that the Panel was tasked to address. **Source/Endorsements:** Yes OECD **Stakeholder engagement:** Yes International expert panel used a structure review process and selected a set of 27 indicators **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

	health care system as key functions of primary health care. Population-based health services = N/A Personalized medical care = N/A		identify priority areas for initial development of indicators. **Available measures:** Health Promotion: Preventive Care; Obesity prevalence; Physical activity; Smoking rate; Diabetes prevalence; Gonorrhoea/Chlamydia rates; Abortion rates Preventive Care: Blood typing and antibody screening for prenatal patients; HIV screen for prenatal patients; Bacteriuria screen for prenatal patients; Immunisable conditions; Low birth weight rate; Adolescent immunisation; Anaemia screening for pregnant women; Cervical gonorrhoea screening for pregnant women; Hepatitis B screen for pregnant women; Hepatitis B documentation in record at time of delivery; Hepatitis B immunisation for high-risk groups; Influenza vaccination for high-risk groups; Pneumococcal vaccination for high-risk groups Diagnosis and Treatment - primary care: Congestive Heart Failure readmission rate; First visit in first trimester; Smoking cessation counselling for asthmatics; Blood pressure measurement; Re-measurement of blood pressure for those with high; Diagnosis and Treatment: Primary Care blood pressure; Initial laboratory investigations for hypertension; Hospitalisation for ambulatory care sensitive conditions	

Mary Black Foundation, n.d.[168] **Name:** Mary Black Foundation's Health Equity Framework US **Link:** https://maryblackfoundation.org/about-us/health-equity/	**Type of care:** Disparities, equity, SDOH Equity, culturally relevant care 1 component **Setting:** Spartanburg County, South Carolina **Population:** Residents of Spartanburg County, South Carolina **Intended use:** To advance health equity in Spartanburg County, South Carolina **Defined:** Safe and supportive neighborhoods = parks and open spaces; access to fresh, healthy food, and clean water; thriving and sustainable environments; safe, healthy, connected, and energy-efficient affordable housing; complete streets; reliable transportation and/or multi-modal connectivity; positive youth development opportunities; adult supports and services High quality education and employment = early care and education networks; K-12 education; institutions of higher learning; career readiness and job training; employment opportunities with wages that allow for self-sufficiency Accessible, affordable, and culturally relevant health care = mental health; maternal and child/adolescent health; dental health; screening, prevention, and treatment; health advocacy	**Components and included domains:** Safe and supportive neighborhood High quality education and employment Accessible, affordable, and culturally relevant health care **Equity/disparities:** The framework itself was developed to address health equity, and centers around health equity. **Context:** Funding, advocacy, impact investments, training for healthcare providers, capacity building for educators, strategic alliances to study child and adolescent behavioral health needs, and many more.	**Similarities:** Both frameworks addresses healthcare and equity. **Differences:** The 2010 NASEM framework is centered around health care with equity as a component, while the Mary Black Foundation's Health Equity Framework is centered around health equity with healthcare as a component. **Policy levers:** N/A **Available measures:** Safe and supportive neighborhoods: parks and open spaces; access to fresh, healthy food, and clean water; thriving and sustainable environments; safe, healthy, connected, and energy-efficient affordable housing; complete streets; reliable transportation and/or multi-modal connectivity; positive youth development opportunities; adult supports and services High quality education and employment: early care and education networks; K-12 education; institutions of higher learning; career readiness and job training; employment opportunities with wages that allow for self-sufficiency Accessible, affordable, and culturally relevant health care: mental health; maternal and child/adolescent health; dental health; screening, prevention, and treatment; health advocacy	**Process development:** N/A **Source/Endorsements:** Yes Mary Black Foundation **Stakeholder engagement:** Yes Leaders and members of the Mary Black Foundation worked together to develop the framework **Evidence-based:** No **Defined population:** Yes (framework target described in detail) Residents of Spartanburg County, SC **Validity testing status:** Tested The Mary Black Foundation has applied the framework to put into action various activities such as funding for playground and trail construction, mobile markets to bring healthy foods to communities, impact investments in affordable housing, among many oth
Matos, 2021[169] **Name:** N/A Portugal	**Type of care:** Quality of care **Setting:** Public hospital performance	**Components and included domains:** Access Efficiency and productivity Financial Quality	**Similarities:** Both frameworks include equity, safety, effectiveness, efficiency, access, timeliness, types of	**Process development:** Data were collected from the Portuguese Health Ministry, Central Administration of the Health Systems, the

Link: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7945611/	**Population:** Portuguese population **Intended use:** To be used a model for assessing Portuguese public hospitals' performance **Defined:** Access = average length of stay; hip fracture surgery in the first 48 hours; inpatient bed occupancy rate; rate of first medical appointments within time; rate of surgeries within time; standard patients per full-time equivalent (FTE) doctor; standard patients per FTE nurse; waiting time before surgery Efficiency and productivity = drug expenses per standard patient; operating expenses per standard patient; personnel expenses per standard patient; standard patient per expenses with supplies and external services; standard patients per FTE doctor; standard patients per FTE nurse Financial = average payment period (average time elapsed in days, between the goods and services purchase and the respective payment); current liability ratio (whether the entity debt is mostly short or medium-long term); current ratio (the ability to pay short-term obligations to current assets); equity ratio; operating leverage; operating margin; return on assets; return on equity; return on investment; return on sales; solvability Quality = care appropriateness; clinical safety	Clinical safety **Equity/disparities:** Equity ratio is a subdomain of Financial domain. **Context:** N/A	care, and health systems infrastructure capabilities. **Differences:** The Portuguese framework is aimed at addressing Portuguese public hospitals' performance, while the 2010 NASEM framework addresses health system delivery broadly. The Portuguese framework includes the domain quality and financial, and the subdomain care appropriateness, while the 2010 NASEM framework does not. The Portuguese framework includes productivity as a co-domain of the "efficiency" domain, while the 2010 NASEM framework does not. **Policy levers:** Besides contributing to health gains, one should expect that political action inhealth may reduce poor health outcomes and inequity in treatment access. Policymakers analyze the proposals and decide on the regulation and hospital organization mechanisms. The results drawn by this study may help as they make evident that hospitals can maximize their performance by improving some (if not all) categories. A balance between access, efficiency, and productivity, financial, and quality must be achieved. Administrate based on this new evidence possibly brings benefits not only for hospitals but for the NHS sustainability. Policymakers should use contracts and associated bundle payments to impose	Portuguese Health Ministry open data initiative, and from reports and accounts provider per hospital. An analysis was conducted on single hospitals and hospital centers to ensure the production process and structural homogeneity, and ensure a fair comparison, avoiding biasing sources. The reason that the four domains were selected was based on a comprehensive literature revision, availability and quality of the data for the sample and time interval considered, and relevance for the study in question. One should avoid redundant information as well as an excessively high number of variables. They should be enough to explain hospital performance. In this way, the correlation between variables was analyzed to verify the association between them and redundancy. Some variables exhibiting high correlation and causal relationships were removed. Thus, each of the remaining variables are guaranteed to bring new and non-redundant information into the model. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in

	Clinical safety = postoperative pulmonary embolism/ deep vein thrombosis; postoperative septicemia rate; trauma on vaginal delivery (instrumented and non-instrumented) with lacerations of third and fourth degree		penalties and prizes according to the overall performance or in each group. **Available measures:** Access: average length of stay; hip fracture surgery in the first 48 hours; inpatient bed occupancy rate; rate of first medical appointments within time; rate of surgeries within time; standard patients per full-time equivalent (FTE) doctor; standard patients per FTE nurse; waiting time before surgery Efficiency and productivity: drug expenses per standard patient; operating expenses per standard patient; personnel expenses per standard patient; standard patient per expenses with supplies and external services; standard patients per FTE doctor; standard patients per FTE nurse Financial: average payment period (average time elapsed in days, between the goods and services purchase and the respective payment); current liability ratio (whether the entity debt is mostly short or medium-long term); current ratio (the ability to pay short-term obligations to current assets); equity ratio; operating leverage; operating margin; return on assets; return on equity; return on investment; return on sales; solvability Quality: care appropriateness; clinical safety	detail) Portuguese public hospitals **Validity testing status:** Tested Applied in different context
Meade, 2015[170] **Name:** Model of healthcare disparities and disability	**Type of care:** Disparities, equity, SDOH Disparities, care quality 1 aspect	**Components and included domains:** Health status Body functions and structures Activities	**Similarities:** Both frameworks includes access to healthcare. **Differences:** The framework by Meade et al. addresses the	**Process development:** A narrative method was used to identify and critique the main conceptual frameworks that

US **Link:** https://pubmed.ncbi.nlm.nih.gov/25060038/	**Setting:** Population health and healthcare **Population:** Persons with disabilities and those affected by disparities **Intended use:** To help with understanding healthcare disparities experienced by individuals with disabilities **Defined:** Health status = health conditions, secondary conditions Body functions and structures = impairments Activities = ability / disability, ADL/IADL, work/household limitations Participation = N/A Environmental factors = transportation, location, natural/built environment, policies, health system (including structural factors, financial factors, provider attitudes, etc.) Access to healthcare = affordability, availability, accessibility, acceptability, accommodation, quality of healthcare, utilization of healthcare, unmet medical needs Personal factors = race/ethnicity, gender, marital status, health beliefs, education, health literacy, insurance, attitudes, preferences	Participation Environmental factors Access to healthcare Personal factors **Equity/disparities:** The framework was developed to address healthcare disparities specifically among those affected by disabilities. **Context:** N/A	intersection between disabilities and healthcare disparities, while the 2010 NASEM framework addresses healthcare delivery in general. The framework by Meade considers health status, body function and structures, activities, participation, environmental factors and personal factors that the 2010 NASEM framework does not. **Policy levers:** Authors note that the integrated model can be used by policy makers, healthcare providers and administrators, researchers, advocacy organizations, and individuals with disabilities to begin to identify and address modifiable factors that may lead to more equitable access to healthcare. **Available measures:** N/A	have been used in analyzing disparities in healthcare access and quality, and evaluating those frameworks in the context of healthcare for individuals with disabilities. Specific models that were examined include the Aday and Anderson Model, the Grossman Utility Model, the Institute of Medicine's models of Access to Healthcare Services and Healthcare Disparities, and the Cultural Competency model. In response to identified gaps in the literature and short-comings of current conceptualizations, an integrated model of disability and healthcare disparities was put forth. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically
Mears, 2011[171] **Name:** N/A Multiple countries **Link:** https://pubmed.ncbi.nlm.nih.gov/21846732/	**Type of care:** Quality of care dimensions of quality **Setting:** Healthcare **Population:** Europe **Intended use:** To classify healthcare indicators	**Components and included domains:** Dimension of quality: safety, clinical effectiveness, patient experience, efficiency Data type: derivable, aggregate, special collection	**Similarities:** Both frameworks addresses healthcare, and includes safety, effectiveness, and efficiency. **Differences:** The indicator classification framework aims to	**Process development:** In early 2009, preliminary development work on the indicator classification framework was informally discussed among the 32 delegates from 12 European countries. A working group was

	Defined: Safety = avoidance of harmful intervention Effectiveness = care which conforms with best practice and which is most likely to maximize benefit for patients and service user Patient/service user experience = how a person experiences care and the extent to which that is positive Efficiency = how effectively resources are distributed to maximize benefit to service users per resource expended Structure = the underpinning infrastructure and resources that an organization has in place to achieve its aims (people, material, policies and procedures) Process = what an organization actually does Outcome = the results of what an organization does Derivable data = data collected in the process of giving care, as part of that process Aggregate data = (i.e. total number of admissions, contacts, deaths etc) data collected 'after the fact' and returned at set time periods to central management, purchasers etc. has been the traditional way of collecting data Special collection data = request for information to be collected specifically by organizations, when data are simply unavailable Judgement from single indicators = single measures assess one focussed aspect of care with a defined threshold of	Donabedian: structure, process, outcome Data use: judgement from single indicators , judgement framework, benchmarks, outlier identification **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** Acute hospital setting	be used for classifying healthcare indicators, while the 2010 NASEM framework aims to address healthcare delivery in general. The indicator classification framework includes the dimensions: data type, donabedian components, and data use, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** Safety: process in place that identify events that may lead to avoidable patient harm; mistakes in prescription of drugs and other medications; MRSA and C-difficule rates per 1000 bed days Clinical effectiveness: mortality rates for stroke, AMI, fractured neck of femur 30-day readmission rates; patient recorded outcome measures; compliance with best practice care pathways and procedures (e.g., acute myocardial infarction, asthma management) Patient experience: % of A&E patients seen with 4h; % of patients who always felt treated with respect and dignity Healthcare-associated infection (Netherlands): postoperative wound infection (POWI) % per type of operative procedure (mean); % compliance with POWI bundle Healthcare-associated infection (England): Surgical site infection (SSI) % rate per operation (mean); compliance	formed at this meeting. Key experts were recruited to the group, which reported back to the meeting of the EPSO. A pilot has been conducted across two nations (England and the Netherlands), using a subset of the full framework: the safety dimension in acute hospital settings. **Source/Endorsements:** Yes OECD **Stakeholder engagement:** No Model suggested by European Platform for Supervisory Organizations working group **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to different context

	acceptable performance; their purpose is to measure in isolation from any other measures, typically with a percentage representing acceptable performance Judgement framework = share a common methodology and ideology, but can vary in scale considerably, from small aggregate (composite) measures with a few underlying indicators, through to large complicated systems (for example, a review of the quality of an entire service) Benchmarks = peer group-based data-driven performance measures Outlier identification = a more sophisticated application of the benchmarking idea, in that it looks for variation, but does so for statistically meaningful outliers, rather than looking at top or bottom deciles or quartiles		with bundle of hygiene code measures Medication (Netherlands): % patients with medication verification at admission/discharge Medication (England): performance against basket of medication measures from NHS staff survey	
Mistry, 2023[172] **Name:** AHRQ Research and Action Health Equity Framework US **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10684034/	**Type of care:** Disparities, equity, SDOH health and healthcare equity **Setting:** Health and healthcare **Population:** US **Intended use:** Used by the participants of the Summit to explore the action domains through an equity lens, and highlight cross-cutting themes that emerged from the five domain papers that can serve as a basis for informing a research agenda for AHRQ and the field of he	**Components and included domains:** Context: policy, systems, environment; institutions/organizations; community; individual Key action domains for AHRQ: healthcare delivery system structure; payment; SDOH and social needs; implementation; access Support health systems to deliver equitable care Reduce inequities in quality, safety, and value Use AHRQ core competencies to support these areas: research; practice improvement; data analytics; training	**Similarities:** Both frameworks include access, safety, equity, value, and health systems infrastructure capabilities. **Differences:** This framework aims to achieve health and healthcare equity, while the 2010 NASEM framework addresses healthcare delivery more broadly and has equity as a cross-cutting dimension. **Policy levers:** The data and analytics part of the framework can be defined as use of data to inform program and policy decisions. Policy is one of the	**Process development:** In December 2021, AHRQ convened a stakeholder Summit planning meeting that included more than 50 diverse stakeholders and users of AHRQ research, data, and tools. The participants also provided feedback on an Equity Research and Action Framework within the context of AHRQ's mission that illustrates five action domains. AHRQ invited five teams to author papers on the framework's five action domains. The teams conducted evidence-based narrative reviews on the

	Defined: Healthcare delivery system structure = How can healthcare delivery organizations structure their systems of care to advance health equity? Payment = How can payers and healthcare delivery organizations use payment to support and incentivize advancing health care equity? SDOH and social needs = How can healthcare delivery organizations address individual patient social needs and broader structural SDOH to advance health equity? Implementation = From an implementation science lens, how can healthcare delivery organizations most effectively implement interventions to advance health equity? Access = How can healthcare delivery organizations and payers improve access to high-quality care to advance health equity?	**Equity/disparities:** Equity is central to this framework; the framework is focused on how to achieve health and healthcare equity. **Context:** N/A	contexts, which is a component of the framework. **Available measures:** Payment = How can payers and healthcare delivery organizations use payment to support and incentivize advancing health care equity? SDOH and social needs = How can healthcare delivery organizations address individual patient social needs and broader structural SDOH to advance health equity? Implementation = From an implementation science lens, how can healthcare delivery organizations most effectively implement interventions to advance health equity?	intersection of equity and their domains and recommended priorities to inform a research agenda. Rather than conducting formal systematic reviews, AHRQ encouraged each team to tailor their approach to the topic, state of the literature, and rapid project timeline so that results could be shared at the Health Equity Summit to maximize the opportunity to go beyond the litera- ture to incorporate diverse voices and experiences of stakeholders. In September 2022, a 2-day Health Equity Summit established a com- munity of belonging, co-created strategies to advance equity related to the healthcare system, and identified opportunities for AHRQ to drive progress. The goals of the Summit included (1) developing a shared understanding and language to describe health equity for AHRQ's vision and mission; (2) exploring shared experiences of stake- holders about the impact of structural racism on the healthcare deliv- ery system with implications for improving system performance; and (3) empowering stakeholders to serve as change agents. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes In December 2021, AHRQ convened a stakeholder Summit plan- ning meeting that included more than 50 diverse stakeholders and users of

				AHRQ research, data, and tools. he participants also provided feedback on an Equity Research and Action Framework within the context of AHRQ's mission that illustrates five action domains. **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this model has been tested empirically
Mosadeghrad, 2012[174] **Name:** Model of quality measurement in healthcare Iran **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3732361/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Iran **Intended use:** Provide a better understanding of the different aspects of quality in health care and provides a better basis for defining, measuring and controlling quality of health care services **Defined:** Tangibles = physical facilities (e.g., structure, building, equipment) and personnel (quantity and quality) that create the capacity to provide healthcare services Environment = N/A Intangibles = N/A Empathy = ability of understanding and caring the healthcare setting provides its customers Efficiency = the extent to which resources are used well in achieving a given result Effectiveness = the degree to which desired results and	**Components and included domains:** Healthcare services Tangibles (environment) Intangibles (empathy, efficiency, effectiveness, efficacy) **Equity/disparities:** The framework does not explicitly address equity or disparities. **Context:** N/A	**Similarities:** Both frameworks addresses healthcare, and includes efficiency and effectiveness. **Differences:** The framework by Mosadeghrad includes tangible and intangible categories for attributes of healthcare services, while the 2010 NASEM framework doesn't. The framework by Mosadeghrad includes environment, empathy and efficacy while the 2010 NASEM framework does not. **Policy levers:** The findings can be used in the development of an instrument to measure quality of healthcare services. The findings have important implications for policy makers. Their support, in terms of providing necessary resources and establishing supportive rules and regulations is critical. **Available measures:** N/A	**Process development:** A 'purposive' sample of nine groups of stakeholders who were representative members of the larger population was employed in this study to adequately capture the heterogeneity in the population. In-depth face-to-face interviews were used for gathering the perspectives of outpatients, patient's relatives, doctors, managers, policy makers, accreditators, suppliers, payers, and quality managers. This study also relied on the focus group discussion method to generate qualitative data on the preferences and expectations of inpatients and providers (except doctors) for healthcare quality. In this research, after data analysis, member checks (respondent validation) were done in face-to-face discussions with a subgroup of participants in order to verify and validate the findings. Member checking consisted of reporting back

	outcomes of care are achieved - meeting customer expectations Efficacy = the degree to which desired results and outcomes of care are achieved - the extent to which the provider's objective of providing the service has been achieved			preliminary results to a group of participants, asking for comments on the findings and interpretations, and incorporating these critiques into the results. The researcher also utilised peer debriefing with five quality management experts. Peer reviewers debriefed with the researcher by presenting a summary of the gath- ered data, categories and themes that emerged and the researcher's interpretations of the data. **Source/Endorsements:** No Model suggested by individual author **Stakeholder engagement:** Yes Individual and focus group interviews were conducted with key healthcare stakeholders in Isfahan, Iran. Stakeholder perceptions of what constituted high quality healthcare services were elicited. Evaluation is therefore not only pluralistic (representing a range of views) but becomes situational, reflecting the actual status of healthcare services in Iran. **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically
Murray, 2000[175] **Name:** N/A	**Type of care:** Quality of care **Setting:** Health system	**Components and included domains:** Social systems Social goals	**Similarities:** Both frameworks address healthcare/health system, and include equity,	**Process development:** N/A **Source/Endorsements:** Yes WHO

Switzerland **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2560787/	**Population:** World population **Intended use:** To advance the understanding of health system performance **Defined:** Social systems = education, health, economic, political, other Social goals = education, health, consumption, participation, other Health = improve the health of the population Responsiveness to expectations = respect for persons (respect for dignity, respect for individual autonomy, respect for confidentiality); client orientation (prompt attention to health needs, basic amenities, access to social support networks for individuals receiving care, choice of institution and individual providing care) Fairness in financial contribution = quality, equity, efficiency Instrumental goals = access to care; community involvement, innovation or sustainability Goal performance, composite goal performance and efficiency = N/A Performance of subsystems or organizations = N/A Factors explaining the health system = financing, provision, stewardship, and resource generation Financing = revenue collection, fund pooling, purchasing Provision of health services = personal health services, non-personal health services	Health system goals: Health; Responsiveness to expectations; Fairness in financial contribution Instrumental goals Goal performance, composite goal performance and efficiency Performance of subsystems or organizations Factors explaining the health system Financing Provision of health services Resource generation Stewardship **Equity/disparities:** Equity is addressed in the component 'fairness in financial contribution'. **Context:** N/A	efficiency, and access in some way. **Differences:** The health system framework includes social systems, social goals, instrumental goals, performance of subsystems or organizations, and more, that the 2010 NASEM framework does not. **Policy levers:** Authors note that variation in performance is a function of the way in which the health system organizes four key functions: stewardship (a broader concept than regulation); financing (including revenue collection, fund pooling and purchasing); service provision (for personal and non-personal health services); and resource generation (including personnel, facilities and knowledge). By investigating these four functions and how they combine, it is possible not only to understand the proximate determinants of health system performance, but also to contemplate major policy challenges. **Available measures:** N/A	**Stakeholder engagement:** Yes Provide feedback on the development of the framework **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the framework has been tested empirically

	Resource generation = human resources, physical resources such as facilities and equipment, and knowledge Stewardship = overall system design, performance assessment, priority setting, intersectional advocacy, regulation, consumer protection			
NAM, 2009[91] **Name:** N/A US **Link:** https://pubmed.ncbi.nlm.nih.gov/25009928/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** US **Intended use:** The committee recommends that the State of the USA website include listed indicators for the health/health care domain **Defined:** N/A	**Components and included domains:** Health Outcomes: Life expectancy at birth: Number of years that a newborn is expected to live if current mortality rates continue to apply Infant mortality: Deaths of infants aged under 1 year per 1,000 live births Life expectancy at age 65: Number of years of life remaining to a person at age 65 if current mortality rates continue to apply Injury related mortality: Age-adjusted mortality rates due to intentional and unintentional injuries Self-reported health status: Percentage of adults reporting fair or poor health Unhealthy days physical and mental: Mean number of physically or mentally unhealthy days in past 30 days Chronic disease prevalence: Percentage of adults reporting one or more of six chronic diseases (diabetes, cardiovascular disease, chronic obstructive pulmonary disease [chronic bronchitis and emphysema], asthma, cancer, and arthritis) Serious psychological distress: Percentage of adults with	**Similarities:** Both frameworks addresses types of care. **Differences:** This framework outlines health indicators and follows a structure that includes health outcomes, health-related behaviors, and health systems, while the 2010 NASEM framework addresses health system delivery and follows a different structure. **Policy levers:** N/A **Available measures:** Health Outcomes: Life expectancy at birth: Number of years that a newborn is expected to live if current mortality rates continue to apply Infant mortality: Deaths of infants aged under 1 year per 1,000 live births Life expectancy at age 65: Number of years of life remaining to a person at age 65 if current mortality rates continue to apply Injury related mortality: Age-adjusted mortality rates due to intentional and unintentional injuries Self-reported health status: Percentage of adults reporting fair or poor health Unhealthy days physical and mental: Mean number of	**Process development:** Indicators within the health/health care domain were selected because of their importance to health or health care; because reliable, high-quality data are available to measure change in the indicators over time; because the data can be viewed by population subgroups or geographic region; and because the committee believes that the chosen indicators reflect the overall health of the nation and the effectiveness and efficiency of U.S. health systems. **Source/Endorsements:** Yes NAM **Stakeholder engagement:** Yes A committee formed by the NAM selected the indicators that formed this framework. **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

		serious psychological distress as indicated by a score of ≥ 13 on the K6 scale Health-Related Behaviors: Smoking: Percentage of adults who have smoked ≥ 100 cigarettes in their lifetime and who currently smoke some days or every day Physical Activity: Percentage of adults meeting the recommendation for moderate physical activity (at least 5 days a week for 30 minutes a day of moderate-intensity activity or at least 3 days a week for 20 minutes a day of vigorous-intensity activity) Excessive Drinking: Percentage of adults consuming four (women) or five (men) or more drinks on one occasion and/or consuming more than an average of one (women) or two (men) drinks per day during the past 30 days Nutrition: Percentage of adults with a good diet (conformance to federal dietary guidance) as indicated by a score of ≥ 80 on the Healthy Eating Index Obesity: Percentage of adults reporting a body mass index of ≥ 30 Condom use: Proportion of youth in grades 9–12 who are sexually active and who do not use condoms, placing them at risk for sexually transmitted infections Health Systems: Health care expenditures: Per capita health care spending Insurance coverage: Percentage of adults without	physically or mentally unhealthy days in past 30 days Chronic disease prevalence: Percentage of adults reporting one or more of six chronic diseases (diabetes, cardiovascular disease, chronic obstructive pulmonary disease [chronic bronchitis and emphysema], asthma, cancer, and arthritis) Serious psychological distress: Percentage of adults with serious psychological distress as indicated by a score of ≥ 13 on the K6 scale Health-Related Behaviors: Smoking: Percentage of adults who have smoked ≥ 100 cigarettes in their lifetime and who currently smoke some days or every day Physical Activity: Percentage of adults meeting the recommendation for moderate physical activity (at least 5 days a week for 30 minutes a day of moderate-intensity activity or at least 3 days a week for 20 minutes a day of vigorous-intensity activity) Excessive Drinking: Percentage of adults consuming four (women) or five (men) or more drinks on one occasion and/or consuming more than an average of one (women) or two (men) drinks per day during the past 30 days Nutrition: Percentage of adults with a good diet (conformance to federal dietary guidance) as indicated by a score of ≥ 80 on the Healthy Eating Index	

		health coverage via insurance or entitlement Unmet medical, dental, and prescription drug needs: Percentage of (non-institutionalized) people who did not receive or delayed receiving needed medical services, dental services, or prescription drugs during the previous year Preventive services: Percentage of adults who are up to date with age-appropriate screening services and flu vaccination Childhood immunization: Percentage of children aged 19–35 months who are up to date with recommended immunizations Preventable hospitalizations: Hospitalization rate for ambulatory- care-sensitive conditions **Equity/disparities:** Equity and disparities were not explicitly addressed in this framework. **Context:** N/A	Obesity: Percentage of adults reporting a body mass index of ≥ 30 Condom use: Proportion of youth in grades 9–12 who are sexually active and who do not use condoms, placing them at risk for sexually transmitted infections Health Systems: Health care expenditures: Per capita health care spending Insurance coverage: Percentage of adults without health coverage via insurance or entitlement Unmet medical, dental, and prescription drug needs: Percentage of (non-institutionalized) people who did not receive or delayed receiving needed medical services, dental services, or prescription drugs during the previous year Preventive services: Percentage of adults who are up to date with age-appropriate screening services and flu vaccination Childhood immunization: Percentage of children aged 19–35 months who are up to date with recommended immunizations Preventable hospitalizations: Hospitalization rate for ambulatory- care-sensitive conditions	
NAM, 2024[176] **Name:** N/A US **Link:** https://www.ncbi.nlm.nih.gov/bo	**Type of care:** Disparities, equity, SDOH Equity **Setting:** Population health/ health care system (including public health and community-partnered care)	**Components and included domains:** Key external societal forces: structural determinants of health, oppression and structural racism, SDOH, non-health care sector partnerships, societal commitment to equity	**Similarities:** Both frameworks include equity and addresses healthcare delivery. **Differences:** This framework is focused on population health and achieving equitable	**Process development:** Not reported **Source/Endorsements:** Yes NASEM **Stakeholder engagement:** No Model suggested by NASEM

oks/NBK604493/pdf/Bookshelf_NBK604493.pdf	**Population:** US **Intended use:** To serve as a unifying basis for an approach to organization of a report and recommendations of the NAM committee, and to guide the committee's deliberations **Defined:** Structural determinants of health influence the distribution of health- related social needs (HRSNs) (social and economic needs that affect individuals' ability to maintain their health and well-being) across different populations to either reinforce or mitigate health care inequities. Oppression and structural racism through historical and continued policies such as residential segregation, systemic oppression, or any form of bias, harm health through multiple pathways. These path- ways result in adverse physical, social, behavioral, and economic impacts that directly and indirectly affect the health care system. Deprivation of resources and adverse SDOH (conditions in the environments in which people live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality- of-life outcomes and risks) disproportionately impact minoritized populations and manifest as unmet health-related social needs, which many health care systems are unable to address, further	Equitable health care system: health care laws and payment policies, health care service delivery, discovery and evidence generation, accountability, community centeredness and engagement Outcome: optimal health for all **Equity/disparities:** Equitable health care system and societal commitment to equity are components of the framework. **Context:** N/A	healthcare and optimal health while considering the role of the health care system, while the 2010 NASEM framework focuses on addressing healthcare delivery in general. This framework includes key external societal forces, while the 2010 NASEM framework does not. **Policy levers:** Health care laws and payment policies are a domain of the framework. **Available measures:** N/A	committee, but the report included stakeholder input **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically

	exacerbating inequities in care access, quality, and outcomes. The interest of partners outside the health care sector, such as social service agencies, can shape priorities and programs of health care systems, either negatively, by exacerbating inequities and widening inequity gaps, or positively, by unlocking long-term opportunities to advance health care equity. Societal commitment to identify and remove barriers and create equitable access to resources to achieve equal opportunities posi- tively impacts health and health care; the lack thereof reinforces health and health care inequities. Health Care Laws and Payment Policies. Policies to support equitable health care access, quality, and affordability serve as the foun- dation to remove persistent barriers and ensure that all individuals receive equitable health care services. Health Care Service Delivery. This domain focuses on the delivery of high-quality, culturally sensitive care to all and maximizing the health care system's potential to eliminate racial and ethnic inequities in health and health care. Discovery and Evidence Generation. Data and research are critical resources needed to implement, evaluate, and enforce strategies to eliminate racial and ethnic health care inequities and advance health equity.			

	Accountability. It is critical that goals to create an equitable health care system are achieved and that the system remains responsive to the needs of all communities. Systematic standards and procedures should exist to enable periodic comprehensive reviews of interventions and their implementation.			
NASEM, 2002[6] **Name:** NHQR and NHDR Framework US **Link:** https://www.ncbi.nlm.nih.gov/books/NBK221046/	**Type of care:** Other Quality of care and care disparities **Setting:** Healthcare **Population:** US **Intended use:** To serve as the framework for the NHQR and NHDR **Defined:** N/A	**Components and included domains:** Components of health care quality: safety, effectiveness, patient centeredness, timeliness Consumer perspectives on health care needs: staying healthy, getting better, living with illness or disability, coping with the end of life Equity **Equity/disparities:** Equity is a crosscutting dimension in the framework. **Context:** It has been used as the framework for the NHQR and NHDR.	**Similarities:** Both frameworks address healthcare delivery, and include the domains safety, effectiveness, patient centeredness, and timeliness, as well as having equity as a crosscutting dimension. **Differences:** This framework includes consumer perspectives on health care needs, including staying healthy, getting better, living with illness or disability, and coping with the end of life, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** N/A	**Process development:** Not reported. The framework is from the IOM's Committee on the National Quality Report on Health Care Delivery (Envisioning the National Health Care Quality Report, 2001). **Source/Endorsements:** Yes NASEM/IOM **Stakeholder engagement:** Unclear Not reported, but stakeholders were involved in the development of the report **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this model has been tested empirically
National Association of County and City Health Officials, 2018[178] **Name:** N/A US **Link:** https://www.naccho.org/uploads/downloadable-resources/NACCHO-PM-System-Guide.pdf	**Type of care:** Quality of care **Setting:** Public health **Population:** US **Intended use:** Address performance measurement **Defined:** Customer perspective: quality, timeliness, access, staff attitude Quality = the degree to which customer needs and	**Components and included domains:** Customer perspective: quality, timeliness, access, staff attitude Health equity perspective **Equity/disparities:** "Health equity perspective" is a domain of the framework. **Context:** N/A	**Similarities:** Both frameworks include equity, access, and timeliness. **Differences:** The NACCHO framework includes patient experience explicitly, while the 2010 NASEM framework does not. The NACCHO framework addresses public health and performance measurement more broadly (e.g., across any	**Process development:** N/A **Source/Endorsements:** Yes National Association of County and City Health Officials **Stakeholder engagement:** No Suggested by authors **Evidence-based:** No **Defined population:** No (target unclear)

	requirements are met (e.g. error rates) Timeliness = the speed at which products or services are delivered (e.g., client wait times) Access = degree to which products or services are easily accessible to the customer (e.g., transportation time, affordability) Staff attitude = level of staff courtesy or politeness reported by the customer Health equity perspective = N/A		sector, organization, or program), while the 2010 NASEM framework addresses healthcare delivery. **Policy levers:** There may be policy implications based on the application of the framework to certain initiatives, but it's not clearly reported. **Available measures:** Customer: % of clients satisfied with service; Average wait time for Quit Line callers; % of school principals satisfied with programs/services targeted toward schools; % of community members who are aware of service Finance: % of grant dollars expended on time; Total dollar value of grants received; % of submitted grant applications funded Internal process: Cost per client that quits smoking (efficiency measure); % of client records accurately entered Learning and growth: % of staff trained in tobacco control evidence-based practices; # of best practices adopted Health/health equity: % of low income population living in a smoke free building; % of population reported smoking 6 months following completion of smoking cessation program	**Validity testing status:** Not tested No indication that this been tested empirically
National Health Ministers Benchmarking Working Group, 1996[181] **Name:** N/A Australia	**Type of care:** Quality of care **Setting:** Health sector performance **Population:** Australian population	**Components and included domains:** Quality Production efficiency Outcomes Investment utilization Access Human resource management	**Similarities:** Both frameworks address health system/sector delivery, and include access, effectiveness (outcomes in the Australian framework), efficiency, and health systems infrastructure capabilities.	**Process development:** N/A **Source/Endorsements:** Yes Australian National Health Ministers' Benchmarking Working Group

Link: https://www.aihw.gov.au/getmedia/b736a4ee-aa35-4d30-b16c-a55b403cee86/fnrhspi.pdf.aspx?inline=true	**Intended use:** To highlight categories for establishing appropriate national indicators of performance in the health sector **Defined:** N/A	Business operations **Equity/disparities:** Equity and disparities are not explicitly noted in the framework, but the report indicates that the purpose of developing health sector benchmarks is to provide an incentive for improve efficiency, effectiveness and equity in the health sector. **Context:** N/A	**Differences:** The Australian framework includes quality and investment utilization, while the 2010 NASEM framework does not. **Policy levers:** Part of the purpose of developing health sector benchmarks is to provide an incentive for improved efficiency, effectiveness and equity in health sector through providing governments, other funders and mangers with a core set of management performance information to assist in health sector management and policy development, among other things. **Available measures:** Efficiency: Cost per casemix-adjusted separation; Cost of treatment per outpatient; Average length of stay for top twenty Australian National-Diagnosis Related Groups (AN-DRGs) Productivity: User cost of capital (depreciation + opportunity cost) per casemix-adjusted separation; Ratio of depreciated replacement value to total replacement value; Total replacement value per casemix-adjusted separation Quality: Rate of emergency patient readmission within 28 days of separation; Rates of hospital-acquired infection; Rate of unplanned return to theatre; Patient satisfaction; Proportion of beds accredited by Australian Council on Healthcare Standards (ACHS)	**Stakeholder engagement:** No Suggested by authors/Australian National Health Ministers' Benchmarking Working Group **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

			Access: Waiting times for elective surgery; Accident and emergency waiting times; Outpatient waiting times; Variations in intervention rates; Separations per 1,000 population	
National Health Performance Committee, 2001[182] **Name:** National Health Performance Framework Australia **Link:** https://www.aihw.gov.au/getmedia/cab4b2a3-e55c-48c6-b87f-e39fcd945ac7/nphfr2001.pdf.aspx?inline=true	**Type of care:** Quality of care **Setting:** Healthcare and population health **Population:** Australia **Intended use:** To provide structure as to how to approach an appraisal of how well the health systemis performing. The framework is expected to support benchmarking for health system improvement and to provide information on national health system performance. **Defined:** Health conditions = prevalence of disease, disorder, injury or trauma or other health-related states Human function = alterations to body, structure or function (impairment), activities (activity limitation) and participation (restrictions in participation Life expectancy and well-being = broad measures of physical, mental, and social wellbeing of individuals and other derived indicators such as Disability Adjusted Life Expectancy Deaths = age and/or condition specific mortality rates Environmental factors = physical, chemical and biological factors such as air, water, food and soil quality	**Components and included domains:** Health status and outcomes: health conditions, human function, life expectancy and well-being, deaths Determinants of health: environmental factors, socioeconomic factors, community capacity, health behaviors, person-related factors Health system performance: effective, appropriate, efficient, responsive, accessible, safe, continuous, capable, sustainable **Equity/disparities:** Equity is integral to the framework. Equity of the system is considered and presented across all tiers of the framework, using the question of 'is it the same for everyone?' Differentials reported by age, sex, rurality, ethnicity, socioeconomic status, ju **Context:** Population health, acute care, primary care and continuing care	**Similarities:** Both frameworks considers the domains effectiveness, access, safety, and efficiency. **Differences:** The NHP framework includes health status and outcomes, as well as determinants of health, while the 2010 NASEM framework does not. The 2010 NASEM framework has types of care while the NHP framework does not. The NHP framework addresses health more broadly with a focus on healthcare, while the NASEM framework addresses healthcare delivery. **Policy levers:** Authors note that reporting the socioeconomic factors affecting health will help to inform public policy. One of the criteria for health performance indicator selection was that It has to be relevant to policy and practice: Actions that can lead to improvement are anticipated and feasible – they are plausible actions that can alter the course of an indicator when widely applied. The framework will greatly assist Ministers, funders and purchasers, and other key policy makers to better understand the health system and the impact it has, in order to make longer term	**Process development:** An NHPC workshop was held in Adelaide in July 2000 with over 40 people from a range of backgrounds to refine and improve the proposed framework. Written feedback was also widely requested and this feedback has informed deliberations about the framework or been incorporated into the framework. A wide range of frameworks for national reporting were reviewed. The Canadian Health Information framework was selected and adapted for use in Australia. The NHPC undertook a scan of high level goals and objectives of the Commonwealth, State and Territory health systems and determined that the framework would provide relevant information on the attainment of those goals. **Source/Endorsements:** No Model suggested by National Health Performance Committee (Australia) **Stakeholder engagement:** Yes An NHPC workshop was held in Adelaide in July 2000 with over 40 people from a range of backgrounds to refine and improve the proposed framework. Written feedback

	resulting from chemical pollution and waste disposal Socioeconomic factors = socioeconomic factors such as education, employment, per capita expenditure on health, and average weekly earnings Community capacity = characteristics of communities and families such as population density, age distribution, health literacy, housing, community support services and transport Health behaviors = attitudes, beliefs knowledge and behaviors e.g. patterns of eating, physical activity, excess alcohol consumption and smoking Person-related factors = genetic-related susceptibility to disease and other factors such as blood pressure, cholesterol levels and body weight Effective = care, intervention or action achieves desired outcome Appropriate = care/intervention/action provided is relevant to the client's needs and based on established standards Efficient = achieving desired results with most cost effective use of resources Responsive = service provides respect for persons and is client orientated. It includes respect for dignity, confidentiality, participation in choices, promptness, quality of amenities, access to social support networks, and choice of provider		investment decisions that will improve the health and wellbeing outcomes for Australians now and for the future. **Available measures:** Available measures are not provided but example indicators are provided as possible indicators, such as for health conditions, morbidity attributable to licit and illicit drugs is a possible indicator.	was also widely requested and this feedback has informed deliberations about the framework or been incorporated into the framework. **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied in different context

	Accessible = ability of people to obtain health care at the right place and right time irrespective of income, physical location and cultural background Safe = the avoidance or reduction to acceptable limits of actual or potential harm from health care management or the environment in which health care is delivered Continuous = ability to provide uninterrupted, coordinated care or service across programs, practitioners, organizations and levels over time Capable = an individual's or service's capacity to provide a health service based on skills and knowledge Sustainable = system or organization's capacity to provide infrastructure such as workforce, facilities and equipment, and be innovative and respond to emerging needs (research, monitoring)			
National Quality Forum, 2009[185] **Name:** NQF Measurement Framework: Evaluating Efficiency Across Patient-Focused Episodes of Care US **Link:** https://www.qualityforum.org/Publications/2010/01/Measurement_Framework__Evaluating_Efficiency_Across_Patient-Focused_Episodes_of_Care.aspx	**Type of care:** Other Evaluating efficiency across patient-focused episodes of care **Setting:** Healthcare **Population:** US population **Intended use:** To evaluate efficiency, and ultimately value, across patient-focused episodes of care **Defined:** Patient-level outcomes = Selection of existing process/structure measures for purposes of accountability and quality improvement should be guided by an evidence base that	**Components and included domains:** Domain 1 - Patient-level outcomes: health status/health-related quality of life, patient experience with care Domain 2 - Cost and resource use Domain 3 - Processes of care **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks include value, effectiveness, patient-/family-centeredness, and efficiency. **Differences:** The NQF endorsed framework is aimed at addressing efficiency, and ultimately value, across patient-focused care, while the 2010 NASEM framework aims at addressing health care delivery broadly. The NQF-endorsed framework includes patient experience directly, while the 2010 NASEM framework does not.	**Process development:** NQF convened multistakeholder Steering Committee worked on development of the framework domains. **Source/Endorsements:** Yes NQF **Stakeholder engagement:** Yes Multistakeholder Steering Committee was convened to shepherd the work in developing the measurement framework **Evidence-based:** No

	sufficiently links the measures to desirably patient outcomes and that results in as parsimonious a set of measures as possible to ensure adequate breadth and high compliance Health status/health related quality of life = In addition to evaluating outcomes such as morbidity and mortality for a particular condition or treatment intervention, other important constructs to be measured in this domain include patient self-perception of health status, functional status, and physical and psychological health Patient experience with care = Feedback should be solicited from patients and their families in a formal and systematic fashion and then acted upon Cost and resource use = Capture the total cost of care across the episode--both the quantity of services provided to patients and the true costs paid for each service Processes of care = Measures of process; process measures should be strongly linked to desired intermediate and final outcomes; engage patients proactively in shared decision-making (this collaborative process between patients and their providers is designed to assist them in making informed choices--aligned with their preferences and values--regarding potential treatment choices)		**Policy levers:** NQF convened National Priorities Partnership. Partners agreed to work collaboratively and with policymakers, healthcare leaders, and other stakeholders to develop action plans around the Priorities and to align the drivers of change around common goals. Authors noted efficiency measurement should be designed for continuous learned to inform clinical practice, measure development, policy, and research agenda. **Available measures:** N/A	**Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Authors applied the measurement framework to two very different types of conditions (acute myocardial infarction and low back pain) to determine the applicability of the framework to those conditions, thus making the framework more likely to be generaliza

NCQA, 2023[180] **Name:** Person-Centered Outcome Measures US **Link:** https://www.ncqa.org/wp-content/uploads/2023/01/PCO-Core-Comm-Material-PCO-Measures-Overview.pdf	**Type of care:** Other Person-centered outcomes, better care in title **Setting:** Healthcare **Population:** People with chronic and complex health needs **Intended use:** Standardize documentation and tracking, and measure progress using patient-reported outcome measures or goal attainment scaling. And drive care that matters and encourage organizations throughout the care continuum to work together to help people achieve **Defined:** Person-Centered Outcome Measures = document health outcome goal and action steps; follow up on health outcome goal and measure progress Clinical Care = identify what matters to the person (health outcome goal); implement action steps	**Components and included domains:** Person-Centered Outcome Measures Clinical Care More efficient, effective and equitable health care for people with chronic and complex needs **Equity/disparities:** The framework aims to help people with chronic and complex health needs to achieve equitable (and effective and efficient) care. **Context:** The person-centered outcome measures were tested in a variety of settings, including Medicaid case management, home-based primary care and general case management.	**Similarities:** Both frameworks addresses health care and equity and considers patient/person-centeredness. **Differences:** The 2010 NASEM framework addresses health care more broadly, and equity and person/family-centeredness is just a component, while the NCQA's Person-Centered Outcome Measures aims to achieve more efficient, effective, and equitable health care for people using person-centered outcome measures. **Policy levers:** N/A **Available measures:** N/A	**Process development:** The person-centered outcome measures are the result of seven years of collaboration between NCQA, people and their families, clinicians, researchers and health care organizations. They were tested in a variety of settings, including Medicaid case management, home-based primary care and general case management **Source/Endorsements:** Yes The John Hartford Foundation, The SCAN Foundation, National Committee for Quality Assurance **Stakeholder engagement:** Yes The measures are the result of 7 years of collaboration between NCQA, people and their families, clinicians, researchers, and health care organizations. **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Measures were tested in variety of settings, including Medicaid case management, home-based primary care and general case management
NCQA, 2023[179] **Name:** NCQA Health Equity Framework US **Link:** https://www.ncqa.org/health-equity/measure-accountability/	**Type of care:** Disparities, equity, SDOH Equity, care quality 1 component **Setting:** Medicaid and healthcare system **Population:** Medicaid enrollees and healthcare system users	**Components and included domains:** Equitable Social Interventions Equitable Access to Care Equitable High-Quality Clinical Care Equitable Experience of Care Equitable Structures of Care Overall Well-Being	**Similarities:** Both frameworks addresses healthcare, and includes access to care, timeliness, types of care, and healthcare systems infrastructure capabilities. **Differences:** The NCQA framework is centered on equity and overall well-being, while the	**Process development:** To develop the framework, the authors examined peer-reviewed and grey literature, conceptual and measurement models, policy statements, and state contracting documents, to identify themes, priorities, gaps, and opportunities. The

	Intended use: To help center equity in state and health plan accountability programs, and to promote health equity in managed care contracts **Defined:** Equitable Social Interventions = measures of unmet social needs and the interventions and services designed to address them Equitable Access to Care = measures of access to high-value health care services, including the timeliness and convenience of getting care Equitable High-Quality Clinical Care = measures of clinical care process and outcomes, including prevention and management of chronic disease Equitable Experience of Care = member-reported measures of health care experience Equitable Structures of Care = measures that assess an organization's culture and system of care for meeting the needs of individuals from diverse backgrounds and lived experiences Overall Well-Being = self-reported survey metrics of physical and mental health and overall well-being	**Equity/disparities:** The entire framework is centered on and aimed to address health equity. **Context:** N/A	2010 NASEM framework is focused on healthcare in general and just includes a component of equity. **Policy levers:** To develop the framework, authors examining public policy statements, among other resources. **Available measures:** Equitable social interventions: social need screening and intervention; screening for social drivers of health; screen positive rate for social drivers of health Equitable access to care: child and adolescent well-care visits; follow-up after hospitalization for mental illness; prenatal and postpartum care; getting care quickly Equitable high-quality clinical care: depression screening and follow-up for adolescents and adults; hemoglobin A1c control for patients with diabetes--HBA1C poor control (>9%); controlling high blood pressure; breast cancer screening; colorectal cancer screening Equitable experience of care: discrimination in medical settings; how well doctors communicate composite; health plan customer service Equitable structures of care: race/ethnicity diversity of membership; language diversity of membership Overall well-being: Cantril's Ladder; physical health rating in last 30 days; mental health rating in last 30 days; physical or mental health as a barrier to usual activities in last 30 days	framework was further developed by engaging with stakeholders including representatives from state Medicaid agencies, Medicaid managed care organizations, community-based organizations, patients and patient advocates, researchers, and others **Source/Endorsements:** Yes NCQA, California Health Care Foundation **Stakeholder engagement:** Yes Authors engaged with representatives from state Medicaid agencies, Medicaid managed care organizations, community-based organizations, patients and patient advocates, researchers, and others. **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

Nerenz, 1993[186] **Name:** N/A US **Link:** https://www.sciencedirect.com/science/article/abs/pii/S1070324116300384?via%3Dihub	**Type of care:** Quality of care health care system performance **Setting:** Healthcare **Population:** General population **Intended use:** Address health care system measurement and performance **Defined:** Tier 1: Population health = general health index (SF-36); prevention index Community benefit = proportion of system expenses devoted to charity care Quality of care = hospital readmission rate Episode prevention = hospital admissions per member per year; low birthweight incidence Episode characteristics = number of services per episode (for selected diagnoses); hospital days per 1,000 members Satisfaction = Group Health Association of American member satisfaction survey Efficiency = percent of system expenses for administration Financial performance = profitability; debt-service coverage ratios Tier 2: Population health = disease-specific outcomes of care (using SF-36 and disease-specific function and symptom scales) Quality of care = compliance with standard care patterns (for selected diagnoses) Episode characteristics = redundancy of services provided within episodes	**Components and included domains:** Tier 1: Population health Community benefit Quality of care Episode prevention Episode characteristics Satisfaction Efficiency Financial performance Tier 2: Population health Quality of care Episode characteristics Episode prevention **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks include efficiency. **Differences:** This framework includes Tier 1: Population health; Community benefit; Quality of care; Episode prevention; Episode characteristics; Satisfaction; Efficiency; Financial performance; Tier 2: Population health; Quality of care; Episode characteristics; Episode prevention, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** N/A	**Process development:** In 1991, authors proposed a conceptual framework and 91 specific quantitative performance indicators. In Phase I (1992), 18 participating systems were survey to identify the availability of individual data elements. The result of this process was a list of 33 indicators that were deem feasible for a first round of data collection and analysis--the necessary data elements either were readily available or could be made available with minimal additional effort and expense. Further consideration narrowed the list down to 12 indicators, for which 23 participant systems starting collecting data in 1993 (Phase II). The main objective of Phase II is to test, refine, and assess the validity of this core set of indicators, which can service as the starting point for an ongoing performance measure system. Anticipated possible users for CRISP data include accreditation and regulatory agencies, large purchasers, consumers, clinicians, and system managers and boards/chief executive officers. **Source/Endorsements:** No Suggested by authors under CRISP project **Stakeholder engagement:** Yes Each participating organization completed an initial survey to describe its organization makeup and it structure of clinical and financial data;

	Episode prevention = frequency of preventable acute episodes within chronic conditions (emergency room visits for patients with asthma); illness-based medical care episodes per member per year; percentage of new breast cancer cases classified as "advanced"			consortium members received a formal proposal to collect data on the set of 12 Tier I indicators, with data collection to continue for 18 months **Evidence-based:** Empirically based **Defined population:** No (target unclear) **Validity testing status:** Tested Tested and assessed validity of core set of indicators in phase II of the CRISP project
NHS, 1999[188] NHS, 1998[187] **Name:** NHS Performance Assessment Framework UK **Link:** https://webarchive.nationalarchives.gov.uk/ukgwa/20091106105113/http:/www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4009190	**Type of care:** Quality of care **Setting:** Healthcare **Population:** UK population **Intended use:** To assess healthcare performance, focused on results achieved by the NHS in a way which is meaningful to the public and patients, to health care professionals and to NHS managers **Defined:** Health improvement = to reflect the overarching aim of improving the general health of the population, which is influence by many factors, reaching well beyond the NHS Fair access = to recognise that the NHS's contribution must begin by offering fair access to health services in relation to people's needs, irrespective of geography, socio-economic group, ethnicity, age or sex Effective delivery of appropriate healthcare = to recognise that fair access must be to care that is effective, appropriate and timely, and complies with agreed standards	**Components and included domains:** Health improvement Health outcomes of NHS care Patient/carer experience Efficiency Effective delivery of appropriate healthcare Fair access **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework, however the domain 'fair access' is related to equity. **Context:** Local cancer services, mental health services, learning disability services, and services for the elderly; the development of the Health Improvement Programme.	**Similarities:** Both frameworks address healthcare, and include access, effectiveness, and efficiency; timeliness is include in the effective component in the NHS framework. **Differences:** The NHS framework includes health outcomes, patient/carer experience, and health improvement, while the 2010 NASEM framework does not. Equity is a cross-cutting dimension of the 2010 NASEM framework, while it is not in the NHS framework. **Policy levers:** N/A **Available measures:** Health improvement: deaths from all causes (for people aged 15-64); deaths from all causes (for people aged 65-74); cancer registrations deaths from malignant neoplasms; deaths from all circulatory diseases; suicide rates; deaths from accidents Fair access: surgery rates; size of inpatient waiting list per head of population (weighted); adults	**Process development:** N/A **Source/Endorsements:** Yes NHS **Stakeholder engagement:** Yes Consultation to revise the framework, and performance indicators for the framework **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to a different context

	Efficiency = the way in which the NHS uses its resources to achieve value for money Patient/carer experience = the way in which patients and their carers view the quality of the treatment and care that they receive, ensuring the NHS is sensitive to individual needs Health outcomes of NHS care = through assessing the direct contribution of NHS care to improvements in overall health, completing the circle back to the overarching goal of improved health		registered with an NHS dentist; children registered with an NHS dentist; early detection of cancer Effective delivery of appropriate health care: disease prevention and health promotion; early detection of cancer; inappropriately used surgery; surgery rates; acute care management; chronic care management; mental health in primary care; cost effective prescribing; discharge from hospital Efficiency: day case rate; length of stay in hospital (case-mix adjusted); unit cost of maternity (adjusted); unit cost of caring for patients in receipt of specialist mental health services (adjusted); generic prescribing Patient/carer experienced of the NHS: patients who wait less than 2 hours for emergency admission (through A&E); patients with operation cancelled for non-medical reasons; delayed discharge from hospital for people aged 75 and over; first outpatient appointments for which patient did not attend; outpatients seen within 13 weeks of GP referral; % of those on waiting list waiting 12 months or more Health outcomes of NHS health care: conceptions below age 16; decayed, missing and filled teeth in five year old children; adverse events/complications of treatment; emergency admissions to hospital for people aged 75 and over; emergency psychiatric re-	

			admission rate; infant deaths; survival rates for breast and cervical cancer; avoidable deaths; in-hospital premature deaths	
Niagara Health, n.d.[190] **Name:** Integrated Quality and Safety Framework Canada **Link:** https://www.niagarahealth.on.ca/files/NiagaraHealthIntegratedQualityandSafetyFramework.pdf	**Type of care:** Quality of care Quality and Safety Framework **Setting:** Healthcare **Population:** Niagara Health patients **Intended use:** Guide, direct and support the continuous and measurable improvements of quality and safety at Niagara Health **Defined:** Drivers = accreditation, quality improvement plan, legislation and government policy, regulatory and legislative, Niagara Health Engagement Network, incidents, enterprise risk management, quality of care reflective reviews, staff and physician engagement, client experience surveys Extraordinary Care = medication reconciliation, patient flow, falls, physician transfer of care, pressure ulcers Extraordinary Innovation = integrated comprehensive care Extraordinary Teams = healthy teams Extraordinary Future = clinical utilization, health equity impact Outcomes = extraordinary care, extraordinary teams, extraordinary future, extraordinary innovation Safe = continue to improve our practice and learn from our challenges to avoid harm	**Components and included domains:** Drivers Extraordinary care Extraordinary innovation Extraordinary teams Extraordinary future Outcomes Patient and community centered Safe Effective Accessible Team focused Efficient **Equity/disparities:** Equity is a part of the extraordinary future component of the framework. **Context:** Healthcare	**Similarities:** Effectiveness, safety, efficiency, accessibility, patient and community centered, and equity were all considered in both frameworks. Healthcare was the focus of both frameworks. **Differences:** The way that the components are organized in both figures are different. Patient safety culture is at the center of the Niagara Health framework, while equity and value are the crosscutting dimensions of the 2010 NASEM framework. **Policy levers:** Authors noted that a health equity strategy would strengthen patient-centeredness through the integration of a health equity lens into the policies and (procedures, guidelines, programs, and practice). **Available measures:** Medication reconciliation: maintain compliance rates at admission and discharge We Round (pressure ulcers): decrease number of facility acquired pressure ulcers (stage 3 and above) We Round (falls): decrease number of inpatient falls across units (level 3 and above) Senior friendly hospital: execution of the committee's goals and objectives	**Process development:** Literature review of scientific and non-scientific literature to understand if there were any shifts in the 'domains' of quality; environmental scan - reached out to other hospitals across Canada to review their frameworks to understand how they advanced their quality agendas; asking physician, staff, patients and families about what constituted a 'quality care experience' and other questions; looking at their Patient Safety Culture Survey to tap into how staff and physicians felt about their culture of safety; understand what the system is asking of them by looking at what was current in the healthcare system (e.g., Ontario Health Agency) and what they needed to focus on to ensure a healthier region with their partners; and aligning their work with the strategic plan to see the impactful work they were already focusing on and how to ensure their momentum and efforts were captured in the framework. **Source/Endorsements:** Yes Niagara Health **Stakeholder engagement:** Yes Visiting all of Niagara Health's sites and services, listening and talking to over 1,000 in the community, and integrating all

	Accessible = focus on reducing the time patients and families wait for services Patient and Community Centered = partner with community, patients and families to provide care that is respectful, responsive and inclusive of preference, needs and values Team Focused = provide support to each other in working relationships that allows for the best possible care and outcome to occur for patients and families Effective = provide care that is evidence based and standardized across our teams Efficient = standardize and create reliable processes to ensure an optimal care experience and work environment		Physical transfer of care: decrease the number of patient safety incident levels 3 and above Patient flow: reduce the length of stay in the emergency department for admitted patients measuring the 90th percentile Integrated comprehensive care: % decrease visits to ED/UCC for patients enrolled in ICC program; % decrease overall readmission following ICC enrollment; % reduction in number of days for acute length of stay for ICC patients with COPD and CHF I-Equip: Number of initiatives per year Healthy teams: Achieve or exceed community hospital average staff engagement scores; Sustain or exceed community hospital average physician engagement scores Be Well: Reduce sick time using the LHIN as a comparator; Reduce the number of preventable workplace injury rate (no lost time); Reduce the number of preventable workplace injury rate (lost time) Unit based teams: increase the number of ideas to be implemented annually Extraordinary U: achieve satisfaction rating of each event and program using a Likert scale; increase the pre/post knowledge of participants post session Clinical utilization: Implementation of standardized work across all professions;	Niagara Health's surveys to understand what mattered **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) Niagara Health patients **Validity testing status:** Not tested Not reported

			creating and monitoring of an accountability framework for standard work; creation of a centralized intake structure; creation of a triage decision tool and provision of education for staff Electronic medical record: Develop a HIS governance structure; Validate HIS scope, current and future state of the project; % of developed processes to identify, review and approve HIS benefits Health equity impact: creation of a health equity strategy	
NIMHD, 2017[183] Morgan, 2022[173]; Alvidrez, Alvidrez[98] **Name:** National Institute on Minority Health and Health Disparities Research Framework US **Link:** https://www.nimhd.nih.gov/docs/research_framework/research-framework-slide.pdf	**Type of care:** Disparities, equity, SDOH Disparities, quality of care 1 component **Setting:** Research and practice **Population:** Minority populations **Intended use:** To serve as a vehicle for encouraging NIMHD- and NIH-supported research that addresses the complex and multi-faceted nature of minority health and health disparities.To reflect interconnected nature of human, animal, and environmental health; help researc **Defined:** Biological=biological vulnerability and mechanisms; caregiver-child interaction, family microbiome; community illness, exposure, herd immunity; sanitation, immunization, pathogen exposure Behavioral=Health behaviors, coping strategies; family functioning, school/work	**Components and included domains:** Domains of influence: biological, behavioral, physical/built environment, sociocultural environment, health care system Levels of influence: individual, interpersonal, community, societal **Equity/disparities:** The framework is centered on the understanding and promotion of minority health and the understanding and reduction of health disparities. **Context:** Mental health disparities, vaccine hesitancy, sexual and gender minority health disparities	**Similarities:** The framework/domains include the health care system, equity or disparities, individual patient and family, and access. **Differences:** The NIMHD framework addresses health care at four levels: individual, interpersonal, community, and societal, while the 2010 NASEM framework doesn't specify different levels/ addresses health care in general. The 2010 NASEM framework specifies different types of care (preventive care, acute treatment, chronic condition management), while the NIMHD framework does not. The NIMHD framework specifies various components of the health care system (insurance coverage, health care policies and law, etc.), while the 2010 NASEM framework simply indicates "health systems infrastructure capabilities". The 2010 NASEM framework	**Process development:** By adding two new levels of influence - interspecies and planetary - to the NIMHD research framework, and making use of the One Health approach to thinking about the emergence and prevention of disease; the authors considered the importance of merging aspects of environmental health with health equity, citing that studies increasingly show that biological, cultural and environmental factors - and interactions between these factors - are all relevant to research into health disparities[173] **Source/Endorsements:** Yes National Institute on Minority Health and Health Disparities **Stakeholder engagement:** Unclear **Evidence-based:** Unclear **Defined population:** Yes (framework target described in

	functioning; community functioning; policies and laws Physical/built environment=Personal environment; household environment, school/work environment; community environment, community resources; societal structure Sociocultural environment=sociodemographics, limited english, cultural identity, response to discrimination; social networks, family/peer norms; interpersonal discrimination; community norms, local structural, discrimination; social norms, societal structure, discrimination Health care system=Insurance coverage, health literacy, treatment preferences; patient-clinician relationship, medical decision-making; availability of services, safety net services; quality of care, health care policies		includes timeliness and efficiency, while the NIMHD framework does not. **Policy levers:** Policies and laws are a behavioral domain of influence at the societal level on health disparities and minority health. Health care policies are a health care system domain of influence at the societal level on minority health and health disparities. **Available measures:** N/A	detail) It's clear the framework focused on minority populations. **Validity testing status:** Tested Applied in different contexts (e.g., mental health disparities, vaccine hesitancy, sexual and gender minority health disparities)
NQF, 2017[184] **Name:** Domains of health equity measurement US **Link:** https://www.qualityforum.org/Publications/2017/09/A_Roadmap_for_Promoting_Health_Equity_and_Eliminating_Disparities__The_Four_I_s_for_Health_Equity.aspx	**Type of care:** Disparities, equity, SDOH health equity **Setting:** Population health **Population:** US population **Intended use:** To serve as framework for health equity measurement **Defined:** Health equity = N/A Access to care = availability; accessibility; affordability; convenience High-quality care = person- and family-centeredness; continuous improvements across clinical structure, process, and outcome	**Components and included domains:** Health equity Access to care High-quality care Structure for equity Culture for equity Partnerships and collaboration **Equity/disparities:** The framework is centered on measuring health equity. **Context:** N/A	**Similarities:** Both frameworks include equity, access to care, safety, and patient/family centeredness. **Differences:** This framework is centered on measuring health equity and includes several equity domains, while the 2010 NASEM framework addresses healthcare delivery more broadly and includes equity as a cross-cutting dimension. **Policy levers:** Promotion and advocacy of public and private policies that advance equity are subdomains of the framework. The National Quality Forum	**Process development:** The National Quality Forum (NQF) convened a multistakeholder Committee, with funding from the U.S. Department of Health and Human Services (HHS), to provide recommendations on how performance measurement and its associated policy levers can be used to reduce disparities in health and healthcare. There were three phases of the project: a review of the evidence that describes disparities in health and healthcare outcomes; a review of interventions that have been effective in reducing disparities;

	performance measures stratified by social risk factors; use of effective interventions to reduce disparities in healthcare quality Structure for equity = capacity and resources to promote equity; collection of data to monitor the outcomes of individuals with social risk factors; population health management; systematic community needs assessment; policies and procedures that advance equity; transparency, public reporting, and accountability for efforts to advance equity Culture for equity = equity is high priority; safe and accessible environments for individuals from diverse backgrounds; cultural competency; advocacy for public and private policies to advance equity Partnerships and collaboration = collaboration across health and non health sectors; community and health system linkages; build and sustain social capital and social inclusion; promotion of public and private policies that advance equity		(NQF) convened a multistakeholder Committee, with funding from the U.S. Department of Health and Human Services (HHS), to provide recommendations on how performance measurement and its associated policy levers can be used to reduce disparities in health and healthcare. **Available measures:** High-quality care = person- and family-centeredness; continuous improvements across clinical structure, process, and outcome performance measures stratified by social risk factors; use of effective interventions to reduce disparities in healthcare quality Structure for equity = capacity and resources to promote equity; collection of data to monitor the outcomes of individuals with social risk factors; population health management; systematic community needs assessment; policies and procedures that advance equity; transparency, public reporting, and accountability for efforts to advance equity Culture for equity = equity is high priority; safe and accessible environments for individuals from diverse backgrounds; cultural competency; advocacy for public and private policies to advance equity	and an environmental scan of performance measures and assessment of gaps in measures that can be used to assess the extent to which stakeholders are deploying effective interventions to reduce disparities. **Source/Endorsements:** Yes NQF **Stakeholder engagement:** Yes The National Quality Forum (NQF) convened a multistakeholder Committee, with funding from the U.S. Department of Health and Human Services (HHS), to provide recommendations on how performance measurement and its associated policy levers can be used to reduce disparities in health and healthcare. **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this model has been tested empirically

			Partnerships and collaboration = collaboration across health and non health sectors; community and health system linkages; build and sustain social capital and social inclusion; promotion of public and private policies that advance equity	
NQMC, n.d.[191] **Name:** NQMC Measure Domain Framework US **Link:** https://www.ahrq.gov/gam/summaries/domain-framework/index.html	**Type of care:** Quality of care Both quality of care and population health **Setting:** Healthcare and population health **Population:** General population **Intended use:** Organize the domains used to classify measures in the NQMC **Defined:** Clinical quality measures = process, access, outcome, structure, patient experience Related healthcare delivery measures = user-enrollee health state, management, use of services, cost, Clinical efficiency measures = efficiency Population health quality measures = population process, population access, population outcome, population structure, population experience Related population health measures = population health state, population management, population use of services, population cost, population health knowledge, social determinants of health, environment Population efficiency measures = population efficiency	**Components and included domains:** Healthcare delivery measures: clinical quality measures, related healthcare delivery measures, clinical efficiency measures Population health measures: population health quality measures, related population health measures, population efficiency measures **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks consider access and efficiency. **Differences:** There are no other overlapping components other than access and efficiency. The NQMC framework addresses measures related to health which consists of both healthcare delivery and population health, while the 2010 NASEM framework addresses healthcare delivery only. **Policy levers:** N/A **Available measures:** N/A	**Process development:** N/A **Source/Endorsements:** Yes AHRQ **Stakeholder engagement:** Unclear Not reported **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically

NQS, 2017[9] **Name:** National Quality Strategy US **Link:** https://www.ahrq.gov/sites/default/files/wysiwyg/NQS_overview_slides-2017.pdf	**Type of care:** Quality of care **Setting:** Healthcare **Population:** US **Intended use:** To serve as a strategy for improving health and health care quality **Defined:** Healthy People: Improve the health of the U.S. population by supporting proven interventions to address behavioral, social, and environmental determinants of health Better Care: Improve overall quality by making health care more patient-centered, reliable, accessible, and safe Affordable Care: Reduce the cost of quality health care for individuals, families, employers, and government	**Components and included domains:** Individuals, family members, employers, communities, payers, providers Health information technology Consumer incentives and benefit designs Innovation and diffusion Certification, accreditation, and regulation Public reporting Learning and technical assistance Measurement and feedback Workforce development Payment Patient safety Person- and family-centered care Prevention and treatment of leading causes of morbidity and mortality Affordable care Health and well-being Effective communication and care coordination Healthy people Better care **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks address healthcare delivery, and includes the domains safety, care coordination, patient-/family-centeredness, health systems infrastructure capabilities, and access. **Differences:** The NQS framework serves as a strategy for improving health and healthcare and includes numerous other domains not in the 2010 NASEM framework, while the 2010 NASEM framework addresses healthcare delivery. **Policy levers:** N/A **Available measures:** N/A	**Process development:** Not reported **Source/Endorsements:** Yes National Quality Strategy **Stakeholder engagement:** Unclear Not reported **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically
Nuckols, 2013[192] **Name:** Quality-Cost Framework US **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3696200/	**Type of care:** Quality of care Quality-cost **Setting:** Healthcare **Population:** US population **Intended use:** To explain how variations in health-related quality can create variations in health care and other economic costs, and facilitate the design and evaluation of empirical	**Components and included domains:** External factors Structure Process Outcome **Equity/disparities:** Equity and disparities are not explicitly addressed in this framework. **Context:** N/A	**Similarities:** Both frameworks addresses healthcare delivery, and includes the components value (i.e., economic value), effectiveness (i.e., outcome), and health system infrastructure capability (i.e., structure). **Differences:** This framework addresses healthcare quality effects on cost specifically, while the 2010 NASEM framework addresses	**Process development:** Authors drew on the work of Donabedian, the RAND/UCLA Appropriateness Method, reports by the Institute of Medicine, and other sources. More specific information were not provided. **Source/Endorsements:** No Suggested by authors

	studies examining how quality influence costs **Defined:** External factors = community characteristics; demographic characteristics; specific clinical circumstances; total health care costs for population; circumstance-specific health care costs Structure = general structural characteristics; circumstance-specific characteristics; quality improvement systems; structure-related health care costs (cost, circumstance-specific characteristics; cost, quality improvement systems) Process = appropriateness of care (necessary, appropriate, uncertain/unhelpful, or inappropriate); medical errors; process-related health care costs (cost, necessary; cost, appropriate; uncertain/unhelpful; cost, inappropriate; cost, medical errors) Outcome = diseases and conditions (disease progression, complications of disease, complications of care); health status; functional status; length and quality of life; outcome-related health care costs (cost, disease progression; cost, disease complications; cost, care complications); functional-decrement costs; economic value, preserving length and quality of life		healthcare delivery more generally. This framework includes cost components, and follows the Donabedian "structure, process, outcome" design, while the 2010 NASEM framework does not. This framework also includes SDOH (i.e. community characteristics, demographic characteristics, circumstance-specific characteristics), while the 2010 NASEM framework does not. **Policy levers:** Several new policies have been designed to spur improvements in quality and reduce health care costs in the United States, such as establishing accountable care organizations, incentives for adopting health information technology, and penalties for hospital- acquired complications. When policymakers, researchers, and other decision makers work on a policy issue like this one, a shared framework can create a common understanding of the issues and facilitate the design of analyses. **Available measures:** N/A	**Stakeholder engagement:** No Suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically
Nundy, 2022[193] **Name:** The Quintuple Aim for Health Care Improvement	**Type of care:** Other Healthcare improvement and Advance health equity	**Components and included domains:** Improve population health	**Similarities:** Both frameworks include equity in some way.	**Process development:** Not reported

US **Link:** https://jamanetwork.com/journals/jama/article-abstract/2788483	**Setting:** Healthcare **Population:** General population with a focus on individuals and communities with disparities **Intended use:** To improve healthcare and advance health equity **Defined:** N/A	Enhance the care experience Reduce costs Improve the work life of health care providers Pursuit of health equity, purposefully including with all improvement and innovation efforts a focus on individuals who need them most **Equity/disparities:** The focus of the quintuple aim is to achieve health equity. **Context:** N/A	**Differences:** This framework is focused on healthcare improvement with an emphasis on achieving health equity, while the 2010 NASEM framework addresses healthcare delivery more broadly. **Policy levers:** Accordingly, health care leaders and practitioners must consider primary measures of health equity, such as measures of the underlying causes of inequities (eg, racism, discrimination, mistrust, food insecurity, housing instability), in improvement efforts. Policy makers should set health equity standards and design effective economic supports to help achieve them. **Available measures:** N/A	**Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this model has been tested empirically
Ontario Health Quality Council, 2007[196] **Name:** N/A Canada **Link:** https://www.hqontario.ca/portals/0/Documents/pr/qmonitor-full-report-2007-en.pdf	**Type of care:** Quality of care **Setting:** Health system **Population:** Ontario, Canada **Intended use:** To help measure Ontario's health system performance **Defined:** Accessible = People should be able to get the right care at the right time in the right setting by the right health-care provider Effective = People should receive care that works and is based on the best available scientific information Safe = People should not be harmed by an accident or mistakes when they receive care	**Components and included domains:** Accessible Effective Safe Patient-centered Equitable Efficient Appropriately resourced Integrated Focused on population health **Equity/disparities:** Equity is one of the dimensions of the framework. **Context:** Aboriginal Ontarians to assess how well the health system performs for them.	**Similarities:** Both frameworks address healthcare, and include access, effectiveness, safety, patient-centeredness, equity, efficiency, health system infrastructure capabilities or resources, and care coordination or integration. **Differences:** The Ontario framework includes a component 'focused on population health', that the 2010 NASEM framework does not. Equity is not a crosscutting dimension in the Ontario framework, while it is in the 2010 NASEM framework. **Policy levers:** Many of the data and research used to develop the framework dimensions were	**Process development:** Work started by asking experts what attributes, or characteristics, a high-performinghealth system should have, followed by a town-hall meetings and focus groups across the province to find out what people in Ontario expect from their health system, and how they would define the features of a high-performance system. After that, the characteristics the public meetings had endorsed were tested, e.g., their definitions to ensure they were clear and relevant. **Source/Endorsements:** Yes Ontario Health Quality Council

	Patient-centered = Health-care providers should offer services in a way that is sensitive to an individual's needs and preferences Equitable = People should get the same quality of care regardless of who they are and where they live Efficient = The health system should continually look for ways to reduce waste, including waste of supplies, equipment, time, ideas and information Appropriately resourced = The health system should have enough qualified providers, funding, information, equipment, supplies and facilities to look after people's health needs Integrated = All parts of the health system should be organized, connected and work with one another to provide high-quality care Focused on population health = The health system should work to prevent sickness and improve the health of the people of Ontario		policy-based, specifically based on how Ontario's publicly funded health system is performing. **Available measures:** A wide range of measures were provided ranging from unplanned readmission to hospital, bedsores, cancer, stroke, heart attack, telemedicine, surgery, and more.	**Stakeholder engagement:** Yes Input on developing the framework **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied in different context
Pai, 2016[197] **Name:** Conceptual framework for patient-perceived hospital service quality Unclear/Not reported **Link:** https://www.emerald.com/insight/content/doi/10.1108/IJHCQA-05-2015-0069/full/html	**Type of care:** Quality of care **Setting:** Hospital **Population:** General population (not specified) **Intended use:** To help measure patient-perceived hospital service quality **Defined:** N/A	**Components and included domains:** Healthscape Personnel Hospital image Trustworthiness Clinical care process: service quality, customer satisfaction, behavioral intentions Communication Relationship Personalization Administrative procedure	**Similarities:** Both frameworks include health system infrastructure capabilities (or personnel) in some way. **Differences:** This framework is focused on hospital service as perceived by patients, while the 2010 NASEM framework addresses healthcare delivery broadly. There are few overlapping components between the two frameworks. **Policy levers:** N/A	**Process development:** Literature review was conducted. An instrument was developed and is based on a method adopted by Badri et al., (2005) who designed a patient satisfaction instrument. The procedure includes generating items for assessing outpatient/inpatient service quality through an extensive literature review and grouping similar items. Authors had initially classified them into ten dimensions that included

		Equity/disparities: Equity and disparities are not explicitly addressed in this framework. **Context:** N/A	**Available measures:** Healthscape: 1. Modern and up-to-date equipment (e.g., CT and MRI, patient information and billing) to serve patients more effectively. 2. Physical facilities are visually appealing. 3. Adequacy of different facilities (e.g., wards, beds, OT, ICU). 4. Cleanliness (Clean toilets, clean rooms and wards). 5. Infection-free environment/treatment provided by the hospital. 6. Hospital staff follow adequate hygienic care and procedures (e.g. wearing gloves). 7. The employees of hospital are dressed neatly. 8. Drugs availability. 9. Comfortable ambient conditions with proper lighting. 10. The hospital has an appealing atmosphere. 11. The hospital has clean rooms without foul smell. 12. There are sufficient waiting areas for the patients and patient party. 13. It is easy to find my way in the hospital. 14. It is easy to find care facilities (lab, Doctor's office). 15. It is easy to use the amenities (public telephone, cafeteria, etc.,) in the hospital. Personnel: 1. Courtesy shown by hospital administrative staff towards patient and patient party. 2. Doctor and nurse availability.	support (three items), which measured contribution to society. Each dimension defined an important service quality aspect resulting in a final instrument for measuring hospital service quality. To establish content validity, authors adopted the Badri et al. (2008) method; i.e., items were critically and extensively reviewed by academics and students. after reclassifying certain items, they were subjected to pre-test involving experts. Following the pre-test, the questionnaire was distributed to patients who were asked to rate all questionnaire items by assigning a score on a ten-point scale (1, not relevant at all and 10, very relevant) and that items were quite relevant or very relevant to the scale to which they were assigned, thus establishing content validity (Badri et al., 2008). Additionally, face validity was tested by sending the refined questionnaire to several medical consultants asking for their views on the instrument (Badri et al., 2008). Later, face validity was assessed by asking other medical professionals for views on the instrument. The questionnaire was deemed a useful service quality measure and covered important aspects. **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** Yes items were critically and extensively reviewed by

			3. Doctors are competent and skilful. 4. Knowledgeable nurses. 5. Paramedical and support staff competency and skill. 6. The doctors are friendly and caring and understands patient's feelings and needs. 7. Doctors talked to me frankly and politely. 8. Nursing staff give prompt and timely attention. 9. Nursing staff are polite and well-mannered. 10. Staff at the hospital are polite. 11. Doctors are professional. Hospital image: 1. Good doctors are available in the hospital. 2. Hospital has a positive reputation. 3. Sincerity, honesty and ethics when providing medical services. 4. The hospital runs various programs for patients to support different societal sections. 5. The hospital provides medical services with nominal cost to the needy patients. Trustworthiness: 1. Patient privacy and confidentiality are maintained by the hospital. 2. Hospital provided services as promised and on time. 3. Equal treatment to all. 4. Confidence in the doctor who treated me in hospital. 5. The hospital provides patients with services beyond medical treatment. Clinical care process:	academics and students; Following the pre-test, the questionnaire was distributed to patients who were asked to rate all questionnaire items by assigning a score on a ten-point scale (1, not relevant at all and 10, very relevant) and that items were quite relevant or very relevant to the scale to which they were assigned, thus establishing content validity **Evidence-based:** Unclear **Defined population:** No (target unclear) **Validity testing status:** Not tested No indication that this has been tested empirically

			1. Faultless assessment of health conditions by doctors. 2. Explanation provided by doctor about health status, medical tests. 3. Description offered by the doctor about treatment procedures and outcomes. 4. Medical advice and instructions provided by doctor. 5. Diagnosis is only made after careful examination. 6. Doctors spent enough time examining the patient. Communication: 1. Doctor provide information quickly by to patient. 2. My family was told what they needed to know. 3. Hospital provided adequate information about my illness/treatment(s). 4. Information can be easily obtained. 5. Obtaining information from hospital administrative personnel (e.g., admission, treatment, discharge) is easy. 6. Extent to which doctors answer patient's questions and explain treatment that you could understand. 7. I feel good about the interaction I have with the doctor at the hospital. 8. I feel good about the interaction I have with the nurses at the hospital. 9. I feel good about the interaction I have with other staff at the hospital. Relationship: 1. I have built a close relationship with some staff at the hospital.	

			2. I have built a close relationship with the doctor at the hospital. 3. I have built a close relationship with the nurses at the hospital. Personalization: 1. I always get personalized attention from the staff at the hospital. 2. Hospital staff treat me as a human being and not just a patient. 3. The doctor calls me by my name while addressing me. Administrative procedures: 1. Waiting time to consult the doctors is minimal. 2. Provides right patient services the first time, every time. 3. Reasonable waiting time spent for diagnostic test and treatments. 4. Time between successive processes is minimum. 5. The process for setting up the appointment was simple and easy. 6. Appointment at the hospital runs on time. 7. Hospital records and documentation are error free. 8. The interaction among the departments within the hospital is well managed. 9. I believe the hospital is well-managed.	
Pap, 2022[198] **Name:** N/A Australia **Link:** https://pubmed.ncbi.nlm.nih.gov/34289963/	**Type of care:** Quality of care Prehospital care quality **Setting:** Healthcare **Population:** Australian population	**Components and included domains:** Access Safety Effectiveness	**Similarities:** Both frameworks include equity, safety, effectiveness, access, patient-centeredness, efficiency, timeliness, and continuity of care.	**Process development:** A scoping review was conducted to map the attributes of 'quality' in the context of prehospital care and to establish a list of internationally existing prehospital care QIs. The

	Intended use: To address prehospital care quality **Defined:** Access = structure: availability, accessibility, equity; process: availability, accessibility, continuity/sustainability, equity, timeliness; outcome: health status, user evaluation (includes acceptability) Safety = structure: safety (provider and patient); process: safety (provider and patient); outcome: absence of harm, provider evaluation, user evaluation (includes acceptability) Effectiveness = structure: appropriateness, capability, clinical effectiveness, cost-effectiveness, efficiency, equity; process: appropriateness, capability, caring, clinical effectiveness, continuity/sustainability, cost-effectiveness, efficiency, equity, interpersonal effectiveness, responsiveness, patient-centeredness, well led; outcome: health status, financial evaluation, user evaluation (includes acceptability)	**Equity/disparities:** Equity is a subdimension of access and effectiveness. **Context:** N/A	**Differences:** Equity is a cross-cutting dimension in the 2010 NASEM framework, while it is a sub dimension in the Australian framework. The Australian framework addresses prehospital quality, while the 2010 NASEM framework addresses health system delivery broadly. The Australian framework includes patient experience more directly, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** General time intervals: In an urban setting, an ambulance arrives on scene of an emergency incident within 4 minutes of the service receiving the call. In an urban setting, an ambulance arrives on scene of an urgent incident within 20 minutes of the service receiving the call. In an urban setting, an ambulance arrives on scene of a non-emergency incident within 30 minutes of the service receiving the call. State//Territory-wide, an ambulance arrives on scene of an emergency incident within 4 minutes of the service receiving the call. State//Territory-wide, an ambulance arrives on scene of an urgent incident within 20 minutes of the service receiving the call. State//Territory-wide, an ambulance arrives on scene of	review employed the JBI methodology for conducting scoping reviews. In total, the scoping review identified 17 attributes of prehospital care quality. To aggregate the identified attributes into principle dimensions of quality, the authors adapted a framework previously proposed by Campbell, et al. and used in the specific context of prehospital care by Owen. Attributes relating to safety, both of the patient and the healthcare provider, were deemed to be of such importance and arguably distinctive to justify subsuming them. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes Australian prehospital care experts participated in modified RAND/UCLA appropriateness method. Rapid reviews were performed for each QI to produce evidence summaries for consideration by the panellists. **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication this has been tested empirically

			a non-emergency incident within 60 minutes of the service receiving the call. An ambulance departs the scene within 20 minutes of arriving on scene, unless unable or impractical to do so for safety or operational reasons. An ambulance crew hands over the patient to hospital staff and becomes available for the next call within 20 minutes. Patient safety: The ambulance service has a dedicated patient safety incident reporting system. The ambulance service has a guideline that defines the categories of patients that should be left in the care of an appropriate healthcare professional i.e. should not be left unattended. A patient who is not conveyed to a healthcare facility has been risk-assessed for likelihood of deterioration. The ambulance service has policy that describes the treat-and-refer arrangements for patients not conveyed to a health care facility. For a patient who was treated and discharge on scene, there is no need to call back the ambulance service for the same complaint within a 24-hour period. For a patient who was treated and discharge on scene, there is no need for hospital admission for the same complaint within a 24-hour period.	

			Patient experience and satisfaction: The ambulance service collects and analyses quantitative and qualitative data pertaining to patient experience and satisfaction for the purpose of quality improvement. In a patient satisfaction survey, a patient reports that they felt that the length of time they waited to be connected to an ambulance service call taker was much quicker or a little quicker than they thought it would be. In a patient satisfaction survey, a patient reports that they felt that the length of time they waited for an ambulance was much quicker or a little quicker than they thought it would be. In a patient satisfaction survey, a patient reports that they felt that the level of care provided to them by paramedics was very good or good. In a patient satisfaction survey, a patient reports that their level of trust and confidence in paramedics and their ability to provide quality care and treatment was very high or high. In a patient satisfaction survey, a patient reports that they were very satisfied or satisfied with the ambulance services they received in the previous 12 months. In a patient satisfaction survey, a patient reports that the key elements of prehospital care* were delivered. (*Accessibility, response capacity, professionalism, transport	

			conditions, capacity for resolving the situation) The ambulance service collects and analyses quantitative and qualitative data pertaining to complaints for the purpose of quality improvement. Communication and dispatch: A call is assigned an accurate level of urgency and/or dispatch priority. A patient is identified to be in OHCA by the ambulance service call-taker before the first resource arrives on scene. A caller requesting assistance for suspected/confirmed adult cardiac arrest is offered instructions (audio, or video if possible) in chest-compression-only cardiopulmonary resuscitation (CPR). A call with an assigned level or urgency and/or dispatch priority is not downgraded inappropriately. A call categorized as urgent is not held for longer than 20 minutes before the ambulance is dispatched. Resources and resource management: The ambulance service has a policy that defines how many paramedic-staffed ambulances should be in service per 100,000 population. The ambulance service has an evidence-based policy that defines a minimum equipment list for an ambulance. The ambulance service has a policy detailing which resource(s) should respond to each category/type of call.	

			A patient who meets service-defined treat-and-discharge or treat-and-release criteria is not transported. Paramedic health and safety: The ambulance service utilizes a fatigue/sleepiness screening instrument to measure and monitor fatigue in paramedics. The ambulance service schedules paramedics to work shifts shorter than 12 hours in duration. The ambulance service provides access for paramedics to caffeine as a fatigue counter measure. The ambulance service provides opportunity for paramedics to rest and recline while on duty to mitigate fatigue. The ambulance service provides fatigue training to its paramedics. The ambulance service provides mental health programs, including pre-incident preparedness training, to its paramedics. The ambulance service utilizes a post-exposure PTSD screening instrument designed for emergency service personnel to identify PTSD in paramedics. Training, education, and research: The ambulance service has a policy that describes the process for supervision of paramedics in training. The ambulance service staff have access to electronic/online medical education resources.	

			The ambulance service has a dedicated training and education unit. The ambulance service has a dedicated research unit. The ambulance service has a formal collaborative research agreement with a partnering university offering paramedicine programs. The ambulance service has a guideline which details the criteria by which it assesses proposals to conduct research by its staff or in collaboration with external parties. The ambulance service measures and monitors performance against quality indicators related to the effectiveness of paramedicine student field/clinical placements. Other (organizational/system): The ambulance service has arrangements in place enabling paramedics to consult with senior clinical colleagues when treating a patient. The ambulance service has arrangements in place enabling paramedics to consult with specialist mental health professionals when treating a patient with a mental health disorder. The ambulance service has a procedure for managing situations in which a patient refuses care or transportation for the physical effects of self-harm. The ambulance service operates a quality improvement program that includes quality	

			assessment/measurement, control and improvement. A patient with accessible end-of-life care plans is managed in accordance with these plans. Airway management, ventilation and oxygen therapy: A patient with a decreased level of consciousness (Glasgow Coma Score ≤14), has their airway patency assessed. A hypoxemic patient (SpO2 <94%) is administered oxygen, unless contraindicated. A normoxaemic patient (SpO2 ≥94%) is not administered oxygen, unless specifically indicated. A patient who has a supraglottic airway inserted, meets service-defined indications for the airway intervention. In a patient who has a supraglottic airway inserted, the correct position of the supraglottic airway is assessed using an exhaled CO2 detector. A patient who is endotracheally intubated, meets service-defined indications for the procedure. A patient who is intubated, is successfully endotracheally intubated. For an endotracheally intubated patient, the correct position of the endotracheal tube is assessed using an exhaled CO2 detector. A patient who is endotracheally intubated has their pulse oximetry continuously monitored during the procedure. A patient who receives cricothyrotomy, meets service-	

			defined indications for the procedure. A patient who receives cricothyrotomy, has the procedure performed successfully. Out-of-hospital cardiac arrest: An ambulance arrives at an OHCA patient within 4 minutes of the 000-call. Paramedics providing CPR utilize an audio-visual feedback and prompt device for real-time optimization of chest compression quality. For an OHCA patient in a shockable rhythm, the first defibrillation attempt is made as soon as possible and within 2 minutes of arrival at the patient. For an adult OHCA patient, the airway is secured by a supraglottic airway (SGA) or endotracheal tube (ETT). An OHCA patient in refractory ventricular fibrillation/ventricular tachycardia (VF/VT) is administered intravenous/intraosseous amiodarone or lignocaine, unless contraindicated. The receiving hospital receives pre-notification of an OHCA/post-OHCA patient. A patient who was in OHCA has return to spontaneous circulation (ROSC) on arrival at the receiving hospital. A patient who was in OHCA survives to discharge from hospital. A patient who was in OHCA is discharged from hospital with favourable neurological outcome; CPC ≤2 or mRS ≤3.	

			A patient who was in OHCA survives to 30 days from the event. Acute coronary syndrome: The ambulance service has a documented clinical care pathway that details the care and transport it provides to patients with signs and/or symptoms suggestive of ACS. A patient with signs and/or symptoms suggestive of ACS has a 12-lead electrocardiograph (ECG) acquired and interpreted within 10 minutes of arrival on scene. A patient with signs and/or symptoms suggestive of ACS and normoxaemia (SpO2 ≥94%) is not administered supplementary oxygen. A patient with signs and/or symptoms suggestive of ACS is administered aspirin, unless contraindicated. A patient with signs and/or symptoms suggestive of ACS has their pain score assessed before and after treatment. A patient with signs and/or symptoms suggestive of ACS is administered glyceryl trinitrate, unless contraindicated. A patient with acute chest pain suggestive of ACS is administered analgesic agent(s), unless contraindicated. If transport time to a hospital capable of providing primary PCI is ≤30 minutes, a patient with STEMI and within 12 hours of symptom onset is transported directly to that hospital.	

			If transport time to a hospital capable of providing primary PCI is >30 minutes, a patient with STEMI and within 12 hours of symptom onset receives prehospital fibrinolysis. Stroke: A patient with suspected acute stroke is assessed using a validated stroke identification tool†. ((† Los Angeles prehospital stroke screen (LAPSS score), Cincinnati prehospital stroke scale (CPSS), Face Arm Speech Test (FAST), Melbourne Ambulance Stroke Screen (MASS score), Ontario Prehospital Stroke Screening tool (OPSS) or Recognition Of Stroke In the Emergency Room (ROSIER) scale) A patient with suspected acute stroke has their blood glucose level measured. In a patient with suspected acute stroke, it is assessed whether or not they are on anticoagulant therapy. A patient with suspected acute stroke and normoxaemia (SpO2 ≥94%) is not administered supplementary oxygen. In a patient with suspected acute stroke, it is assessed at what time the patient was last known to be without the clinical features of acute stroke. A patient presenting with suspected stroke is transported directly to a hospital capable of performing thrombolysis and/or endovascular thrombectomy.	

			The receiving facility receives notification of a patient experiencing suspected stroke. Asthma: A suspected acute asthma patient has their PEF measured prior to nebulization, unless they are unable to perform the test. A patient with acute asthma has their oxygen saturation level continuously monitored. A patient with acute asthma is given controlled oxygen titrated to maintain an SpO2 level of 94-98%. A patient with acute asthma is administered salbutamol via oxygen-driven nebulizer, unless contraindicated. A patient with acute severe asthma or worse is administered salbutamol and ipratropium bromide via oxygen driven nebulizer, unless contraindicated. A patient with acute severe asthma or worse is administered intravenous/intramuscular hydrocortisone, unless contraindicated. A patient with life-threatening asthma is be administered intramuscular adrenaline, unless contraindicated. The receiving facility receives notification of a patient with life-threatening asthma. A mild acute asthma patient who after treatment is asymptomatic with no dyspnoea and has a PEF higher than the original measurement is prehospitally discharged, unless	

			service-defined risk criteria apply. Trauma: A patient with active external haemorrhage receives haemorrhage control by application of direct pressure, arterial tourniquet and haemostatic dressing as required. A patient with a mechanism of injury and/or other signs/symptoms suggestive of pelvic fracture has a pelvic circumferential compression device (PCCD) applied. A patient with recent (≤3 hours) traumatic injury resulting in ongoing haemorrhage and/or ATC (indicated by a validated and prehospitally applicable prediction tool) receives TXA (1g, intravenously). When attending to a patient suffering neurotrauma or penetrating injury with hemodynamic instability, the ambulance departs the scene within 10 minutes of arriving on scene, unless unable or impractical to do so for safety or operational reasons. A patient is correctly triaged and transported to an appropriate hospital as per agreed trauma system protocol. The receiving hospital receives notification of a major trauma patient as per agreed trauma system protocol. Seizures: A patient with a seizure has their blood glucose level measured.	

			A patient with an active seizure is administered a benzodiazepine by the best available route. Hypoglycemia: A conscious hypoglycaemic patient is administered oral glucose, unless contraindicated. An unconscious hypoglycaemic patient is administered intravenous glucose 10% or intramuscular glucagon, unless contraindicated. A patient who has been administered glucose (oral or intravenous) or glucagon has their blood glucose level checked following administration. A patient who has had a hypoglycaemic episode effectively corrected is prehospitally discharged, unless they are taking oral hypoglycaemic agents (OHA) or other service-defined repeat hypoglycaemic event (RHE) risk criteria apply. Pain management: A patient has their pain intensity measured using the 0-10 verbal numerical rating scale (VNRS). A patient experiencing mild (2-3/10), moderate (4-6/10) or severe (7-10/10) pain is administered analgesic agent(s), unless contraindicated or refused. A patient who is administered analgesic agent(s) reports a reduction in pain to ≤ 3/10 or at least by 3 points. A responsive patient who is administered analgesic agent(s) remains responsive to verbal	

			stimuli, unless anaesthesia is being induced. A responsive patient who is administered analgesic agent(s) does not require airway management or ventilatory support following the administration, unless anaesthesia is being induced. Other (clinical): A patient with suspected paracetamol overdose who presents within four hours of ingestion is administered activated charcoal, unless contraindicated. A patient suspected of opioid overdose who is unconscious or has depressed respiration is administered naloxone (2 mg, intramuscular/intranasal/ intravenous), unless contraindicated. The ambulance service has a policy that defines specific categories of patients for which receiving facilities are to be notified of the patient's arrival.	
Perera, 2013[199] **Name:** Quality framework for primary care New Zealand **Link:** https://www.publish.csiro.au/AH/AH11097	**Type of care:** Quality of care **Setting:** Primary care **Population:** World population **Intended use:** Provide a platform to enable policy makers, primary care practitioners and organisations to plan, maprationalise existing and new quality-improvement activities within the context of day-to-day clinical work **Defined:** Practice environment = "competent" and appropriate setting within which care	**Components and included domains:** Structure: practice environment, operational safety, practice systems, practice and practitioner accreditation, practice protocols, sentinel/adverse events reporting Process: clinical care/technical interventions, practice relationships (internal, external), suitable use and ethical application of knowledge and skills by practitioners Outcome: health status, user appraisal, cost of the service, equity	**Similarities:** Both frameworks include access, effectiveness, and equity in some way. **Differences:** The primary care framework addresses primary care specifically, while the 2010 NASEM framework addresses healthcare delivery broadly. The primary care framework follows a 'structure, process, outcome' design, and includes many components that are not in the 2010 NASEM framework, including practice environment, practice relationships, user	**Process development:** A review of the international and New Zealand literature was conducted on theoretical concepts of healthcare quality, and use of frameworks; a mixed methods approach was utilised to identify quality initiatives underway within primary care, and investigate issues affecting their conduct - this involved: strategic and organisational level key-informant interviews, a national survey of general practices and a series of

	occurs, competence of the professional providing the care Operational safety = organizational and practice supporting activity and resources, functional interface between practitioner, management, resources, technology Practice relationships = staff, patients, community, other organizations Measures of effectiveness/performance = demography, case-mix, severity, government policies, behavior of patients and families, other [Other domains were not defined]	Measures of access Measures of effectiveness/performance **Equity/disparities:** Equity is an outcome in the framework. **Context:** The Royal New Zealand College of General Practitioners' Aiming for Excellence, the foundation standard for New Zealand General Practice	appraisal, health status, and more. **Policy levers:** The framework was to be based on both theoretical and empirical data, and provide a platform to enable policy makers, primary care practitioners and organisations to plan, map and rationalise existing and new quality-improvement activities with- in the context of day-to-day clinical work. **Available measures:** N/A	facilitated meetings with practice teams **Source/Endorsements:** Yes Royal New Zealand College of General Practitioners **Stakeholder engagement:** Yes strategic and organisa- tional level key-informant interviews, a national survey of general practices and a series of facilitated meetings with practice teams to get feedback on model development **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to a different context
Poker, 2004[1] **Name:** National Healthcare Disparities Report Conceptual Framework US **Link:** https://journals.lww.com/jncqjournal/abstract/2004/10000/the_first_national_reports_on_united_states.5.aspx	**Type of care:** Disparities, equity, SDOH Disparities **Setting:** Healthcare **Population:** US **Intended use:** To serve as a conceptual framework that addresses healthcare and healthcare disparities **Defined:** N/A	**Components and included domains:** Access to care: entry barriers, structural barriers, cultural barriers, use, cost Quality of care: effectiveness, safety, timeliness, patient centeredness Staying healthy Getting better Living with illness or disability Coping with the end of life Health status/Healthcare need Disparity **Equity/disparities:** Disparity seems to be a crosscutting dimension along the framework domains of staying healthy, getting better, living with illness or disability, and coping with the end of life, quality of care, and access to care. **Context:** It has been used as the National Healthcare	**Similarities:** Both frameworks include the domains access, effectiveness, safety, timeliness, and patient centeredness, and addresses healthcare delivery. **Differences:** The NHDR framework focuses on disparities, while the 2010 NASEM framework does not include disparities. The NHDR framework includes the components health status/healthcare need, quality of care, staying healthy, getting better, living with illness or disability, and coping with the end of life, while the 2010 NASEM framework does not. Access to care in the NHDR framework is also broken down into smaller components, while	**Process development:** Not reported **Source/Endorsements:** Yes AHRQ **Stakeholder engagement:** No Developed by an individual **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically

		Disparities Report conceptual framework.	access is not in the 2010 NASEM framework. **Policy levers:** Researchers, practitioners, policy makers, vendors, and consumers require data to be presented and organized in ways they can interpret and use for further dissemination and for improvement endeavors. Policy makers need a customized data breakdown that may affect their unique state and/or locality. The current NHQR/NHDR team is actively pursuing the development of various other products to gear the data more specifically to user needs. **Available measures:** N/A	
Popovich, 1998[200] **Name:** Multidimensional performance measurement model US **Link:** https://pubmed.ncbi.nlm.nih.gov/9529793/	**Type of care:** Quality of care Performance measurement **Setting:** Healthcare **Population:** Not very clear, but seems like general population **Intended use:** Help nursing and other healthcare professionals evaluate their performance (may be used for individual care providers or for entire health care systems) **Defined:** Multisource standards = regulatory, institutional/system, professional Multisource assessment of caregiver = performance Patient care delivery = supervisor, peers, patients, subordinates, customers-internal	**Components and included domains:** Multisource standards Multisource assessment of caregiver Patient care delivery **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks address healthcare delivery. While patient-centeredness is a domain in the 2010 NASEM framework, "patient care delivery" has a central physical placement in the framework figure for the Multidimensional Performance Measurement Model. **Differences:** The Multidimensional Performance Measurement Model focuses on performance measurement, while the 2010 NASEM framework serves more generally as a model of health care delivery. There is not much overlap between the components of both frameworks. The Multidimensional Performance Measurement Model includes patient satisfaction more	**Process development:** Not reported **Source/Endorsements:** No Suggested by author **Stakeholder engagement:** No Suggested by author **Evidence-based:** No **Defined population:** No (target unclear) **Validity testing status:** Not tested No indication that this model has been tested empirically

			explicitly, while the 2010 NASEM framework does not. **Policy levers:** The model includes the domains regulatory standards (i.e. government health care coverage plans, such as Medicare and Medicaid; managed care, such as IPAs, HMOs, PPOs, Department of Health - state and local, OSHA, AHCPR, State Practice Acts, and more). **Available measures:** N/A	
Proctor, 1999[201] **Name:** Developmental framework for performance measurement in primary care UK **Link:** https://pubmed.ncbi.nlm.nih.gov/10724571/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Primary care **Intended use:** To provide an overview of the key focus for standards of process and outcome in primary care **Defined:** Access = appointment times, practice opening hours and the quality of premises. The availability of the GP or the nurse for patients should be monitored, and patients should be aware of what to do and who to contact when the practice was closed Clinical effectiveness = infection control, prescribing, monitoring the interface between primary and secondary care, developing protocols and disease registers, and monitoring the quality of clinical skills Health promotion = cancer screening, childhood immunization targets, implications of "underperforming", community-focused activities	**Components and included domains:** Access Clinical effectiveness Health promotion Service development and innovation Patient experience Cost effectiveness Outcomes **Equity/disparities:** Equity and disparities is not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks address health care, and considers access and effectiveness. **Differences:** The framework by Proctor and Campbell addresses primary care, while the 2010 NASEM framework addresses healthcare delivery broadly. The primary care framework also includes health promotion and service development and innovation, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** N/A	**Process development:** Semi-structured interviews were conducted with study participants. For each participating practice, the aim was to interview a general practitioner, a practice nurse and a practice manager individually. Interview field notes were transcribed in full and entered into a computer qualitative data analysis package, NUD*IST4. In response to the key research questions, data were coded, and themes identified. Participants were asked which aspects of primary care should be identified as key areas for the development of performance indicators. Seven main themes emerged from analysis of their comments. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes Stakeholders were interviewed to get their perceptions of general practitioners, practice nurses and practice managers

	Service development and innovation = N/A Patient experience = patients' views about the service and involving them more in decisions about service delivery; respect, accessibility, communication, explaining problems to patients and options for them, basic communication and listening skills Cost effectiveness = devise some way of measuring efficiency, look at the "value for money" in different practices, which could include comparing staffing levels with their performance on key indicators, not as a means to judge and punish ``poor'' practices, but to identify strategies that work, and adopt them more widely Outcomes = the improvement of patients' general health and improving the way they use the health services			regarding performance measurement in primary care **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically
Profit, 2010[202] **Name:** Theoretical Framework for Measuring Quality of Care US **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2831823/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** General population **Intended use:** To serve as a framework to develop comprehensive, robust, and transparent composite indicators **Defined:** N/A	**Components and included domains:** Health determinants: individual and societal Health system: organization, financing, payment, regulation, persuasion Illness severity Healthcare delivery: safe, effective, efficient, patient centered, timely, equitable; structure, process, outcome Composite measure of quality of health care delivery Health status **Equity/disparities:** Equitable is one of the domains of the	**Similarities:** Both frameworks addresses healthcare delivery generally, and includes the components safe, effective, efficiency, patient centered, timely, equitable, and health systems infrastructure capabilities. **Differences:** This framework includes health determinants, health status, illness severity, and composite measure of quality of health care delivery, while the 2010 NASEM framework does not. This framework's health care delivery component also includes the	**Process development:** Framework was based on the work of Arah et al. (2006), Roberts et al. (2003), the IOM (2001), and Donabedian (1966). Further details on development of framework were not reported. **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** No Suggested by authors **Evidence-based:** Unclear **Defined population:** No (target unclear)

		healthcare delivery component of the framework. **Context:** N/A	domains structure, process, outcome, while the 2010 NASEM framework does not. **Policy levers:** Composite measure of quality of health care delivery can serve as an outcome measure, which can then be used to assess the effect of new health policies or changes in medical care on long-term health outcomes. **Available measures:** N/A	**Validity testing status:** Not tested No indication that this has been tested empirically
Purnell, 2016[203] **Name:** N/A US **Link:** https://www.healthaffairs.org/doi/10.1377/hlthaff.2016.0158?url_ver=Z39.88-2003&rfr_id=ori%3Arid%3Acrossref.org&rfr_dat=cr_pub++0pubmed	**Type of care:** Disparities, equity, SDOH Equity and disparities **Setting:** Healthcare **Population:** US **Intended use:** To address factors that influence disparities in access to care and quality of health care services **Defined:** N/A	**Components and included domains:** Level: policy and community; organization and provider; family, friends, and social support; individual patient Intervention targets: neighborhood and community resources; organizational motivation, resources, staff attributes, climate, and teamwork; patient programs and services, insurance and affordability, and provider- and system-level supports; ongoing support from family and friends; patient education and clinical care, and biological, sociodemographic, and psychological factors Health care processes - key interactions: patients and support networks; community health workers; other organizational members and stakeholders; health care providers Outcomes: clinical outcomes; avoidable hospital admissions; patient experiences of care; equity of services; costs **Equity/disparities:** Equity of services is a domain in the	**Similarities:** Both frameworks address healthcare delivery in some way, and includes equity within the framework. **Differences:** This framework focuses on address health equity and disparities, and includes intervention targets, healthcare processes, and outcomes. **Policy levers:** Researchers and policy makers should seek funding and other resources to engage and empower patient and community stakeholders in interventions, to improve the interventions' sustainability and potential for dissemination. To inform future disparities interventions and policies, it will be necessary to conduct natural experiments on health care reform and other state and national policies to monitor their impact on disparities over time, by comparing states with different degrees of adoption to document the impact of these policies on the health of underserved populations. **Available measures:** N/A	**Process development:** Not reported **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this model has been tested empirically

		framework, and the framework itself is called factors that influence disparities in access to care and quality of health care services. **Context:** N/A		
Rahimi, 2018[205] **Name:** N/A Iran **Link:** https://brieflands.com/articles/semj-64056.pdf	**Type of care:** Quality of care Performance indicator **Setting:** Hospitals **Population:** Iran **Intended use:** Serve as performance indicators for hospitals **Defined:** Finance = %Personnel costs of total costs; Ratio of total revenue to total costs; % Deductions of hospital; Average expenditures per bed per day the cost of drugs and materials Internal process = average length of stay; Bed occupancy; Mean length of stay in emergency department; Mortality rate; bed turnover rate; Discharge with personal satisfaction; Emergency room (ER) waiting time; Hospital infection rate; % canceled surgeries; Clinical errors Learning and growth = Training expenditures per capita; Staff satisfaction rate; Employee absenteeism rate; Staff turnover Customer = Patients satisfaction percentage; Rate of patient complaints; The facilities for families and visitors	**Components and included domains:** Finance Internal process Learning and growth Customer **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks address health system infrastructure capabilities. **Differences:** This framework is more so a list of performance indicators for hospitals, while the 2010 NASEM framework addresses health system delivery broadly. **Policy levers:** N/A **Available measures:** Finance = %Personnel costs of total costs; Ratio of total revenue to total costs; % Deductions of hospital; Average expenditures per bed per day the cost of drugs and materials Internal process = average length of stay; Bed occupancy; Mean length of stay in emergency department; Mortality rate; bed turnover rate; Discharge with personal satisfaction; Emergency room (ER) waiting time; Hospital infection rate; % canceled surgeries; Clinical errors Learning and growth = Training expenditures per capita; Staff satisfaction rate; Employee absenteeism rate; Staff turnover Customer = Patients satisfaction percentage; Rate of patient complaints; The facilities for families and visitors	**Process development:** Based on the 4 perspectives described by the balanced scorecard (BSC), the evaluation indicators of hospital performance and key performance indicators (KPIs) were adopted from the related literature and selected by experts' panel, respectively. Then, the decision making trial and evaluation laboratory (DEMATEL) method was employed for the determination of the cause-and-effect relationships between the indicators, differentiation of the effective and significant factors, and construction of the strategy map to ameliorate hospital performance. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes Expert panel and Delphi technique were used **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this model has been tested empirically

Raising the Bar, 2022[206] **Name:** Foundational Principles Unclear/Not reported **Link:** https://rtbhealthcare.org/wp-content/uploads/2022/07/RWJF-RTB-Report-2022-PRINCIPLES-FINAL-060622.pdf	**Type of care:** Other Population health **Setting:** Population health **Population:** General population **Intended use:** To illustrate the necessary ambitions and objectives for healthcare to comprehensively and holistically raise the bar, regardless of where they are currently on their journeys **Defined:** Mission: commit above all to a mission of improving health and well-being = Healthcare shows a commitment to raise the bar by fully adopting and implementing the mission of improving the health and well-being of individuals, families, and communities, and putting this mission above all else Equity: systematically pursue health equity, racial justice, and the elimination of all forms of discrimination = Healthcare shows a commitment to raise the bar by providing everyone with a fair and just opportunity to be as healthy as possible, regardless of their race, ethnicity, preferred language, gender, sexual identity, age, disability status, religion, employment, income, migrant status, and other factors Community: serve the community as an engaged, responsive, and proactive partner = Healthcare shows a commitment to raise the bar by recognizing its responsibility and potential as a collaborative,	**Components and included domains:** Mission: commit above all to a mission of improving health and well-being Equity: systematically pursue health equity, racial justice, and the elimination of all forms of discrimination Community: serve the community as an engaged, responsive, and proactive partner Power: share and effectively use resources, influence, and power Trust: earn and sustain trusting relationships **Equity/disparities:** Equity is a component of the framework. **Context:** N/A	**Similarities:** Both frameworks address healthcare in some way. **Differences:** This framework includes the domains mission, community, power, and trust, while the 2010 NASEM framework does not. This framework has a focus on population health, while the 2010 NASEM framework addresses healthcare delivery. This framework's five domains are considered principles. **Policy levers:** Equity: It requires a proactive and comprehensive commitment to be antiracist, to pursue the elimination of all forms of discrimination, and to implement organizational policies and practices that support these commitments. Power: ealthcare organizations and institutions can drive critical changes within their own sector, but they can also exert considerable influence on broader social and economic policy if they use and share their power in service to the places in which their workforce and individuals they care for live, work, and play. **Available measures:** N/A	**Process development:** Not reported **Source/Endorsements:** Yes Raising the bar: Healthcare's Transforming Role **Stakeholder engagement:** Unclear Not reported **Evidence-based:** No **Defined population:** No (target unclear) **Validity testing status:** Not tested No indication that this model has been tested empirically

	accountable partner with communities Power: share and effectively use resources, influence, and power = Healthcare shows a commitment to raise the bar by using resources, influence, and power in service to the community, sharing them with individuals and community organizations to the benefit of those communities' health and well-being Trust: earn and sustain trusting relationships = Healthcare shows a commitment to raise the bar by cultivating meaningful relationships in which the trust of individuals, families, and communities is earned, and by trusting in the ability and expertise of those individuals, families, and communities			
Reeve, 2015[207] **Name:** Health Service Evaluation Framework Australia **Link:** https://pubmed.ncbi.nlm.nih.gov/26343490/	**Type of care:** Quality of care **Setting:** Primary health care integrating hospital and community services **Population:** Remote communities in Australia; specifically Fitzroy Valley in the Kimberley region of Western Australia in this study **Intended use:** To evaluate and monitor a primary health care service, integrating hospital and community services in remote communities **Defined:** Structure - structure performance = accessible, appropriate, effective, responsive, continuous, efficient	**Components and included domains:** Structure: structure performance Process: utilization performance Outcome: outcome performance Key foundations: Sustainability - essential services; quality of care - national performance indicators; community determinants of health Fundamental enables: Supportive policy; Commonwealth/State relationships; Community readiness to change **Equity/disparities:** Equity is a sub-domain of the Outcome/Outcome Performance domain.	**Similarities:** Both frameworks include equity, access, effectiveness, efficiency, continuity of care, and health systems infrastructure capabilities. **Differences:** The Health Service Evaluation framework includes equity as just a subdomain, while it is a cross-cutting dimension in the 2010 NASEM framework. The HSE framework includes a structure, process, outcome design, while the 2010 NASEM framework does not. The HSE framework includes key foundation domains of quality of care - national performance indicators and community determinants of	**Process development:** Relevant literature around primary health care models in small remote and rural areas and community- controlled health services were reviewed including a targeted literature review of primary health service evaluation frameworks in Australia and overseas. Based on this review of the literature the research team developed and drafted a conceptual framework against which the change process and sustainability could be analysed. Second, local information was collected through in-depth interviews conducted with key stake-holders and focus groups. Data

	Process - utilization performance = accessible, appropriate, effective, responsive, continuous, efficient Outcome - outcome performance = mortality, morbidity, risk factors, health behaviors, well being, equity Key foundations: Sustainability - essential services = workforce, infrastructure, funding, linkages, governance Key foundations: Quality of care - national performance indicators = maternal and child health, chronic disease Key foundations: Community determinants of health = socioeconomic status, education, income, employment Fundamental enables: supportive policy, Commonwealth/State relationships, Community readiness to change	**Context:** N/A	health, while the 2010 NASEM framework does not. **Policy levers:** The framework was developed because of the need for a rigorous, integrated health service evaluation tool able to link primary health care data collection with current hospital service data collection and connect them to national health performance indicators and national policy. This paper goes a step further from traditional QI to link policy to comprehensive health service evaluation using a logic model that examines the system from all aspects; from policy, through to inputs, outputs and outcomes including clinical, health behavioural risk factors and population health. Use of an evaluation framework which links policy and health service performance to health outcomes will assist health services to improve performance as part of a continuous quality improvement cycle. **Available measures:** Health service performance - structure - accessible: availability of community health care clinics and emergency services in communicates by location of health services and hours they are staffed Health service performance - structure - appropriate: description of dedicated programs matched to community burden of disease needs including preventive	were grouped thematically and to provide research rigour, the transcripts were independently analysed by two investigators, anomalies were discussed and resolved. Quantitative data (health service utilisation, workforce numbers and composition and health service availability) were also collected from the health services, using annual reports and the report functions in the electronic medical record. Five stake-holder interviews and four focus groups were completed. Finally, the evaluation framework was presented and discussed at a series of workshops with key stakeholders, including health service providers, policymakers and community members for input and modification. The aim of these workshops was to provide a forum for feedback, agreement was reached through discussion and consensus achieved by the group around which indicators were relevant and workable based on their experience. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes Local information was collected through in-depth interviews conducted with key stake-holders and focus groups. Five stake-holder interviews and four focus groups were completed. Focus groups comprised health service providers (ten people), health governing council (14 people) and community

			health screening, sexual health, antenatal program, child health program, school health program, male health program, chronic disease program Health service performance - structure - effective: number and location of primary health staff for health promotion and disease prevention programs Health service performance - structure - responsive: proportion of Aboriginal staff; community engagement with health service decision making documented in formal minutes; patient feedback on their health care experience by survey and complaints systems Health service performance - structure - continuous: proportion of all providers using the single shared electronic medical record; number of chronic disease and team care plans; recall system usage and proportion of recall appointments attended Health service performance - structure - efficient: description of electronic medical records usage; total incentive payments for preventive care achieved per year; number of successful health service activity claims per year Annual health service activity performance - process - accessible: number of ED lists per year; number of hospital separations per year; number of visits to outpatients and primary care per year; number of visits to allied health services per year; number of health	members associated with the development of the partnership (six people). **Evidence-based:** No **Defined population:** No (target unclear) **Validity testing status:** Not tested No indication this has been tested empirically

			professional visits to communities per year Annual health service activity performance - process - appropriate: number of attendances to primary health programs per year; number of health checks per year; number of antenatal clinic attendances per year; annual child health screening coverage (%); annual school health screening coverage (%) Annual health service activity performance - process - effective: number of individuals seen at least once the preceding 12 months; number of male occasions of service per year; proportion of primary care activity (primary care attendances/total number of occasions of service per year); vaccination coverage (%); number of preventable hospitalizations by category (acute, vaccine related and chronic condition admissions); average length of hospital stay (in days); number of unplanned readmissions to hospital within 28 days of last separation; number of acute emergency transfers to another center per year Annual health service activity performance - process - responsive: proportion of indigenous community attendances (% of total attendances); attendance at routine booked appointments (%) Annual health service activity performance - process -	

			continuous: number of chronic disease care plans for each calendar year; number of team care arrangements (TCA) per year; number of follow up appointments and recall appointments attended each year Annual health service activity performance - process - efficient:: cost/per occasion of service for hospital separation, emergency visits, outpatient visits, community health visits Annual health service activity performance - outcome - mortality: annual mortality rate for population Annual health service activity performance - outcome - morbidity: incidence of selected cancers by year; prevalence of type 2 diabetes in adults over 15 years; prevalence of end-stage kidney disease in adults over 15 years; prevalence of CVD in adults over 15 years; prevalence of chronic obstructive airway disease in adults over 15 years Annual health service activity performance - outcome - risk factors: BMI data for those over 15 years; smoking and alcohol use for those over 15 years Annual health service activity performance - outcome - health behaviors: proportion of community residents who are regular clients (have visited the health service 3 or more times in the preceding 12 months); cervical cancer screening coverage (% women aged 20-69 years); annual birth rate for	

			women aged <20 years; breast cancer screening coverage (% women aged 50-69 years) Annual health service activity performance - outcome - well being: low, moderate, high or very high psychological distress; national data collection using current national self-reported survey (the Kessler Psychological Distress (K10) for those aged 18 years and over); proportion of people aged >18 years selecting a scale from low to very high for psychological distress; self-reported levels of control; national data collection using current national self-reported survey for those aged 18 years and over, proportion of people aged >18 years selecting strongly agreed or agreed with the statement that they had control over decisions that affect their life (internal locus of control); self-reported health conditions selected from list of provided in national survey Annual health service activity performance - outcome - equity: comparative indigenous primary health care key performance indicators - Fitzroy valley compare to WA and national indicators Annual quality of care - process - antenatal care: number of 1st trimester antenatal visits before 12 weeks; number and proportion of antenatal visits before 20 weeks; number of premature deliveries (24-36 weeks); number of birth weight	

			result <2500 g; number of birth weight result >4000g Annual quality of care - process - diabetes (type 2) in people aged greater than 15 years: number of patients with type 2 diabetes identified; proportion of eligible patients with a chronic disease care plan; number and proportion of type 2 diabetics with HbA1c measured in the last 6 months; number and proportion of type 2 diabetics with HbA1c <=7 achieved in the last 6 months; number and proportion of type 2 diabetics with HbA1c <=8 achieved in the last 6 months; number and proportion of type 2 diabetics with BP<=130/80 achieved in the last 6 months; number and proportion of type 2 diabetics with ACR measured in the past 12 months; number and promotion of type 2 diabetics on ACE or ARB; number and proportion of diabetes annual cycle of care completed per year Annual quality of care - process - renal disease-end state kidney disease: number of patients on renal register; number of patients with blood pressure <=130/80; number and proportion of patients with renal disease with eGFC measured in the last year; number and proportion of patients with renal disease on an ACE or ABR Annual quality of care - process - CVD: number and proportion of patients diagnosed with renal disease on register; number and proportion of renal patients	

			with a care plan; number and proportion of patients with BP<=130/80; number and proportion of patients with cholesterol <=4; number and proportion of patients on ACE or ARB; number and proportion of patients who do not smoke Annual quality of care - process - COPD: number of patients on register by year; number and promotion of patients who do not smoke; number and promotion of patients who are ex smokers; number and proportion of patients who have had spirometry in the last year	
Remington, 2015[208] **Name:** County Health Rankings Model US **Link:** https://pophealthmetrics.biomedcentral.com/counter/pdf/10.1186/s12963-015-0044-2.pdf	**Type of care:** Other Population health, care quality 1 aspect **Setting:** Population health **Population:** General public **Intended use:** To address population health, and demonstrate how different elements affect health outcomes **Defined:** Health behaviors = tobacco use, diet and exercise, alcohol and drug use, sexual activity Clinical care = access to care, quality of care Social and economic factors = education, employment, income, family and social support, community safety Physical environment = air and water quality, housing and transit Health outcomes = length of life, quality of life	**Components and included domains:** Policies and programs Health factors: health behaviors, clinical care, social and economic factors, physical environment Health outcomes **Equity/disparities:** Equity and disparities is not explicitly addressed in the framework, but it can be used to show how social and economic factors, and physical environment can impact health of population. **Context:** To help produce County Health Rankings report	**Similarities:** Both frameworks considers healthcare and access to care. **Differences:** The County Health Rankings model addresses population health and factors that contribute to health outcomes, while the 2010 NASEM framework addresses the healthcare delivery system. There is not much overlap in components of both frameworks other than access to care. **Policy levers:** The primary goal of the model is to mobilize action toward community health by stimulating interest among policymakers (and the media). Once the media and community leaders are made aware of problem areas, communities can be engaged to enact evidence-informed health policies and programs to improve health outcomes.	**Process development:** N/A **Source/Endorsements:** Yes University of Wisconis Population Health Initiatve, RWJF **Stakeholder engagement:** No Model suggested by University of Wisconsin Population Health Initiative with help of RWJF **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied in different context

			Available measures: Length of life: premature death Quality of life: poor or fair health; poor physical health days; poor mental health days; low birthweight Tobacco use: adult smoking Diet and exercise: adult obesity; food environment index; physical inactivity; access to exercise opportunities Alcohol and drug use: excessive drinking; alcohol-impaired driving deaths Sexual activity: sexually transmitted infections; teen births Access to care: uninsured; primary care physicians; dentists; mental health providers Quality of care: preventable hospital stays; diabetic screening; mammography screening Education: high school graduation; some college Employment: unemployment Income: children in poverty Family and social support: inadequate social support; children in single-parent households Community safety: violent crime; injury deaths Air and water quality: air pollution - particulate matter; drinking water violations Housing and transit: severe housing problems; driving alone to work; long commute-driving alone	
Rezapour, 2019[209]	**Type of care:** Quality of care **Setting:** Healthcare	**Components and included domains:** Patient centeredness Governance	**Similarities:** Both frameworks include patient-centeredness,	**Process development:** A literature review (published and grey literature search) was

Name: Iranian primary health care quality framework Iran **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6617563/	**Population:** Primary care **Intended use:** Quality assessment of Primary Health Care in Iran's health system **Defined:** N/A	Access and equity Safety Efficiency Effectiveness **Equity/disparities:** Equity is one of the dimensions of the framework. **Context:** N/A	safety, access, equity, effectiveness, and efficiency. **Differences:** The Iran framework addresses primary care specifically, while the 2010 NASEM framework addresses healthcare delivery more broadly. The 2010 NASEM framework doesn't include governance. **Policy levers:** The results of Quality Assessment Framework implementation in first line can be used in policy/ macro/meso level of system to set priorities, planning, policy-making by top-managers and policy-makers. In this regard, the aim of this study was to develop a QAF of PHC in Iran's health system. **Available measures:** Access and equity: % of catchment population who received at least one basic visit; % of patients with mental disorders that have had a follow-up visit in defined period according to national protocol; % of pregnant women with first visit at the first trimester; % of population, age 30 to 59 years old with overweight and obesity who received consultation services for behavioral change; % of smokers, age 18 and older who receive smoking cessation consultation; % of student age 6 to 14 years old who received florid therapy; Clinical staff provide home visits for patients who are physically not able to travel to the practice; % of individuals with COPD that have had a follow-up visit and	conducted followed by a qualitative research. The extracted quality dimensions and indicators for initial screening were reviewed and discussed in two panel meetings attended by the experts with regard to the current package of health system in Iran. Using Delphi method, the dimensions and Quality Indicators(QIs) were evaluated and approved by 39 national health professionals in two rounds. Finally, after 4 panel sessions at ministerial level, the selected QIs were categorized in form of the final dimensions of the quality of care. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes The extracted quality dimensions and indicators for initial screening were reviewed and discussed in two panel meetings attended by the experts with regard to the current package of health system in Iran. Using Delphi method, the dimensions and Quality Indicators(QIs) were evaluated and approved by 39 national health professionals in two rounds. Finally, after 4 panel sessions at ministerial level, the selected QIs were categorized in form of the final dimensions of the quality of care. **Evidence-based:** Empirically based

			treatment during the last year; Individual self-care program coverage Safety: % of health facility staff immunized for Hepatitis B (3 doses); % of safe injections in the health care facility; % of Staff who have attended continuous training about quality and patient safety during last year; % compliance with Hand Hygiene guidelines number of adverse events reported (immunization/medication) Efficiency: % of prescriptions that include antibiotics in health centers and health posts; % of the 13 essential non communicable diseases medicines with no stock out in last 3 months (cardiovascular, diabetes, hypertension and COPD) Effectiveness: % Hypertension patients with Initial laboratory investigations; % of registered hypertension patients with BP < 140/90 at last 2 follow up visits; % of registered diabetic patients with fasting blood sugar controlled at last 2 follow up visits; % of registered NCD patients age 30 and older with 10 years' cardiovascular risk recorded in past 1 year; % of registered NCD patients with blood pressure recorded twice at last follow up visit; % children age 6 to 9 months old screened for anemia; % of women who delivered and received at least once postnatal care within the first 6 weeks; % of under 23 months children immunized	**Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically

			according to the national protocol; % of people that work in the workshop of under 20 labor worker and whose were basic visit and occupational care in past years; % of diabetic people with HbA1C less than 7%; % of pregnant women received at least 6 ANC; % of under 5 children that had weight and height measured in past 1 year; % of newborns who are exclusively breastfed for the first six months Patient centeredness: % of patients aware about Patients' rights and responsibilities; Customer satisfaction rate (%) Governance: staff satisfaction rate: % of appropriate (upward) referrals during last 6 months (by specific conditions) with appropriate feedback Appropriateness: % of population, age 30 and older, with diabetes mellitus who received following exams: Hemoglobin Alc (Hba1c), Eye examination, Foot Examination, Blood Pressure Measurement; % of population, age 20 and older, with depression who received following exams: PHO, Active follow up, non-communicable diseases risk factors assessment, Drug Side effects assessment; % of pregnant women who received health education about: nutritional care, anemia, sanitation, high risk pregnancy signs; % TB screening in high risk groups; % of women aged 30-59 yrs. who had at least 1 Pap test in the past 5 yrs.; % of	

			risk factors Assessment for AIDS in The population covered; % of water microbial sampling According to standard.	
Ritchie, 2018[210] **Name:** Quality of Home-Based Medical Care Framework US **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6392035/	**Type of care:** Quality of care **Setting:** Home-based medical care **Population:** U.S. **Intended use:** To address quality of care for home-based medical care **Defined:** Provider and practice activities = assessment, care coordination, patient and caregiver education Provider competency = provider competency Patient, caregiver, outcomes = safety, quality of life, goal attainment (shared decision-making and avoid inappropriate care), access, patient and caregiver experience, cost/affordable care	**Components and included domains:** Provider and practice activities Provider competency Patient, caregiver, outcomes **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks include care coordination, safety, and access. **Differences:** The HBMC framework addresses home-based medical care, while the 2010 NASEM framework addresses healthcare delivery broadly. The HBMC framework includes categories: provider and practice activities; provider competency; and patient, caregiver, outcomes, while the 2010 NASEM framework does not. The HBMC framework includes the domains: assessment, patient and caregiver education, provider competency, quality of life, goal attainment, patient and caregiver experience, and cost/affordable care, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** Assessment (new): Perform a comprehensive assessment in the home that includes: Symptoms (physical, emotional, social, spiritual) Physical, executive and cognitive function Health literacy Patient goals and sources of meaning and purpose Care coordination needs Treatment burden experienced by patients and caregivers	**Process development:** Qualitative analysis of semi-structured interviews from purposive sampling of keyHBMC stakeholders; the team conducted template analysis, a qualitative approach that combines content analysis and grounded theory. This hybrid approach allowed for deductive and inductive analysis and deductively approached the data with the NQF Multiple Chronic Conditions Framework and inductively used participant responses to refine the framework, refine domains, and offer new categories of measures. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes Semi-structured interviews to get input on HBMC and development of a quality of care framework **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically

			Patient and caregiver stressors and overall quality of life/well-being Social support and social risk, cultural issues and spirituality Safety assessment including home and community safety, including abuse and neglect Home environmental assessment including physical setup for patient (also lighting, water, electricity, refrigeration, etc.). Treatment preferences, including advance directives/POLST Medical and psychiatric history, medical complexity Care coordination: Coordinate handoffs between care settings and providers Communicate patient treatment goals and preferences across settings Identify and use appropriate community resources Ensure that all team members have access to key patient information and to the role each team member plays in the patient's care Ensure that the team is notified of sentinel events updated in a timely manner on patient changes and sentinel events. Coordinate with family and informal caregivers Patient and caregiver education (new): Use knowledge of patient's and caregiver's goals and learning needs to inform education plan	

			Promote patient and caregiver understanding of all aspects of the care plan Mutually determine an emergency contingency plan for care ◊ Support patient and caregiver self-management Provider competency (new): Know how to make diagnoses and manage medical problems in the home (e.g. high quality medical skills) Engage in effective interpersonal communication and basic knowledge of social issues/supports Integrate quality improvement processes into the practice Demonstrate hospice and palliative care competency Use and order appropriate durable medical equipment (DME) Safety (new): Perform and document medication reconciliation Medicine management – measure adverse drug events Address general home safety, including falls prevention, equipment safety, gun safety and other potential home-related injuries Address abuse and neglect Ensure a safe place or safe situation (e.g. emergency preparedness and appropriate transport) Promote staff safety and safety of the staff to the patient Quality of life: Optimize comfort and safety of home environment Manage symptoms Reduce treatment burden	

			Employ preventive services to optimize function Attend to relationships / social support / spirituality Assess loneliness/social isolation Goal attainment (shared decision-making and avoiding inappropriate care): Align patient and caregiver goals with care plan Facilitate communication about and achievement of realistic goals for care Respect patient autonomy and choice Access: Provide timely initiation of care Provide 24/7 urgent access to care Ensure and coordinate access to specialty care and home-directed ancillary services Involve medicine, social work, nursing, physical therapy and other relevant disciplines at minimum in provision of patient care Establish appropriate time intervals for visits for stable patients Provide access to non-urgent housecalls visits or questions in a timely manner Conduct marketing and outreach Ensure adequate access to care Employ telemedicine and telemonitoring Conduct timely diagnostic evaluation including appropriate use technology Patient and caregiver experience:	

			Facilitate trust between the patient, caregiver and the team Manage patient and caregiver stressors; offer supportSolicit patient/caregiver perception of provider/practice competence Minimize wait time for non-urgent visits and questions Track disenrollment rates Solicit patient/caregiver experience/satisfaction and patient/caregiver reported outcomes Cost-affordable care: Match enrollment to patient selection criteria Measure healthcare utilization and cost Attend to patient and caregiver financial concerns related to healthcare	
Rowson, 2018[211] **Name:** Care Excellence Framework UK **Link:** https://pubmed.ncbi.nlm.nih.gov/29972293/	**Type of care:** Quality of care **Setting:** Hospital **Population:** UK **Intended use:** Framework for measurement, clinical observations, patient and staff interviews, benchmarking and improvement **Defined:** Safety = management of medicines; safety and suitability of premises; safety, availability and suitability of equipment; requirements relating to workers; staffing; records Effective = consent to care and treatment, meeting nutritional needs, cleanliness and infection control, supporting staff Caring = respecting and involving people who use	**Components and included domains:** Safety Effective Caring Responsive Well led **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** Acute care setting, and more, to serve as an internal accreditation system, and encourage staff to undertake effective change and transform care from ordinary to excellent	**Similarities:** Both frameworks include safety and effectiveness. **Differences:** The Care Excellence framework addresses hospitals more so than healthcare in general, and includes caring, responsive, and well led as domains, while the 2010 NASEM framework addresses healthcare delivery more broadly, and does not include the aforementioned domains. The CEF serves more as an internal accreditation system that provides assurance from ward to board. **Policy levers:** N/A **Available measures:** The CEF is supported by an advanced, bespoke IT system that encompasses a suite of measures ensuring that ward	**Process development:** N/A **Source/Endorsements:** Yes University Hospitals of North Midlands NHS Trust **Stakeholder engagement:** Yes Provide input on development of framework **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied in different context

	services, care and welfare of people who use services Responsive = cooperating with other providers, complaints Well led = assessing and monitoring the quality of service provision		visits to review the domains are tailored and intelligence driven. Managers can interrogate the system and benchmark themselves against other areas. The measures provide robust information to identify areas of good practice and areas for improvement, and clinical areas are supported to develop and deliver bespoke improvement plans.	
Samson, 2021[195] **Name:** ASPE Estimated Relative Contributions to Health US **Link:** https://www.aspe.hhs.gov/sites/default/files/2021-09/Sep-2021-SDOHOverviewDoc.pdf	**Type of care:** Disparities, equity, SDOH Equity, provider quality, patient experience are components **Setting:** N/A **Population:** Individuals who experience disparities **Intended use:** To address health equity **Defined:** Individual/area characteristics with disparate effects X underlying health status and non-medical factors = income and employment opportunities; financial characteristics; health behaviors; life course; stable housing; good nutrition; views on medical care; playgrounds and green areas Individual/area characteristics with disparate effects X access to care = insurance coverage; affordability; health literacy; transportation; accessibility of facilities; convenient availability of facilities; telehealth access Individual/area characteristics with disparate effects X experience in medical care = provider quality; differences in	**Components and included domains:** Underlying health status and non-medical factors Access to care Experience in medical care Example outcome measures Individual/area characteristics with disparate effects Systemic drivers of disparities Examples of policies that might affect health equity **Equity/disparities:** The framework aims to address health equity **Context:** N/A	**Similarities:** Both frameworks address access to care, equity and care coordination. **Differences:** The health equity framework by Samson aims to address health equity and includes healthcare as a component, while the 2010 NASEM framework focuses on healthcare broadly and includes equity as a component. **Policy levers:** The framework includes policies to address health equity in the domains of social, economic, and health system drivers of disparities. In each phase of the framework (underlying health status and non-medical determinants; access to care; experience in the medical care system), key drivers are identified along with examples of policies that might affect the drivers. Authors discusses examples of health equity performance indicators based on the framework, which includes evaluating the impact of a specific policy or the cross-cutting effects of multiple policy interventions that may overlap in the timing of implementation.	**Process development:** N/A **Source/Endorsements:** Yes ASPE, HHS **Stakeholder engagement:** No Model suggested by individual author **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Unclear

	treatment patterns and quality of providers treating certain groups; differences in care coordination; availability of culturally and linguistically appropriate services; ability to connect with social services Individual/area characteristics with disparate effects X example outcome measures = differences in health status overall; differences associated with particular acute episodes; patient and caregiver experiences with care Systemic drivers of disparities X underlying health status and non-medical factors = societal/structural discrimination (geographic location, area-level income, environmental factors, economic conditions, social support, public health spending, quality of schools) Systemic drivers of disparities X access to care = societal/structural discrimination (employment opportunities, conditions, and benefits; state and local policies; attractiveness of markets to providers and health plans; transportation infrastructure; geographic location; broadband availability) Systemic drivers of disparities X experience in medical care = provider discrimination; provider diversity; financial performance, resources, and capacity of providers; patient mix of local providers; communication barriers Systemic drivers of disparities X example outcome measures =		**Available measures:** Potential Measures of Health Equity by category: 1. Underlying health status and non-medical factors: areas measures of per capita income; air and water quality; food insecurity; rates of health literacy; housing insecurity 2. Access to care: uninsured rates; underinsured rates; practitioner and facility availability; specialty service availability; broadband access; self-reported access to care 3. Experience in medical care: process-based quality indicators; patient experience with care measures; patient experience with coordinated care and patient engagement; claims measures of divergent episodes of care; quality of facilities used; diversity of clinical staff; rates of screening for SDOH 4. Example outcome measures: changes in functioning; readmission rates; ambulatory care sensitive conditions; chronic conditions; self-reported health status; mortality rates	

	meeting social needs (food security, access to transportation, housing, family and social support) Examples of policies that might affect health equity X underlying health status and non-medical factors = outreach about medical care; health promotion and prevention interventions; increased availability of social services; incentives for plans an providers to network with community organizations; community planning; economic development Examples of policies that might affect health equity X access to care = Medicaid expansion; scope of practice laws; workforce policies; increasing funding for FQHCs and other provider support; support for community health workers and other outreach and care coordination workers Examples of policies that might affect health equity X experience in medical care = integration of social and medical services; care coordination; strong incentives to join APMs for patient-centered coordinated care; provider assistance programs such as QIOs; patient education programs Examples of policies that might affect health equity X example outcome measures = incentivize social needs assessments and referrals; targeted quality improvement activities; investments in research into conditions that primarily affect disadvantaged groups; public			

	reporting on health outcomes by race, ethnicity			
Santana, 2018[212] **Name:** Framework for person-centered care Canada **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5867327/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** International **Intended use:** To address the gap on practical guidance on the implementation of patient-centered care, and provide a comprehensive perspective, particularly with respect to the foundations needed to achieve patient-centered care **Defined:** Structure (health care system/organization level) = creating a patient-centered (PCC) culture; co-designing the development and implementation of educational programs; co-designing the development and implementation of health promotion and prevention programs; supporting a workforce committed to PCC; providing a supportive and accommodating PCC environment; developing and integrating structures to support health information technology; creating structures to measure and monitor PCC Process (patient - healthcare provider level) = cultivating communication; respectful and compassionate care; engaging patients in managing their care; integration of care Outcome (patient - healthcare provider - healthcare systems) = access to care; patient-reported outcomes	**Components and included domains:** Structure (health care system/organization level) Process (patient - healthcare provider level) Outcome (patient - healthcare provider - healthcare systems) **Equity/disparities:** Equity and disparities are not explicitly addressed in this framework. **Context:** N/A	**Similarities:** Both frameworks addresses healthcare delivery, and includes the components access to care, effectiveness (i.e., patient-reported outcomes), patient/family centeredness, care coordination (i.e., integration of care), and health systems infrastructure capab **Differences:** This framework specifically addresses patient-centered care, while the 2010 NASEM framework addresses healthcare delivery more generally. This framework includes patient satisfaction experience directly, while the 2010 NASEM framework does not. **Policy levers:** Policy makers need to consider alternative provider payment methods and incentives to reward practicing patient-centered care (PCC). Patients, healthcare providers and policy makers should co-develop structures to measure and monitor PCC performance based on feedback from patients to promote PCC practice. Healthcare providers and policy makers must embark towards a culture shift in practice (PCC). **Available measures:** Creating a patient-centered care culture: Vision, Mission; Patient-directed: integrating patient experience and expertise; Addressing and incorporating diversity in care, health	**Process development:** Based on a narrative review of the PCC literature, a generic conceptual framework was developed in collaboration with a patient partner, which synthesizes evidence, recommendations and best practice from existing frameworks and imple-mentation case studies. The Donabedian model for health-care improvement was used to classify PCC domains into the categories of “Structure,” “Process” and “Outcome” for health-care quality improvement **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** No Suggested by authors **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this framework has been tested empirically

			promotion and patient engagement; Patient and health-care provider rights; Consistent operational definitions; Common language around PCC Co-designing the development and implementation of educational programs: Integration of all health-care sectors and professionals; Professional education and accrediting bodies; Translating into practice through continued professional education and mentorship Co-designing the development and implementation of health promotion and prevention programs: Identify resources; Creating partnerships with community organizations; Create patient advisory groups Supporting a workforce committed to patient-centered care: Provide adequate incentives in payment programs; celebrate small wins and victories; Encourage teamwork and teambuilding Providing a supportive and accommodating PCC environment: Collaborate with and empower patients and staff in designing health-care facilities; Environments that are welcoming, comfortable and respectful; Spaces that provide privacy; Spiritual and religious spaces; Facility that prioritize the safety and security of its patients and staff; Areas/rooms that will support the accommodation of patients;	

			Provide interpretation and language services; Patient-directed visiting hours Developing and integrating structures to support health information technology: Electronic Health Record systems with capacity to coordinate and share health-care interactions across the continuum of care; Health information privacy and security; E-health adoption support through strategic funding and education Creating structures to measure and monitor PCC performance: Co-design and development of innovative programs to collect patients and caregiver experiences about care received and providing timely feedback to improve the quality of health care (including complaints and compliments, wins and lessons learned); Reporting and feedback for accountability and to improve quality of health care Cultivating communication: Gathering information through active listening; Asking questions of what patients want to discuss (concerns, views, understanding); Non-verbal behaviours (eye-contact, listening attentively, proximity/touch, head nodding); Patients are provided with all the necessary information to make informed decisions in relation to their diagnosis and treatment plan; Sharing of information regarding patient's condition and their own	

			impact/influences on their condition; Responding to patient and caregiver needs; Aim and follow-up of treatment or interventions with possible outcomes and adverse events/side-effects; Discussing and building capacity of patients for self-management and self-care; Acknowledging and discussing uncertainties; Creating a shared understanding Respectful and compassionate care: Acknowledge the patient as an expert in their own health and as a part of the health-care team; Understanding patient within his/her unique psychosocial or cultural context (i.e: awareness of religious, spiritual, lifestyle, social and environmental factors); Responding empathically; Building a partnership with patients; Providing resources; Sensitivity to emotional/psychosocial needs Engaging patients in managing their care: Shared decision making; Goal-setting; Supporting self-care management; Care plans can be accessed by patients and health-care providers Integration of care: Between health-care providers; Referrals to specialist; Discharge communication; Providing access to information and resources Access to care: Wait times for referrals to see specialists, to receive a consult; During	

			consult, to be seen at emergency community care, pre-hospital, hospital, post-hospital; secondary care; time for patient care; Availability of health-care practitioners during and outside of working hours; Affordability of care including complimentary care and therapies, dental, pharmacare, ambulance Patient-reported outcomes: Health-Related Quality of Life; Symptoms; Functionality; Psychosocial outcomes; Recommendation or rating of hospital, health-care provider; Assessment of care, including appropriateness and acceptability of care (competency, knowledge, skills of staff); New or worsening symptoms; Unanticipated visits to health-care facilities; Death	
Schoen, 2006[213] **Name:** National Scorecard on US Health System Performance US **Link:** https://www.commonwealthfund.org/sites/default/files/documents/___media_files_publications_in_the_literature_2006_sep_u_s__health_system_performance__a_national_scorecard_954_schoen_nat_scorecard_us_hlt_sys_performance_te_pdf.pdf	**Type of care:** Quality of care **Setting:** Healthcare **Population:** US **Intended use:** To provide benchmarks for assessing performance, a mechanism for monitoring change over time, and a yardstick against which to assess the effects of existing or proposed national policies to improve performance of the U.S. health system **Defined:** Right care = adults recommended screening and preventive care; children recommended immunizations, preventive care; needed mental health care and received treatment; chronic disease	**Components and included domains:** Right care Coordinated care Safe care Patient-Centered, Timely care Better access to care and affordability Greater efficiency Equity **Equity/disparities:** The overall scores for all other dimensions of the framework adds up to the equity dimension of the framework. **Context:** It has been used as a scorecard to measure performance of the US health and healthcare.	**Similarities:** Both frameworks include equity, safety, access, patient-centeredness, efficiency, timeliness, care coordination, and types of care. **Differences:** The National Scorecard includes patient experience, while the 2010 NASEM framework doesn't include that explicitly. The National Scorecard is a scorecard of performance and addresses both health and healthcare, while the 2010 NASEM framework is more of a framework and addresses health system. **Policy levers:** The scorecard provides information, such as gaps between current national	**Process development:** Not reported **Source/Endorsements:** Yes Commonwealth Fund **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

	under control (diabetes, high blood pressure); hospitalized patients recommended care for AMI, CHF, pneumonia Coordinated care = adult with accessible primary care provider; children with a medical home; care coordination at hospital discharge; nursing homes hospital admissions and readmissions; home health hospital admissions Safe care = patients reported medical, medication, or lab errors; unsafe drug use; nursing home residents with pressure sores' hospital-standardized mortality ratios Patient-Centered, Timely care = ability to see doctor same/next day when sick or needed medical attention; ability to get "after hours" care; doctor-patient communication - always listened, explained, showed respect, spent enough time; adults with chronic conditions given self management plan; patient-centered hospital care - always managed pain, responded when needed help, explained medicines Better access to care and affordability = universal participation; affordable care Greater efficiency = overuse, inappropriate care, or waste; access and efficiency; variations in quality and costs; insurance administrative costs; information systems to support efficient care Equity = N/A		performance and benchmarks, to help inform public and private policy action. **Available measures:** Long, healthy, and productive lives: Mortality amenable to health care - Deaths per 100,000 population; Infant mortality - Deaths per 1,000 live births Healthy life expectancy at age 60, Years (Avg. 2 ratios): Men, Women; Adults under 65 limited in any activities because of physical, mental, or emotional problems, %; Children missed 11 or more school days due to illness or injury, % Quality - the right care: Adults: recommended screening and preventive care; Children: recommended immunizations, preventive care (Avg 2 ratios); Needed mental health care and received treatment (Avg 2 ratios); Chronic disease under control: diabetes, high blood pressure (Avg 2 ratios); Hospitalized patients: recommended care for AMI, CHF, pneumonia Quality - coordinated care: Adult with accessible primary care provider; Children with a medical home; Care coordination at hospital discharge (Avg 3 ratios); Nursing homes: hospital admissions and readmissions (Avg 2 ratios); Home health: hospital admissions Quality - safe care: Patients reported medical, medication, or lab errors; Unsafe drug use (Avg 3 ratios); Nursing home	

			residents with pressure sores (Avg 2 ratios); Hospital-standardized mortality ratios Quality - patient-centered, timely care: Ability to see doctor same/next day when sick or needed medical attention; Ability to get “after hours” care; Doctor-patient communication: always listened, explained, showed respect, spent enough time; Adults with chronic conditions given self management plan; Patient-centered hospital care: always managed pain, responded when needed help, explained medicines Access: Adults under 65 insured all year, not underinsured; Adults with no access problem due to costs; Families spending <10% of income or <5% of income, if low income, on OOP medical costs and premiums; Population under 65 living in states where premiums for employer-sponsored health coverage are <15% of under-65 median household income; Adults under 65 with no medical bill problems or medical debt Efficiency: Potential overuse or waste (Avg. 3 ratios): Duplicate medical tests: doctor ordered test that had already been done; Tests results or records not available at time of appointment; Received imaging study for acute low back pain with no risk factors* (Avg. health plans): Private plans, Medicaid plans; Went to ER for condition that could have been treated by	

			regular doctor; Hospital admissions for ACS conditions (Avg. 2 ratios): National ACS admissions, per 100,000 population (Avg. 3 conditions): Congestive heart failure, Diabetes, Pediatric asthma; Medicare ACS admissions, per 10,000 beneficiaries; Medicare hospital 30-day readmission rates; Medicare annual costs of care and mortality for AMI, hip fracture, and colon cancer (Avg. 2 ratios): Resource costs, annual Part A and Part B $, 1-year mortality rate; Medicare annual costs of care for chronic diseases: Diabetes, CHF, COPD, Part A and Part B $ (Avg. 4 ratios): All three conditions, Diabetes + CHF, Diabetes + COPD, CHF + COPD; Percent of national health expenditures spent on health administration and insurance; Physicians using electronic medical records	
Schoenmakers, 2015[214] **Name:** N/A Netherlands **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC10397876/	**Type of care:** Quality of care **Setting:** Community pharmacies **Population:** Dutch population **Intended use:** To evaluate quality indicators for Dutch community pharmacies **Defined:** Continuity of care = checking and registration of current medication use; management of interactions between oral anticoagulants and co-trimoxazole; participation of pharmacotherapy audit meetings with GPs and	**Components and included domains:** Continuity of care Patient counseling Clinical risk management Compounding Dispensing of medication Monitoring of medication use Self-care support Logistics Quality management Professional education **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks include continuity of care, either resources or infrastructures capabilities, safety (clinical risk management), and types of care (pharmacy). **Differences:** This framework addresses community pharmacies, while the 2010 NASEM framework addresses health system delivery. This framework includes the domains patient counseling, clinical risk management, compounding, dispensing of medication, monitoring of medication use, self-care	**Process development:** Not reported **Source/Endorsements:** Unclear Authors conducted the study using a previously developed framework that involved the Health Care Transparency Programme and an independent research institute Significant **Stakeholder engagement:** Yes An expert panel was formed, which consisted of 6 pharmacists who had participated in the data collection--5 practicing community pharmacists and a

	community pharmacists; percentage of patients with actual and verified documentation of current medication use prior to and after dispensing of medication Patient counseling = percentage of users of inhalation medication who received instructions for the use of inhaler devices first dispensed; percentage of benzodiazepine users who received verbal information about dependency with a follow-up prescription for benzodiazepines; percentage of patient counseling pharmacy staff with demonstrable competency in patient counseling Clinical risk management = availability of protocols concerned with asking patients about potential contraindications; asking the prescriber for confirmation of suspected contraindications; percentage of patients chronically using loop diuretics and RAs inhibitors who are dispensed NSAIDs; percentage of patients with documented contraindication of heart failure who are dispensed NSAIDs; availability of protocols concerned with asking patients about possible drug intolerability's; documentation of the management of drug-drug interactions; number of patients who concurrently use oral anticoagulants and co-trimoxazole; number of patients concurrently use oral anticoagulants and miconzole;		support, quality management, and professional education, while the 2010 NASEM framework does not. This framework includes patient experience, while the 2010 NASEM framework does not explicitly address that. **Policy levers:** N/A **Available measures:** Continuity of care: checking and registration of current medication use; management of interactions between oral anticoagulants and co-trimoxazole; participation of pharmacotherapy audit meetings with GPs and community pharmacists; percentage of patients with actual and verified documentation of current medication use prior to and after dispensing of medication Patient counseling: percentage of users of inhalation medication who received instructions for the use of inhaler devices first dispensed; percentage of benzodiazepine users who received verbal information about dependency with a follow-up prescription for benzodiazepines; percentage of patient counseling pharmacy staff with demonstrable competency in patient counseling Clinical risk management: availability of protocols concerned with asking patients about potential contraindications; asking the prescriber for confirmation of suspected contraindications;	pharmacist/epidemiologist, who served as project leader in the development and data collection process. **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested 1,987 Dutch community pharmacies were requested to complete an online question-naire about the QIs. This questionnaire contained 1 or more questions for each QI with options for dichotomous or categori- cal answers or fields to provide numerators and den

	percentage of dispenses with quality assurance steps applied in dispensing process; availability of protocols concerning dose control of compounded medicine for systemic use; percentage of compounded medicine for systemic use with dose control; patients using metformin in a daily dosage of 1,000 mg and above, with a creatinine clearance below 50 mL/min with medication adjustment according to creatinine Compounding = arrangements made for checks by compounding pharmacy in case of delegated compounding; releasing technician compounded medicines by a pharmacist before dispensing to patients; stock compounding according to written protocols and non standardized compounding according to guidelines Dispensing of medication = percentage of community-dwelling patients aged >65 years with medication dispensed in individualized dosage systems; registration errors during dispensing of medication, dispensed to patient; percentage of registered errors during dispensing of medication, dispensed to patient; availability of protocols on generic substitution for information to patients, prescribers, and persons who administer medicines; compliance of individualized automated		percentage of patients chronically using loop diuretics and RAs inhibitors who are dispensed NSAIDs; percentage of patients with documented contraindication of heart failure who are dispensed NSAIDs; availability of protocols concerned with asking patients about possible drug intolerability's; documentation of the management of drug-drug interactions; number of patients who concurrently use oral anticoagulants and co-trimoxazole; number of patients concurrently use oral anticoagulants and miconzole; percentage of dispenses with quality assurance steps applied in dispensing process; availability of protocols concerning dose control of compounded medicine for systemic use; percentage of compounded medicine for systemic use with dose control; patients using metformin in a daily dosage of 1,000 mg and above, with a creatinine clearance below 50 mL/min with medication adjustment according to creatinine Compounding” arrangements made for checks by compounding pharmacy in case of delegated compounding; releasing technician compounded medicines by a pharmacist before dispensing to patients; stock compounding according to written protocols and non standardized compounding according to guidelines Dispensing of	

	dispensing packages with national standards; availability of controls procedures for medication in weekly dosage forms Monitoring of medication use = percentage of benzodiazepine users (aged >65 years) who chronically use benzodiazepines; number of medication reviews performed for patients with poly pharmacy (>5 different medication groups); percentage of classical NSAID users (aged >70 years) with gastro protection; percentage of patients who concurrently use nitrates and antithrombotics; percentage of users of strong opiates who take laxatives (lactulose, magnesium oxide, bisacodyl, macrogol, or sennosides); percentage of dispense third-generation chinolones; monitoring and counseling of adherence to chronic medication used; percentage of new and existing users of simvastatin who use simvastatin in a lower dose than according to national standards; percentage of patients who use an antidepressant (SSRI) longer than 24 months continuously; percentage of patients who continuously use proton pump inhibitors longer than 12 months Self-care support = following protocols for dispensing high-risk OTC medication; percentage of high-risk OTC medication dispensings according to protocol		medication: percentage of community-dwelling patients aged >65 years with medication dispensed in individualized dosage systems; registration errors during dispensing of medication, dispensed to patient; percentage of registered errors during dispensing of medication, dispensed to patient; availability of protocols on generic substitution for information to patients, prescribers, and persons who administer medicines; compliance of individualized automated dispensing packages with national standards; availability of controls procedures for medication in weekly dosage forms Monitoring of medication use: percentage of benzodiazepine users (aged >65 years) who chronically use benzodiazepines; number of medication reviews performed for patients with poly pharmacy (>5 different medication groups); percentage of classical NSAID users (aged >70 years) with gastro protection; percentage of patients who concurrently use nitrates and antithrombotics; percentage of users of strong opiates who take laxatives (lactulose, magnesium oxide, bisacodyl, macrogol, or sennosides); percentage of dispense third-generation chinolones; monitoring and counseling of adherence to chronic medication used; percentage of new and existing users of	

	Logistics = structures available for assessment of suppliers; assessment of reliability of suppliers; availability of a valid expiration system; number of expired medicines dispensed to patients; number of inaccurately performed recalls of medicine Quality management = registration errors made during dispensing of medication, noticed within the pharmacy; year of most recent evaluation of patients' experiences; number of registered complaints made by patients; number of adverse drug reactions reported to the Netherlands Pharmacovigilance Centre; availability of certified quality management system; parameters for clinical risk management in the pharmacy information system are set up according to the prevailing standards Professional education = professional development of pharmacy staff		simvastatin who use simvastatin in a lower dose than according to national standards; percentage of patients who use an antidepressant (SSRI) longer than 24 months continuously; percentage of patients who continuously use proton pump inhibitors longer than 12 months Self-care support: following protocols for dispensing high-risk OTC medication; percentage of high-risk OTC medication dispensings according to protocol Logistics: structures available for assessment of suppliers; assessment of reliability of suppliers; availability of a valid expiration system; number of expired medicines dispensed to patients; number of inaccurately performed recalls of medicine Quality management: registration errors made during dispensing of medication, noticed within the pharmacy; year of most recent evaluation of patients' experiences; number of registered complaints made by patients; number of adverse drug reactions reported to the Netherlands Pharmacovigilance Centre; availability of certified quality management system; parameters for clinical risk management in the pharmacy information system are set up according to the prevailing standards Professional education: professional development of pharmacy staff	

Schrimmer, 2019[177] **Name:** NAHQ Healthcare Quality Competency Framework US **Link:** https://nahq.org/nahq-intelligence/competency-framework/	**Type of care:** Quality of care Healthcare quality competency **Setting:** Healthcare **Population:** Healthcare quality professionals, healthcare leaders, educators **Intended use:** Give healthcare a common quality language, set standards and expectations for quality work, and provide accountability by offering a way to assess competency in professional quality practice **Defined:** Patient safety = assess patient safety culture, apply safety science principles and methods, identify and report patient safety risks and events, collaborate to analyze patient safety risks and events Regulatory and accreditation = operationalize processes to support standards compliance, facilitate continuous survey readiness activities, guide the organization through survey processes and findings Quality review and accountability = relate current and emerging payment models to quality, execute measure requirements, facilitate practitioner performance activities, Professional engagement = integrate ethical standards into practice, engage in life-long learning, participate in activities that advance the profession Quality leadership and integration = direct the quality infrastructure, regulate the use of privileged or confidential	**Components and included domains:** Patient safety Regulatory and accreditation Quality review and accountability Professional engagement Quality leadership and integration Performance and process improvement Population health and care transitions Health data analytics **Equity/disparities:** Equity and disparities is not explicitly addresses in the framework. **Context:** Training healthcare quality professionals.	**Similarities:** Both frameworks address healthcare. **Differences:** The 2010 NASEM framework addresses healthcare delivery while the NAHQ framework addresses healthcare quality competency (for healthcare professionals, etc.). **Policy levers:** N/A **Available measures:** N/A	**Process development:** Content Development - A framework oversight team was established to conduct the activities necessary for the content development. Six rapid cycle work groups were convened to iteratively develop the content for the framework. Using foundational content previously developed by NAHQ, the framework oversight and rapid cycle work groups created a crosswalk and harmonized HQ Principles , the CPHQ and HQ Essentials into a single framework using the Dreyfus Model of Skill Acquisition and Blooms' revised taxonomy. The content development process included a literature synthesis, a comparative analysis of quality position job descriptions, and expert opinion from individual and group interviews of practicing HQPs. During the harmonization process, the four domains within the CPHQ content outline and the six areas within the HQ Essentials were combined and reframed as dimensions within NAHQ's Framework. The six areas of the HQ Essentials: Performance and Process Improvement, Population Health and Care Transitions, Health Data Analytics, Patient Safety, Regulatory and Accreditation, and Quality Review and Accountability were included in the framework as dimensions. The CPHQ domain, Organizational Leadership (renamed Quality Leadership

	information, implement processes for engagement and teamwork, create learning opportunities to advance the organization, communicate effectively Performance and process improvement = implement standard PPI methods, apply project management methods, use change management and principles, Population health and care transitions = integrate PH management strategies into quality, apply a holistic approach to improvement, collaborate to improve care processes and transitions Health data analytics =apply procedures for the governance of data assets, design data collection plans for KPIs, acquire data from source systems, integrate data from internal and external data electronic systems, use statistical and visualization methods			and Integration), was included as a framework dimension. One additional dimension, professional engagement, was included based on analysis of the literature, CPHQ content outline, and stakeholder feedback. Content Evaluation - Evaluated using expert opinion, through a survey process. The final survey was deployed to randomly selected healthcare quality professionals (HQPs) listed in the NAHQ database. After survey completion and analysis of feedback, the framework team concluded that all the competency statements in the framework were relevant and accurately reflected skills required for HQP roles. User Evaluation - Survey experts to design a self-assessment tool to evaluate the consistency of the framework content compared with quality practice. The survey was tested by the framework development team and NAHQ staff and then deployed to 1,500 randomly selected HQPs listed in the NAHQ database. The survey expert and the NAHQ team found the self-assessment tool consistently provided accurate information on competencies relevant to quality practice. **Source/Endorsements:** Yes National Association for Healthcare Quality **Stakeholder engagement:** Yes A panel of quality experts

				coordinated with the NAHQ team completed the 3-phased process (content development, content evaluation, and user evaluation) in a 10-month period **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Validated twice in the market, but unclear how
Sibthorpe, 2007[215] **Name:** Framework for Performance Assessment in Primary Health Care Australia **Link:** https://www.publish.csiro.au/py/PY07027	**Type of care:** Quality of care Performance assessment **Setting:** Primary care **Population:** Australian **Intended use:** To underpin the potential development of a quality system for a large primary health care program, as well as the development of indicators **Defined:** Government = N/A Primary health care services and programs = N/A Assessment of efficiency (relationships between costs and intermediate health outcomes) = N/A Assessment of equity ("is it the same for everyone?") = N/A Stewardship = policy development (including clear objectives); financing and funding (+/- incentives); implementation (including contracting and reporting requirements); workforce development; IT infrastructure development and support; R&D; indicators of stewardship	**Components and included domains:** Government Primary health care services and programs Assessment of efficiency (relationships between costs and intermediate health outcomes) Assessment of equity ("is it the same for everyone?") Stewardship Organizational structures and processes Processes of care received by patients/clients, families and communities Intermediate outcomes for patients/clients, families and communities Tier 1 (health status and outcomes) Tier 2 (determinants of health) Tier 3 (health system performance) **Equity/disparities:** The domain -- Assessment of Equity - "Is it the same for everyone?" -- is in the framework. **Context:** This framework has been used in two different	**Similarities:** Both frameworks address healthcare, and include the equity, access, safety, effectiveness, efficiency, types of care, health systems infrastructure capabilities, and continuity of care. **Differences:** The Australian framework explicitly includes patient satisfaction and social determinants of health, while the 2010 NASEM framework does not. The Australian framework is focused on primary health care, while the 2010 NASEM framework addresses healthcare delivery broadly. **Policy levers:** The component "policy development (including clear objectives)" is in the framework. **Available measures:** N/A	**Process development:** Not reported **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** Unclear Not reported **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied in two different contexts: The National Quality and Performance System for Divisions of General Practice; Key Performance Indicators for Community Health in the Australian Capital Territory

	Organizational structures and processes = physical facilities and equipment; human resources management; financial management; information systems; needs assessment; staffing, including deployment; service organization and management, including protocols; processes of care provided (PHC); inter-provider agency networks and relationships; community networks and relationships; performance assessment; indicators of organizational structures and processes, including care provided to patients/clients, families and communities - units of measurement are organizations and providers Processes of care received by patients/clients, families and communities = PHC; sick care (including curative, rehabilitative and palliative); health promotion; disease prevention; advocacy; community development; indicators of processes of care received by patients/clients, families and communities - units of measurement are patients/clients, families and communities Intermediate outcomes for patients/clients, families and communities = risk behaviors in client populations; clinical status in client populations; activities of daily living in client populations; satisfaction with care in client populations; indicators of intermediate outcomes for	contexts: The National Quality and Performance System for Divisions of General Practice; Key Performance Indicators for Community Health in the Australian Capital Territory.		

	patients/clients, families and communities - units of measurement are patients/clients, families and communities Tier 1 (health status and outcomes) = N/A Tier 2 (determinants of health) = N/A Tier 3 (health system performance) = effective; appropriate; efficient; responsive; accessible; safe; continuous; capable; sustainable			
Sicotte, 1998[216] **Name:** Conceptual framework of health care organizations performance Canada **Link:** https://pubmed.ncbi.nlm.nih.gov/10178368/	**Type of care:** Quality of care Health care organization performance **Setting:** Healthcare **Population:** Healthcare organizations (not clear if it's national for Canada or international or something else) **Intended use:** To serve as a comprehensive theoretically grounded framework by which to overcome the current fragmented approach to health care organizations' performance management **Defined:** N/A	**Components and included domains:** Adaptation-related dimensions: capacity to acquire resources; ability to mobilize external support; consistency with social values and requirements; responsiveness to population needs; capacity for market presence; ability for innovation and learning Goal attainment-related dimensions: effectiveness; efficiency; stakeholder satisfaction with outcomes Culture and values-related dimensions: consensus with fundamental values; organizational climate Production-related dimensions: services volume production; coordination of production factors; productivity; quality of care and services Allocation: responsiveness of adaptation processes in relation to the production system Legitimization: impact of goals on values Alignment: congruence of goals with values; appropriateness of	**Similarities:** Both frameworks include value, effectiveness, efficiency, and health systems infrastructure capabilities. **Differences:** The framework in this study addresses health care organization performance while the 2010 NASEM framework addresses the health system. The HCO performance framework includes adaption-related dimensions, stakeholder satisfaction with outcomes (sub-dimension of goal attainment-related dimensions), culture and values-related dimensions, allocation, alignment (contextual, strategic, tactical, and operational), legitimization, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** N/A	**Process development:** This paper uses Parsons' social system action theory to develop a comprehensive theoretically grounded framework by which to overcome the current fragmented approach to HCO performance management. The Parsonian perspective focuses on four fundamental functions that an HCO needs to ensure its survival. Organizational performance is determined by the dynamic equilibrium resulting from the continual interaction of, and interchange among, these four functions. The alignment interchanges allow the creation of bridges between traditional models of organizational performance that are usually used as independent and competing models. **Source/Endorsements:** Unclear Authors are members of the Health Care Management Group of HEALNet, and other members of HEALNet

		adaptation processes in relation to the production system Operational alignment: impact of production system on values; congruence of production system with values Strategic alignment: appropriateness of adaptation processes in relation to goals; relevance of goals in relation to adaptation processes Tactical alignment: appropriateness of the production system in relation to goals; relevance of goals in relation to production Contextual alignment: congruence of adaptation processes with values; impact of adaptation processes on values **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A		contributed to the conception and development of the paper, but it's not clear whether it is endorsed by the organization **Stakeholder engagement:** No Model suggested by authors **Evidence-based:** No **Defined population:** Unclear Health care organizations, but not sure if it is international or specific to Canada **Validity testing status:** Not tested No indication that this model has been tested empirically
Simou, 2014[217] **Name:** Framework of quality indicators for hospitals Greece **Link:** https://onlinelibrary.wiley.com/doi/abs/10.1002/hpm.2237	**Type of care:** Quality of care **Setting:** Hospitals **Population:** Greece **Intended use:** To help assess the quality of aspects relevant to public hospital healthcare workforce and services provided; to serve as a framework for quality indicators for public hospitals **Defined:** Quality = effectiveness, safety Responsiveness = patient centeredness, staff orientation Efficiency = N/A Utilization = N/A Timeliness = N/A	**Components and included domains:** Quality Responsiveness Efficiency Utilization Timeliness Resources and Capacity **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks include effectiveness, safety, patient centeredness, efficiency, timeliness, and infrastructure resources/capabilities. **Differences:** The framework by Simon et al. addresses hospital specifically, while the 2010 NASEM framework addresses healthcare delivery broadly. The hospital framework includes the dimensions quality, responsiveness (staff orientation), and utilization, while the 2010 NASEM framework does not. **Policy levers:** Policymakers were part of the stakeholders that provided input on	**Process development:** A literature review was conducted in the MEDLINE database to identify articles referring to international and national hospital quality assessment projects, together with an online search for relevant projects. A consensus panel took place afterwards with 40 experts in the field and tele-voting procedure to select useful standards for Greek public hospitals. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes Consensus meeting to deliver assistance in successfully

	Resources and Capacity = human resources, information technology, infrastructure and facilities		framework development. Experts were asked to rate, through tele-voting, the quality indicators in terms of importance (impact on health status, policy relevance, and susceptibility to being influenced by the public health system performance). In addition, efficiency indicators, similar to other quality projects, were also highlighted in the "Health Map" framework's public hospitals set, as it is of great importance and policy-making significance. **Available measures:** QUALITY Effectiveness: Inpatient mortality from selected causes (AMI*, stroke, pneumonia, CABG*, hip fracture, pneumonia); Readmission rate for selected causes (AMI, stroke, pneumonia, CABG, hip fracture, pneumonia, asthma, diabetes mellitus); Unscheduled readmission to ICU*; Perioperative mortality; Perinatal mortality due to complications (mother, child); Cancer patients successfully surviving surgery/chemotherapy/transplant Safety: In-hospital avoidable VTE*; Hospital-acquired infections (VAP*, urinary catheter associated UTI*, central line associated blood stream infection, surgical site infection, infections in neonates); Medical errors per sector (following surgery, improper or delayed treatment,	selecting useful standards for Greek public hospitals **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this model has been tested empirically

			iatrogenic complications); Obstetric trauma; Staff injury; Staff needle puncture incidents RESPONSIVENESS Patient centeredness: Patient feedback management; Pain control; Satisfaction from personnel; Explanation of procedures, treatment and discharge information; Satisfaction from hospital environment (cleanliness, quietness, privacy) Staff orientation: Staff burnout; Staff absenteeism; Staff working overtime; Satisfaction from working environment; Clearly defined responsibilities in staff; Continuous education for health professionals EFFICIENCY: Length of stay; ICU length of stay; Hospital bed coverage; Admission/discharge rate; Cost of inpatient services per patient day; Exams ordered at the ER*, per patient; Laparoscopic/open surgery rate; Single-day stay for selected surgeries; Caesarian section rate; Surgery postponed or canceled UTILIZATION: Patients visiting the ER department; Admissions for acute conditions; Usage of equipment/facilities; Usage of laboratory exams; Surgical Theater use TIMELINESS: Time needed for initial clinical examination at the ER after arrival; Time needed for admission after arrival at the ER; Time needed for selective surgical treatment; Patients leaving without being examined RESOURCES and CAPACITY	

			Human resources: Permanent personnel (per discipline); Detached personnel (per discipline); Temporary personnel (per discipline); Personnel educational level (per discipline); Intra-sector nurses to physicians ratio Information technology; Computers for the personnel; Computers with Internet access; Computers with modern applications; Use of electronic medical records; Hospitals having a webpage; Telephone center Infrastructure and facilities; Surgical theaters; Beds per sector; Beds per room; Short-term stay beds; Space for patient baggage; Toilet in patients' rooms; Intra-communication facilities in patients' rooms; Oxygen facilities in patients' rooms; Air-conditioning facilities in patients' rooms; Telephone facilities in wards; Imaging facilities (radiography, ultrasound, CT, MRI, mammography, gamma-camera, digital subtraction angiography, PET) ; ICU and high care units; Hemodialysis facilities; Management of hospital waste	
Sinaiko, 2019[218] **Name:** Comprehensive Model of Patient Centered Care and Outcomes US **Link:** https://academyhealth.org/sites/default/files/deliverypatientcenteredcare_august2019.pdf	**Type of care:** Other Patient-centered care, care quality implied **Setting:** Healthcare **Population:** U.S. **Intended use:** To have a comprehensive model for patient-centered care that accounts for the multi-level nature of the health care system and identifies the information	**Components and included domains:** Patient Care team Healthcare system External context Intermediate patient outcomes Patient outcomes **Equity/disparities:** Equity is a part of the framework domain 'patient outcomes', if we follow	**Similarities:** Both models incorporate equity, access, and care coordination, and address the healthcare system. **Differences:** Other than equity, access, and care coordination, there are no other overlapping domains/components. Value is included in both models, but in the 2010 NASEM framework, it seems to represent value of	**Process development:** First, drew from existing frameworks and definitions of patient-centered care to articulate a comprehensive model for patient-centered care. Second, the major barriers to delivering patient-centered care, according to the peer-reviewed literature, at each level of the health care system were identified. Findings presented in

	about individuals that is necessary for patient-centered care **Defined:** Patient = access, goals, life circumstances, values and culture, care preferences, health status and symptoms Care team = care coordination, patient centered measurement, patient engagement and care design, team staff composition, tools and programs, "top of license" work allocation, training Healthcare system = care coordination, culture, financial incentives, health information technology, patient centered measurement, quality improvement, other structural integration External context = health information technology, community and public agency linkages, financial incentives, policy, insurance design Intermediate patient outcomes = patient-centered care Patient outcomes = health outcomes, greater health, equity	the patient-centeredcare model presented **Context:** N/A	care while the Patient-Centered Care model is labeled values and culture. The Patient-Centered Care model is more focused on promoting patient-centered care, while the 2010 NASEM framework more broadly addresses the healthcare system. **Policy levers:** Findings in the article included input from a panel of experts that included individuals with policy perspectives. Authors note that variation in the vision for patient-centered care has important implications for policy. One domain of the PCC framework is policy: legal and regulatory environment that facilitates and does not inhibit patient centered care (e.g., privacy and informed consent, promoting access to medical education for students of diverse backgrounds). **Available measures:** N/A	the paper have benefited tremendously from input from a panel of experts representing patient, provider, payer, policy, and research stakeholders' perspectives. Together these stakeholders make up Advisory Committee that was assembled to assist with planning and strategy for the Robert Wood Johnson Foundation and AcademyHealth Patient Centered Care Meeting in 2019. **Source/Endorsements:** No Model suggested by authors, but was produced under the RWJF and administered by AcademyHealth **Stakeholder engagement:** Yes Input from a panel of experts representing patient, provider, payer, policy, and research stakeholders' perspectives. Together these stakeholders make up Advisory Committee that was assembled to assist with planning and strategy for the Robert Wood Johnson Foundation and AcademyHealth Patient Centered Care Meeting in 2019. **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested
Smedley, 2003[219] **Name:** Integrated model of healthcare disparities US	**Type of care:** Disparities, equity, SDOH Disparities in care (lower quality implied) **Setting:** Healthcare **Population:** U.S.	**Components and included domains:** Patient input Social, economic and cultural influences Data Interpretation	**Similarities:** There is not much overlap between the two frameworks, but the both frameworks do address health care in some way.	**Process development:** Not reported **Source/Endorsements:** Yes IOM/NAM

Link: https://www.ncbi.nlm.nih.gov/books/NBK220358/pdf/Bookshelf_NBK220358.pdf	**Intended use:** Depict the likely interplay of health systems characteristics, patient-level factors, and care process variables in fostering racial and ethnic disparities in healthcare **Defined:** Patient input = medical history, patient preferences (subject to ambiguity and misunderstanding) Social, economic and cultural influences = financial incentives, institutional design, legal environment, cultural influences Data = physical examination, diagnostic test results Interpretation = subjectivity of perception, multiple diagnostic alternatives Intervention = uncertainty with respect to efficacy, multiple treatment alternatives Stereotyping = conscious and unconscious Prejudice = conscious and unconscious Racially disparate clinical decisions = N/A	Intervention Stereotyping Prejudice Racially disparate clinical decisions **Equity/disparities:** The framework itself is aimed at addressing healthcare disparities. **Context:** Not reported	**Differences:** The NAM model addresses healthcare disparities, while the 2010 NASEM framework addresses healthcare delivery broadly. The healthcare disparities model includes components such as patient input; data; social, economic and cultural influences; interpretation; intervention; stereotyping; prejudice; and racially disparate clinical decisions while the 2010 NASEM framework does not. **Policy levers:** Authors state that the health system is broadly influence by institutional design factors (such as the ease of care access), and financial forces (such as incentives to providers and patients to limit service use and healthcare costs), and that these systems operate within legal and cultural contexts that influence how healthcare is delivered and the behavior of both patients and providers. **Available measures:** N/A	**Stakeholder engagement:** No Model suggested by organization **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that the model has been tested empirically
Smith, 1996[221] **Name:** Quality of Care Framework for Medicaid Managed Care US **Link:** https://www.cms.gov/files/document/hcfr-17-4-97pdf	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Medicaid community **Intended use:** To address Medicaid managed care **Defined:** Practice Parameter = profiling outcomes of care: constant, sentinel condition; census of patients and providers Recipient Household Survey = satisfaction with care; constant,	**Components and included domains:** Practice Parameter Recipient Household Survey Chart Review Quality Care **Equity/disparities:** Equity and disparities is not explicitly addressed in the framework. **Context:** Virginia Medicaid program	**Similarities:** Both frameworks addresses health care. **Differences:** There is no overlap in the components of the two frameworks. **Policy levers:** N/A **Available measures:** N/A	**Process development:** The Virginia Medicaid Quality Assessment/Improvement Program (the case study in the article) relies on key structural elements of quality suggested by Quality Assurance Reform Initiative, and utilizes three operational assessment components, each based on a different view of quality. The program thus applies a multiaxial definition of medical quality as outcomes of care, process of care, and

	customer focus; sample of patients Chart Review = process of care and outcomes of care: variable, sentinel condition, sample of patients, providers; intense review			satisfaction with care (the three components of the framework). **Source/Endorsements:** Yes Virginia Medicaid program **Stakeholder engagement:** Yes Extensive discussions with primary-care physicians on the Virginia Medicaid Provider Advisory Committee have guided the design of the evaluation components, to make sure they will actually help the physician providers to improve their processes of care as well as improve patient outcomes and satisfaction. **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied in different context
Smith, 2010[220] **Name:** N/A UK **Link:** https://iris.who.int/bitstream/handle/10665/350328/WHO-EURO-2008-4077-43836-61716-eng.pdf?sequence=1&isAllowed=y	**Type of care:** Quality of care Health system performance **Setting:** Population health and healthcare **Population:** World population **Intended use:** To address health universal aspects of health performance measures **Defined:** Population health = Measures of aggregated data on the health of the population Individual health outcomes = Measures of individual's health status, which can be relative to the whole population or among groups; Indicators that also apply utility rankings to different health states	**Components and included domains:** Population health Individual health outcomes Clinical quality and appropriateness of care Responsiveness of health system Equity Productivity **Equity/disparities:** Equity is a domain of the framework. **Context:** N/A	**Similarities:** Both frameworks include equity, access, timeliness, and effectiveness (population health and health outcomes in this framework). **Differences:** The framework in this report includes patient experience, while the 2010 NASEM framework does not do so explicitly. Equity is a cross-cutting dimension in the 2010 NASEM framework, while it is just a domain in this report's framework. This report's framework addresses population health and healthcare, while the 2010 NASEM framework addresses just health system delivery. This report's framework includes	**Process development:** Not reported **Source/Endorsements:** No **Stakeholder engagement:** No **Evidence-based:** No **Defined population:** No (target unclear) **Validity testing status:** Not tested No indication that this has been tested empirically

	Clinical quality and appropriateness of care = Measures of the services and care patients receive to achieve desired outcomes; Measures used to determine if best practice takes place and whether these actions are carried out in a technologically sound manner Responsiveness of health system = Measures of the way individuals are treated and the environment in which they are treated during health system interactions; Measures concerned with issues of patient dignity, autonomy, confidentiality, communication, prompt attention, social support and quality of basic amenities Equity = Measures of the extent to which there is equity in health, access to health care, responsiveness and financing Productivity = Measures of the productivity of the health care system, health care organizations and individual practitioners		population health, individual health outcomes, clinical quality and appropriateness of care, and productivity, while the 2010 NASEM framework does not. **Policy levers:** Performance measurement offers policy-makers a major opportunity for securing health system improvement and accountability. Experiments under way to examine how performance measurement can be used in conjunction with explicit financial incentives to reward provider performance are a promising area for policy and a priority for further research. Authors offer a range of policy implications based on this report. **Available measures:** Population health: life expectancy; years of life lost; avoidable mortality; disability-adjusted life-years Individual health outcomes: short form 36; EQ-5D; arthritis impact measurement scale; Parkinson's disease questionnaire (PDQ-39) Clinical quality and appropriateness of care: health status; specific post-operative readmission and mortality rates; frequency of blood pressure measurement Equity: rates of access; use-needs ratios; spending thresholds; disaggregated health outcome measures Productivity: labor productivity; cost-effectiveness measures (for interventions); technical	

			efficiency (measures of output/input); allocative efficiency (measured by willingness to pay)	
Tawfik-Shukor, 2007[222] **Name:** Harmonized Five-Diamond Framework Multiple countries **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1810529/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Canada and Netherlands **Intended use:** Serve as framework for healthcare performance **Defined:** Structure/Process: Cost/Resources = increase availability and relevance of evidence; increase productive use and appropriate allocation of resources across the system Access/Accessibility = increase access to key health care services Process: Responsiveness/Patient Centeredness = increase access to and uptake of evidence for decision-making and accountability; improve patient-centeredness, integration, and quality of health services Outcome: Safety = improve patient-centeredness, integration and quality of health services Effectiveness = improve healthy behaviors, health promotion and disease prevention; improve clinical outcomes; improve health status Increase sustainability and equity of the health system Strategy linkages	**Components and included domains:** Structure/Process: Cost/Resources Access/Accessibility Process: Responsiveness/Patient Centeredness Outcome: Safety Effectiveness Strategy linkages **Equity/disparities:** Increasing equity of the health system is a domain of the framework. **Context:** N/A	**Similarities:** Both frameworks include equity, access, patient-centeredness, safety, effectiveness, and health system infrastructure capabilities (cost/resources), and addresses health system delivery/performance. **Differences:** This framework included structure/process, process, outcome; strategy linkages; and increase sustainability of the health system, while the 2010 NASEM framework does not. **Policy levers:** A CIHR-commissioned workshop was held in Toronto to better understand the higher-level contextual meaning behind the performance assessment frameworks. Stakeholders expressed interest in understanding how several independent contextual variables (for example, regulatory regimes, state structures, funding systems, health system governance, performance reporting, quality incentives, budgetary cycle policies, funding formulas, decentralization and local health system autonomy, performance contracting, strategic purchasing) cause differences in health system performance in The Netherlands and Ontario. The roundtable discussion extended important contextual	**Process development:** We explored the performance assessment framework and system of each constituency, the embeddedness of performance data in management and policy processes, and the interrelationships between the Dutch Zorgbalans health performance matrix and Ontario (Canada) Health System Scorecard frameworks. Methods used included analysing governmental strategic planning and policy documents, literature and internet searches, comparative descriptive tables, and schematics. Data collection and analysis took place in Ontario and The Netherlands. A workshop to validate and discuss the findings was conducted in Toronto, adding important insights to the study. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes Our analysis of Dutch and Ontario HSPA was validated via emails and interviews with stakeholders representing OMHLTC's Health Results Team (HRT), the RIVM, and the University of Amsterdam Medical Center's (AMC) HSPA team. A workshop was held to validate findings

			policy information into the study, further validating the results of the initial information collected. **Available measures:** N/A	**Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested A workshop to validate and discuss the findings was conducted in Toronto, adding important insights to the study.
ten Asbroek, 2004[223] Arah, 2003[100] **Name:** National Performance Indicator Framework for the Dutch Health System Netherlands **Link:** https://pubmed.ncbi.nlm.nih.gov/15059989/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Netherlands population **Intended use:** To help measure health system performance **Defined:** Population health information -> Health: genetic layout, environment factors, lifestyle, healthcare Management information -> Healthcare: consumer perspective, financial perspective, internal business processes perspective, innovation perspective Financial perspective = health system costs; allocative efficiency; vertical equity; financial accessibility; financial viability of financiers and care providers Consumer perspective = effectiveness; patient safety; patient centeredness Innovation perspective = allocation of funds of relearning and growth; diffusion of new technologies; information infrastructure; human resources (innovative working environment, and professionals in training); development and diffusion of organizational	**Components and included domains:** Population health information -> Health: genetic layout, environment factors, lifestyle, healthcare Management information -> Healthcare: consumer perspective, financial perspective, internal business processes perspective, innovation perspective **Equity/disparities:** Vertical equity is a component of the Financial Perspective domain. **Context:** N/A	**Similarities:** Both frameworks include equity, safety, effectiveness, access, efficiency, patient-centeredness, continuity of care, and health systems infrastructure capabilities. Both frameworks addresses healthcare/health system delivery. **Differences:** The Dutch framework includes the domains financial perspective, consumer perspective, innovation perspective, and internal business processes perspective, while the 2010 NASEM framework does not. It also includes patient experience more directly, while the 2010 NASEM framework does not. **Policy levers:** The selected indicator areas for health system management information reflect the policy and management functions of the government and the defined public goals of the health system. The selection of indicator areas has resulted in a set that is recognisable, relevant, and appropriate for policymakers. **Available measures:** N/A	**Process development:** Initiated an informed interactive process with the intended users—policymakers at the Ministry of Health, Welfare and Sport—and academics to develop both the conceptual framework and its content. Decisions were based on consensus after discussing strategic goals of the health system, information needs of policy makers at the Ministry of Health, Welfare and Sport, and studying existing theory and international experiences with national performance indicator frameworks. Identified objectives and criteria for a framework at the national level, constructed a conceptual model, and selected indicator areas. **Source/Endorsements:** Yes Dutch Ministry of Health **Stakeholder engagement:** Yes Multidisciplinary academic research group at the Ministry of Health, a strategic coordination group, and an intradepartmental project group chaired by a director general of the MoH. The choices for the model and the indicator areas--

	innovations; industry activities in health care Internal business processes perspective = performance of care financiers; quality of health care delivery process; availability of choice of insurer and provider; concentration of care provision; human resources (availability vacancies, and staff satisfaction); substitution of care between professions and between care delivery settings			made in meetings between the three teams--were the result of decision making through a consensus approach after discussing strategic goals of the health system, info needs of policy makers at the MoH, and studying existing theory and international experiences with national performance indicator frameworks. **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically
Terner, 2013[224] **Name:** Policy Priority Set of Indicators Canada **Link:** https://www.longwoods.com/content/23416/healthcare-quarterly/assessing-primary-healthcare-using-pan-canadian-indicators-of-health-and-health-system-performance	**Type of care:** Quality of care **Setting:** Primary healthcare **Population:** Canada **Intended use:** To serve as policy priority set of indicators for primary healthcare in Canada **Defined:** N/A	**Components and included domains:** Expenditure Governance IT Infrastructure Workforce Accessibility Comprehensiveness Coordination Efficiency Appropriateness Acceptability Effectiveness Health Status Safety **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks include domains related to health system infrastructure capabilities, access, care coordination, efficiency, effectiveness, and safety. **Differences:** This framework addresses primary health care, while the 2010 NASEM framework addresses healthcare delivery more broadly. This framework includes specifically expenditure, governance, IT infrastructure, and workforce, while the 2010 NASEM framework includes health system infrastructure capabilities more generally. This framework also includes the domains comprehensiveness, appropriateness, acceptability, and health status, while the 2010 NASEM framework does not.	**Process development:** Not reported **Source/Endorsements:** Yes Canadian Institute for Health Information **Stakeholder engagement:** Unclear Not reported **Evidence-based:** Unclear **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

			Policy levers: This framework addresses policy-relevant indicators for primary healthcare at the health system level. The indicators can be used to support population-based policy development and planning by assessing and monitoring the performance of the primary healthcare system across healthcare regions. **Available measures:** Expenditure = primary health care (PHC) physician remuneration method Governance = PHC needs-based planning IT Infrastructure = Uptake of information and communication technology by PHC providers Workforce = PHC provider supply Accessibility = Population with a regular PHC provider; Wait time for immediate care for a minor health problem; Difficulties accessing routine or ongoing PHC; Difficulties obtaining immediate after-hours care for a minor health problem Comprehensiveness = Scope of PHC services Coordination = Collaborative care with other healthcare organizations Efficiency = Point-of-care access to PHC client/ patient health information Appropriateness = Child immunization; Colon cancer screening; Breast cancer screening; Cervical cancer screening; Screening in adults with diabetes; Eye examinations	

			in adults with diabetes; Anti-depressant medication monitoring Acceptability = Time with PHC provider for patients with chronic conditions Effectiveness = Ambulatory care-sensitive conditions hospitalization rate; Emergency department visits for asthma; Blood pressure control for hypertension; Complications of diabetes Health Status = Overweight and obesity rate; Smoking rate; Fruit and vegetable consumption rate; Physical activity rate Safety = N/A	
Valentine, 2008[228] **Name:** N/A Multiple countries **Link:** https://www.sciencedirect.com/science/article/pii/S0277953607006491	**Type of care:** Quality of care **Setting:** Healthcare **Population:** World population **Intended use:** To address non-clinical aspects of quality of care **Defined:** Dignity = being shown respect; having physical examinations conducted in privacy Confidentiality of information = having your medical history kept confidential; having talks with health providers done so that other people who you don't want to have hear you can't overhear you Choice = being able to choose your doctor or nurse or other person usually providing your healthcare; being able to go to another place for health care if you want to Prompt attention = having a reasonable distance and travel	**Components and included domains:** Dignity Confidentiality of information Choice Prompt attention Autonomy Surroundings or environment Social support Communication **Equity/disparities:** Equity and disparities were not directly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks addresses healthcare quality, and includes access, timeliness, and health systems infrastructure capabilities. **Differences:** The WHO framework includes dignity, confidentiality of information, choice, autonomy, social support, and communication while the 2010 NASEM framework does not. The WHO framework addresses patient experience, while the 2010 NASEM framework does not do so directly. **Policy levers:** Authors stated two broad implications for policy- making. First, responsiveness is a concept encompassing dimensions that resonate with what individuals value and want in their health care. Second, policymakers can use these results from surveys	**Process development:** After field testing in eight countries, the importance question was developed for the responsiveness module in the MCS study. Surveys were subcontracted in countries to principal investigators, who aimed for national coverage (except in India, China, and Nigeria where costs limited coverage to a few states). Data extracted for analysis in this paper include records from interviewer-administered interviews in 41 countries. Following the literature review on which individual-level variables were important covariates with priority or preference rankings, sex, age, educational status, visit to health services in the previous 12 month, and self-assessed health in the previous 30 days were extracted. Frequency and multivariate analyses were used

	time from your home to the health care provider; getting fast care in emergencies; short waiting times for appointments and consultations, and getting tests done quickly; short waiting lists for non-emergency surgery Autonomy = being involved in deciding on your care or treatment if you want to; having the provider ask your permission before starting treatments or tests Surroundings or environment = having enough space, seating and fresh air in the waiting room; having a clean facility (including clean toilets); having healthy and edible food Social support = being allowed the provision of food and other gifts by relatives while in hospital; being allowed the freedom of religious practices Communication = having the provider listen to you carefully; having the provider explain things so you can understand; having time to ask questions		to prioritize efforts when resources are limited. **Available measures:** Dignity: being shown respect; having physical examinations conducted in privacy Confidentiality of information: having your medical history kept confidential; having talks with health providers done so that other people who you don't want to have hear you can't overhear you Choice: being able to choose your doctor or nurse or other person usually providing your healthcare; being able to go to another place for health care if you want to Prompt attention: having a reasonable distance and travel time from your home to the health care provider; getting fast care in emergencies; short waiting times for appointments and consultations, and getting tests done quickly; short waiting lists for non-emergency surgery Autonomy: being involved in deciding on your care or treatment if you want to; having the provider ask your permission before starting treatments or tests Surroundings or environment: having enough space, seating and fresh air in the waiting room; having a clean facility (including clean toilets); having healthy and edible food Social support: being allowed the provision of food and other gifts by relatives while in hospital; being allowed the freedom of religious practices	to describe data and explore associations between individual level and country level characteristics. **Source/Endorsements:** Unclear Lead author is from WHO, and study used WHO survey data, but not clear that this is endorsed by WHO **Stakeholder engagement:** No Suggested by authors, using survey responses from population survey **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) Non-clinical quality of care for healthcare in 41 countries **Validity testing status:** Not tested No indication that this has been tested empirically

			Communication: having the provider listen to you carefully; having the provider explain things so you can understand; having time to ask questions	
Vallejo, 2006[229] **Name:** European Foundation for Quality Management--healthcare-adapted framework Multiple countries **Link:** https://academic.oup.com/intqhc/article/18/5/327/1790505?login=false	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Europe **Intended use:** To serve as a framework for quality improvement in health care organizations **Defined:** Management by processes and facts = Management system designed to fulfill the needs and expectations of all stakeholders; Systematic implementation of the policies, strategies, objectives, and plans of the organization through a clear and integrated set of processes; Deployment, management, and improvement of processes on a day-to-day basis; Decisions based on factually reliable information, which is also used for identification of risks; Information includes data on performance, processes and system capability, stakeholders' needs, expectations, and experiences and performance of other organizations Continuous learning, improving and innovation = Continuously learning from own performance and results and from that of others; Continuous challenging the status quo and seeking opportunities for innovation and improvement that add value Openness to accept and use	**Components and included domains:** Management by processes and facts Continuous learning, improving and innovation Leadership and constancy of purpose Clinical effectiveness Results orientation Staff Partnership development Responsive governance Customer focus Safety **Equity/disparities:** One of the sub-domains of the "responsive governance" domain is: "meeting and exceeding local and global regulations, including concerns on equality and equity to all citizens, regardless of their race, culture, society, demographic, and economic characte **Context:** N/A	**Similarities:** Both frameworks address quality of health care in some way, and includes patient-centeredness (or customer focus), safety, and effectiveness. **Differences:** The EFQM healthcare-adapted framework includes the domains: management by processes and facts; continuous learning, improving and innovation; leadership and constancy of purpose; results orientation; staff; partnership development; and responsive governance, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** N/A	**Process development:** A content analysis was performed to independently identify the contents that defined the elements of both frameworks. Then, using defined criteria, two independent researchers compared the contents of the elements of both frameworks. The elements from both frameworks that were equivalent were aggregated. Several experts discussed the aspects with discrepancies between the two comparisons. Finally, the EFQM framework is adapted to health care by adding to those aggregated elements the aspects that were exclusive from one of the models. **Source/Endorsements:** No Suggested by authors **Stakeholder engagement:** Yes Multidisciplinary panel of 5 experts reviewed comparison of contents and aggregation of elements where results from both independent researchers had discrepancies **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested This framework has been used as the conceptual basis to develop a quality improvement

	ideas from all stakeholders; Maximizing learning across and within the organization by sharing people's knowledge; Benchmark, both internally and externally Leadership and constancy of purpose = Leaders define clear direction of the organization and communicate it; Leaders establish values, ethics, and principles, providing a unique identity for the organization; Leaders at all levels constantly drive others towards excellence; Leaders recognize their stakeholders and work with them; Leaders demonstrate capability to adapt and realign the direction of their organization in the light of the external changing environment; Leaders display role model behaviour and performance, being a reference in the organization Clinical effectiveness = Provision of technical care in the correct manner; Care based on best known scientific guideline; Care provided to those who benefit most (without overuse or underuse); Desired patient outcomes are achieved; Risk-minimized outcomes of care Results orientation = Information gathering and anticipation of needs and expectations of stakeholders; Setting and implementation of policies, strategies, objectives, targets, measures, and plans based on information from stakeholders; Optimization of			plan for a hospital that had undertaken a self-assessment using the EFQM model.

	resources, including maximal use of available technology to provide best possible care; Agility, flexibility, and responsiveness as stakeholder needs and expectations change; Developing and achieving a balance set of results that delight all the organization's stakeholders, including input- related outputs of care/services (given available hospital resources) and efficient staff ratios; Monitoring experiences and perception of stakeholders Staff = Staff satisfaction; Adequate work climate, which promotes a culture of trust, openness, empowerment, and staff and maximizes the involvement of people through shared values (including respect to people); Description of job content and identification of the competencies needed for the organization. Recruitment of staff based on this information; Perspectives and recognition of individual needs. Opportunities for continued learning and training (staff growth and learning), both for personal and for professional development. People are prepared to meet and adapt to changes Supervision, evaluation, compensation, orientation. Seeking to care, reward, and recognize people; Health promotion activities and safety initiatives Partnership development = Seeking out and development of partnerships with other			

	organizations (with customers, society, suppliers, or even competitors); Partnership is based on clearly identified mutual benefit; Partners' work together to achieve shared goals, supporting one another with expertise, resources, and knowledge; Partnership enables to deliver enhanced value to stakeholders through optimizing core competencies; Organizations build a sustainable relationship based on mutual trust, respect, and openness Responsive governance = Meeting and exceeding local and global community's needs and expectations; Integration of the organization in the community, working on mutually beneficial projects with society; Ethical approach in the organization; Transparency and accountability as a responsible organization; Meeting and exceeding local and global regulations, including concerns on equality and equity to all citizens, regardless of their race, culture, society, demographic, and economic characteristics; Ecological sustainability and minimization of any adverse impact; Health promotion; Continuity of care (integrated care delivery); Institutional innovation (growth and learning) Customer focus = Identification of present and future customers for the organization; Segmentation of clients to improve the effectiveness of the			

	responses; Anticipation of customer's future needs and actuation in order to meet them; Responsiveness to customer's needs and expectations. Including, at least: attention to patient rights (dignity, autonomy, and confidentiality), empowerment, prompt attention (timely and continuity of care), accessibility (including choice of provider), quality of basic hospital amenities and access to hospital support network Building and maintaining excellent relationships with all customers; Monitoring and review of customer's perceptions and satisfaction Safety = Hospital structures minimize environmental risk; Service processes minimize risk of care; Patient risk reduction; Staff safety			
van den Berg, 2014[230] Delnoij, 2002; Westert, 2006; RIVM: De Zorgbalans, 2013 [http://bit.ly/1hYwvcH] **Name:** Dutch Health Care Performance Report framework Netherlands **Link:** https://pubmed.ncbi.nlm.nih.gov/24405849/	**Type of care:** Quality of care **Setting:** Healthcare **Population:** Dutch population **Intended use:** To address healthcare performance of Netherlands **Defined:** Health = how healthy are the Dutch? Non-healthcare determinants of health = N/A Health system performance = N/A Healthcare needs = staying healthy, getting better, living with illness or disability, end-of-life care Dimensions of healthcare performance = quality (effectiveness, safety,	**Components and included domains:** Health Non-healthcare determinants of health Health system performance Healthcare needs Dimensions of healthcare performance Equity Efficiency **Equity/disparities:** Equity is a cross-cutting dimension of the framework. **Context:** N/A	**Similarities:** Both frameworks include equity as cross-cutting dimension, and the components safety, effectiveness, access, efficiency, and types of care. **Differences:** In the Dutch framework, efficiency is a cross-cutting dimension, while the in the 2010 NASEM framework, it is not. Health, non-healthcare determinants of health, end of life care, living with disability or illness, getting better, and staying healthy are included in the Dutch framework, while it is not in the 2010 NASEM framework. **Policy levers:** In the 'policy cycle' the Dutch Health Care Performance Report can	**Process development:** Systematic literature review of existing performance measurement systems, extensive consultations with (inter)national health care system experts and academics, conceptual analysis of the indicator domains, and discussions with the Ministry of Health. An initial version of the conceptual framework was based on the Lalonde model and the balanced score card [15]; many of the indicator do-mains and definitions of that model are still used in the DHCPR nowadays. The framework has been further developed, combining parts of existing frameworks in other

	responsiveness), access (accessibility), costs, efficiency Equity = N/A Efficiency = N/A		rationally beplaced between evaluation (accountability) and agenda-setting (for strategic decision making). Continuous exchange between researcher and policymakers is essential. Theoretically, the exchange between information and policy making can nicely be displayed using policy cycles. In the upcoming years, the DHCPR will try to add a more flexible part for which policymakers can suggest indicators that may be followed for a shorter period on top of the stable set. **Available measures:** N/A	countries. For instance the basic health needs from de Agency for Health care Research and Quality framework were included. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes The choice for specific indicators resulted from a dialogue between researchers and policy makers. **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this current version of the criteria has been used (this report is updated every few years)
Veillard, 2004[233] **Name:** N/A Multiple countries **Link:** https://iris.who.int/handle/10665/107591	**Type of care:** Quality of care **Setting:** Hospital performance **Population:** Europe **Intended use:** Highlight dimensions and sub-dimensions of hospital performance **Defined:** Clinical effectiveness = Conformity of processes of care; Outcomes of processes of care; Appropriateness of care Efficiency = Appropriateness (added after discussions during the workshop); Input related to outputs of care; Use of available technology for best possible care Staff orientation = Practice environment; Perspectives and recognition of individual needs; Health promotion activities and	**Components and included domains:** Clinical effectiveness Efficiency Staff orientation Responsive governance Safety Patient-centeredness **Equity/disparities:** Equity and disparities are not explicitly addressed in this framework. **Context:** N/A	**Similarities:** Both frameworks healthcare performance, and includes effectiveness, efficiency, safety, and patient-centeredness. **Differences:** This framework includes staff orientation and responsive governance, while the 2010 NASEM framework does not. **Policy levers:** N/A **Available measures:** Clinical effectiveness and patient safety: Caesarean section rate; Result of audit of medical records for prophylactic antibiotic use; Mortality rates for selected tracers; Readmission rates for selected tracers; Rate of admission after day surgery; Rate of return to ICU for	**Process development:** The work will be done in three stages: analysis of existing models worldwide and definition of a model, congruent with WHO's policy orientations, which could be used throughout Europe; piloting of the agreed model, validated by groups of experts in a range of different countries (between 6 and 9 countries); and development of guidelines to facilitate country implementation. Conclusions of the first workshop were the proposal of generic definitions adapted to the context of this project, definitions of key dimensions of hospital performance promoting a comprehensive model of hospital performance

	safety initiatives; Behavioral responses and health status Responsive governance = System / Community integration; Public health orientation Safety = Patient safety; Staff safety; Environment safety Patient-centeredness = Client orientation; Respect for patients		selected tracer conditions; Prevalence of sentinel events Efficiency: Ambulatory surgery rate (extension: medical acute care) for selected tracers; Median length of stay for selected tracers; Percent of patients admitted on day of surgery, for selected tracers; Average inventory in stock, for pharmaceuticals, blood products, surgical disposable equipment; Operating room unused sessions Patient-centeredness: Average score on overall perception/satisfaction items in patient surveys; Average score on interpersonal aspects items in patient surveys; Percent of cancelled one- day surgical procedures cancelled on day of surgery; Average score on information and empowerment items in patient surveys; Average score on continuity of care items in patient surveys Staff orientation and staff safety: Number training hours on total number of working hours; Training budget on total budget dedicated to staff; Budget dedicated to staff HP activities on total number of full time equivalent staff; Number of days of short-term absenteeism (1 to 3 days) on total number of days contracted (stratified by department and profession); Number of days of long-term absenteeism (more 42 days) on total number of days contracted (stratified by department and profession); Number of work-	measurement and recommendations regarding the design of a benchmarking network allowing participants to compare their own performance to peer hospitals through relevant performance indicators. The group of experts agreed on six key dimensions for assessing hospital performance. During the second workshop, the expansion of the key dimensions of hospital performance and the design and the test of a framework to select evidence-based performance indicators were discussed. The following conclusions were reached: progress was made in the definition of the main concepts of hospital performance; agreement on the sub-dimensions of hospital performance; agreement on a framework for selecting evidence-based indicators and on the orientations of the pilot test. **Source/Endorsements:** Yes WHO Regional Office for Europe **Stakeholder engagement:** Yes Workshops with stakeholders will be held to develop a set of indicators **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication that this has been tested empirically

			related injuries (stratified by type) on total number of staff; Staff excessive working hours Responsive governance and environmental safety: Average score on items on perceived continuity in patient surveys; Percent discharge letters sent to GPs within 2 weeks; Waiting time for selected - tracers (median & variance); % women breastfeeding at discharge	
Veillard, 2005[231] **Name:** Performance assessment tool for quality improvement in hospitals (PATH) framework Multiple countries **Link:** https://academic.oup.com/intqhc/article/17/6/487/1897936?login=false	**Type of care:** Quality of care **Setting:** Hospitals **Population:** Europe **Intended use:** To assess hospital performance **Defined:** Safety = patient safety, staff safety, environment safety Patient-centeredness = client orientation, respect for patients Clinical effectiveness = conformity of processes of care, outcomes of processes of care, appropriateness of care Efficiency = appropriateness of services, input related to outputs of care, use of available technology for best possible care Staff = practice environment, perspectives and recognition of individual needs, health promotion activities and safety initiatives, behavioral responses and health status Responsive governance = system/community integration, public health orientation	**Components and included domains:** Safety Patient-centeredness Clinical effectiveness Efficiency Staff Responsive governance **Equity/disparities:** Equity and disparities are not explicitly addressed in the framework. **Context:** N/A	**Similarities:** Both frameworks include safety, patient-centeredness, effectiveness, and efficiency. **Differences:** The PATH framework addresses hospital performance specifically, while the 2010 NASEM framework addresses healthcare delivery more broadly. The PATH framework includes staff and responsive governance, while the 2010 NASEM framework does not. **Policy levers:** The conceptual model was built by considering and analysing WHO policies relevant to hospital performance, among other things. **Available measures:** Appropriateness of care: cesarean section delivery Conformity of process of care: prophylactic antibiotic use of tracers - results of audit of appropriateness Outcomes of care and safety processes: mortality for selected tracer conditions and procedures; readmission for selected tracer conditions and	**Process development:** PATH was developed through a series of four workshops gathering experts representing most valuable experiences on hospital performance assessment worldwide. An extensive review of the literature on hospital performance projects was carried out, more than 100 performance indicators were scrutinized, and a survey was carried out in 20 European countries **Source/Endorsements:** Yes WHO Regional Office for Europe **Stakeholder engagement:** Yes series of four workshops gathering experts representing most valuable experiences on hospital performance assessment worldwide to provide input on PATH project and framework **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail)

			procedures; admission after day surgery for selected tracer procedures; return to higher level of care (e.g., from acute to intensive care) for selected tracer conditions and procedures within 48 hr; sentinel events Appropriateness of services: day surgery, for selected tracer procedures Productivity: length of stay for selected tracers Use of capacity: inventory in stock, for pharmaceuticals; intensity of surgical theater use Perspective and recognition of individual needs: training expenditures Health promotion and safety initiatives: expenditures on health promotion activities Behavioral responses: Absenteeism - short-term and long-term Staff safety: percutaneous injuries; staff excessive weekly working time System integration and continuity: average score on perceived continuity items in patient surveys Public health orientation - health promotion: breastfeeding at discharge Patient centeredness: average score on overall perception/satisfaction items in patient surveys Interpersonal aspects: average score on interpersonal aspect items in patient surveys Client orientation - access: last minute cancelled surgery	**Validity testing status:** Not tested No indication that the model has been tested empirically

			Client orientation - information and empowerment: average score on information and empowerment items in patient surveys Client orientation - continuity: average score on continuity of care items in patient surveys	
Veillard, 2017[232] **Name:** The Primary Health Care Performance Initiative Conceptual Framework Multiple countries **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5723717/	**Type of care:** Quality of care **Setting:** Primary healthcare **Population:** World population **Intended use:** To help assess primary health care systems performance **Defined:** Governance and leadership = primary health care policies, quality management infrastructure, social accountability Health financing = payment systems, spending on primary health care, financial coverage Adjustment to population health = surveillance, priority setting, innovation and learning Drugs and supplies = N/A Facility infrastructure = N/A Information systems = N/A Workforce = N/A Funds = N/A Population health management = local priority setting, community engagement, empanelment, proactive population outreach Facility organization and management = team-based care organization, facility management capability and leadership, information systems, performance measurement and management	**Components and included domains:** System level determinants: governance and leadership, health financing, adjustment to population health Inputs: drugs and supplies, facility infrastructure, information systems, workforce, funds Service delivery: population health management, facility organization and management, access, availability of effective PHC services, high-quality primary health care) Outputs: effective service coverage Outcomes: health status, responsiveness to people, equity, efficiency, resilience of health system Social determinants and context: political, social, demographic, socioeconomic **Equity/disparities:** Equity is an outcome of the framework. **Context:** Subnational disparities in primary health care performance across regions; guide development of a performance management scorecard for utilization by the Ministry of Health	**Similarities:** Both frameworks includes access, timeliness, safety, care coordination, person/patient centeredness, efficiency, and equity. **Differences:** The primary care framework includes domains such as system level determinants (governance and leadership, health financing, adjustment to population health needs), inputs (drugs and supplies, facility infrastructure, information systems, workforce, funds), service delivery (population health management, facility organization and management), outputs (effective service coverage), outcomes (health status, responsiveness to people, resilience of health system), and social determinants and context (political, social, demographic, socioeconomic), that the 2010 NASEM framework does not. **Policy levers:** Strengthening accountability through better measurement and reporting is vital to ensure progress in improving quality primary health care systems and achieving universal health coverage. The Primary Health Care Performance Initiative provides	**Process development:** The PHCPI team developed the conceptual framework through literature reviews and consultations with an advisory committee of international experts. The team generated 2 sets of performance indicators selected from a literature review of relevant indicators, cross-referenced against indicators available from international sources, and evaluated through 2 separate modified Delphi pr cesses, consisting of online surveys and in-person facilitated discussions with experts. **Source/Endorsements:** Yes Bill and Melinda Gates Foundation, WHO, The World Bank, Ariadne Labs and Results for Development **Stakeholder engagement:** Yes Online surveys and in-person facilitated discussions with experts **Evidence-based:** No **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to different context

	Access = financial, geographic, timeliness Availability of effective PHC services = provider availability, provider competence, provider motivation, patient provider respect and trust, safety High-quality primary health care = first contact accessibility, continuity, comprehensiveness, coordination, person centered Effective service coverage = health promotion, disease prevention, RMNCH, childhood illness, infectious disease, NCDs and mental health, palliative care Health status = N/A Responsiveness to people = N/A Equity = N/A Efficiency = N/A Resilience of health system = N/A Political context = N/A Social context = N/A Demographic = N/A Socioeconomic context = N/A		national decision makers and global stakeholders with opportunities to benchmark and accelerate performance improvement through better performance measurement. Results from the initial PHC performance assessments in low- and middle-income countries are helping guide PHC reforms. National PHC performance dashboards that provide comprehensive and multidimensional snapshots of each country's PHC system performance will likely be used to inform policymakers, advocates, and diverse audiences about the strengths and weaknesses of PHC systems. Countries can assess their PHC systems' strengths and weaknesses in order to set policy and investment priorities, using the PHC framework. **Available measures:** VITAL SIGNS INDICATORS Health financing: per capita PHC expenditure; % of current government health expenditure devoted to PHC; government PHC expenditure as % of all PHC expenditure; OOP PHC expenditure as % of all PHC expenditure Drugs and supplies: availability of essential drugs; availability of vaccines; facilities with clean water, electricity, sanitation Facility infrastructure: health center and health post density	

			Workforce: community health worker, nurse, and midwife density Access: access barriers due to treatment costs; access barriers due to distance Availability of effective PHC services: provider absence rate; diagnostic accuracy; adherence to clinical guidelines; caseload per provider (daily) High-quality PHC: dropout rate 1st to 3rd DTP3 vaccination; dropout rate 1st to 4th antenatal visit; treatment success rate for new TB cases; case-seeking for symptoms of pneumonia Effective service coverage: demand for family planning satisfied with modern method; antenatal care coverage; skilled birth attendance; DTP3 immunization coverage; children with diarrhea receiving appropriate treatment; TB cases detected and cured; people living with HIV receiving ART; ITN coverage for malaria prevention; cervical cancer screening rate; hypertension control; diabetes mellitus control Health status: maternal mortality ration; adult mortality from NCDs; under-5 mortality rate; neonatal mortality rate Equity: difference between 1st and 5th wealth quintiles for under-5 mortality DIAGNOSTIC INDICATORS Health financing: Per capita PHC expenditure; General government health expenditure as a percent of total health expenditure; Public sector tax revenue (percentage of gross	

			domestic product [GDP]); Out-of-pocket expenditures as percentage of total health expenditure Facility infrastructure: Health center density; total density per 100,000 population: health posts; total density per 100,000 population: district + rural hospitals Workforce: community health worker density per 1,000 population; physician density per 1,000 population; nursing and midwifery personnel density per 1,000 population; total density (physicians +CHWs+nurses+midwives) per 100,000 population Funds: provider: Provider has financing to renew and maintain building/equipment (eg, maintenance and/or spare parts budget); Percent of revenue from user's charge; Average cash amount for operation support per facility; Community attendance at management meetings; Health facilities providing supervision and support to community health workers; Regular management meetings; Facility participates in national/facility service level accreditation/certification program and is currently certified; Supportive management: formal training; Supportive management: supervision; Quality assurance processes; Presence of client feedback system; System for eliciting and reviewing client opinion; Average user's charge per visit; Prices (paid by patient)	

			for key priority services, such as maternal and child health services; Cost-related access: are there transportation costs/barriers to your receiving care; Cost-related access: did you not fill a prescription; skipped a recommended medical test, treatment, or follow-up; or have a medical problem but did not visit the doctor or clinic in the past year because of cost?; Cost-related access: did you have serious problems paying for the visit, or were unable to pay medical bills?; Timeliness:When the facility is open and you get sick, would someone see you the same day?; Timeliness: Is it very or somewhat difficult to get medical care in the evening, weekend, or on a holiday without going to the emergency room?; Timeliness:Waiting time for being seen in emergency care need was 2 hours or more Availability of effective PHC services: management of maternal/neonatal complications; treatment accuracy; provider burnout; standard precautions for infection prevention and control High-quality PHC: First-contact access: Is it difficult for you to get medical care at the primary health care facility when you think you need it?; First-contact access: is it easy to get an appointment for a routine concern; First-contact access: When the primary health care facility is closed, is there a phone number you can call	

			when you get sick?; First-contact access: When you have a new health problem, do you go to your regular primary health care facility before going somewhere else?; First-contact access: How far do you regularly travel to receive primary care?; Relational continuity: When you go to your primary health care facility, do you see the same health care provider each time?; Relational continuity: How confident are you that your health care provider at the primary health care facility will look after you, no matter what happens in the future to your health?; Informational continuity: At your primary health care facility, does your regular health care provider always or often know important information about your medical history?; Informational continuity: At your primary health care facility, were there times when the health care provider you were seeing did not have access to your most recent test or exam results?; Informational continuity: At your primary health care facility, is there one unique health record that follows you over time and is it accessible when needed?; Management continuity: Thinking about all the persons you saw in different places, is there one person who ensures follow-up of your health care?; Management continuity: Is the person who ensures your follow-up aware of health care	

			you receive from others?; Management continuity: Is the person who ensures your follow-up in contact with other providers about your health care?; Formal system for referring patients and/or accepting patients; Does your regular health care provider know when you have visited a specialist?; Does your regular health care provider help coordinate referrals to a specialist?; Does your regular health care provider get a report from the specialist about the visit?; Have you often or always felt that your care was well coordinated among different providers? Effective service coverage: tobacco use among adults; diabetes and raised blood glucose Equity: differential rate ratio of Q1-Q5 material mortality ratio	
Vrijens, 2013[234] **Name:** Belgian Health System Performance Report Framework Belgium **Link:** https://pubmed.ncbi.nlm.nih.gov/23927845/	**Type of care:** Quality of care Health system performance **Setting:** Health system performance **Population:** Belgian population **Intended use:** To address health system performance and serve as a framework for the developed set of measurable indicators to be analyzed and interpreted **Defined:** N/A	**Components and included domains:** Health status Health system design and context Health system and health promotion: health promotion, preventive care, curative care, long-term care, end-of-life care Non-medical determinants of health: health behavior / lifestyle, genetic factors, living and working conditions, personal resources, environmental factors Quality: Effectiveness, Appropriateness, Safety, Continuity, Patient Centeredness Accessibility	**Similarities:** Both frameworks include equity as a cross-cutting dimension, and the components access, efficiency, effectiveness, safety, patient centeredness, continuity of care, and types of care. **Differences:** The Belgian framework includes the components health status, non-medical determinants of health (health behavior/lifestyle, genetic factors, living and working conditions, personal resources, environmental factors), health promotion, curative care, end-of-life care, quality, sustainability, and	**Process development:** Based on a systematic review of the literature and a broad consultation of Belgian experts and stakeholders the Dutch and Canadian frameworks were used as a starting point to develop the Belgian performance assessment framework. It was tailored to the Belgian health system context, by defining the scope of the framework as broad as possible (health system instead of healthcare system) and by adding a new dimension directly relevant to policy makers (the

		Efficiency Sustainability Equity **Equity/disparities:** Equity is a cross-cutting dimension of the framework. **Context:** N/A	appropriateness, while the 2010 NASEM framework does not. **Policy levers:** Policy recommendations were made based on the report of the framework and indicator set, and were noted to represent the most important output of the report. The recommendations were to follow warning signals (e.g., overweight and obesity, suicide, coverage of cancer screening, follow-up of guidelines, and more; more national targets are needed, as benchmarking with other European countries does not always provide an answer; and improve health information systems, especially timeliness of data. **Available measures:** Health status: life expectancy (years); health expectancy (at 25 years); self-perceived health (% in good or very good health); infant mortality rate (number of deaths/1000 live births) Accessibility of care (workforce): number of practicing physicians (per 1000 population); number of practicing nurses (per 1000 population) Accessibility of care (financial accessibility): health insurance status of the population (%); co-payments and out-of-pocket expenditures (% of total health expenditures); delay contacts with health services because of financial reasons (%) Accessibility of care (coverage preventive): breast cancer	sustainability of the health system). **Source/Endorsements:** Yes Belgian Health Care Knowledge Centre and Belgian Scientific Institute for Public Health and National Institute for Health and Disability Insurance **Stakeholder engagement:** Yes epresentatives from federal and regional admin- istrations met every four months to provide comments and feedback on draft versions of the report. They also discussed potential political consequences of the report. **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Not tested No indication this has been tested empirically

			screening (% women aged 50-69); cervix cancer screening (% women aged 25-64); vaccination coverage children (% diphteria-tetanos-pertussis-haemophilus influenza B, 3rd dose-coverage; % measles-mumps-rubella, first dose); influenza vaccination (% of the 65+) Accessibility of care (accessibility of long-term care): number of beds in nursing and residential facilities (per 1000 pop aged 65+); informal caregivers (% of the 50+) Accessibility of care (accessibility of end-of-life care): timeliness of palliative care - deaths within one week after start of palliative care service (%) Effectiveness of care: 5-years relative survival rate - breast cancer (%), cervix cancer (%), colon cancer (%); hospital admissions for asthma (per 100,000 pop aged 15+) Effectiveness of care (specific to mental healthcare): suicide rate (number/100,000 pop); involuntary committals (% of all psychiatric hospitalizations) Appropriateness of care: mammograms outside target group (%) - women aged 40-49 years old, women aged 71-79 years old; antibiotics (% amoxicilline compared to amoxyclav); appropriate follow up of adult diabetic patients (regular retinal exams and blood tests) (%); cesarean sections (per 1000 live births)	

			Appropriateness of care (specific to mental healthcare): prescription of (average daily quantity/1000 pop) - antidepressants, antipsychotics Appropriateness of care (specific to end of life care): cancer patients receiving chemotherapy in the last 14 days of life (% of those dying at home/dying at hospital) Safety of care: medical radiation exposure of the Belgian population (MSv/capita); incidence of hospital-acquired MRSA infections (/1000 discharges); incidence of postoperative sepsis (/100,000 discharges); incidence of pressure ulcers in hospitals (%); in-hospital mortality after hip fracture (%); patients prescribed anticholinergic antidepressant drug (% of the 65+ on antidepressants) Continuity of care: patients with a global medical record (%); patients with cancer discussed at the multidisciplinary team meeting (%); GP encounter within the week after hospital discharge (% of the 65+); proportion of contacts with the usual GP (%) (usual provider of care index >= 0.75) Continuity of care (specific to mental healthcare): readmission within 30 days in the same psychiatric hospital, diagnosis of schizophrenia (%); readmission within 30 days in the same psychiatric hospital, diagnosis of bipolar disorder (%)	

			Continuity of care (specific to end of life care): patients having a contact with their GP during the last week of their life (%) Patient centeredness: satisfaction with healthcare services (% good or very good); pain always controlled during hospitalization (% of patients); patients dying in their usual place of residence	
Watson, 2009[235] **Name:** Results-Based Logic Model for Primary Health Care Canada **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2906214/	**Type of care:** Other Results-based logic model for population-based information systems **Setting:** Primary health care **Population:** Canadian population **Intended use:** Serve as framework for population-based information systems so that data can be created and used to generate information to support healthcare policy, management and practice communities that seek to improve quality and account for progress in primary hea **Defined:** N/A	**Components and included domains:** Contexts: social, cultural political, policy, legislative/regulatory, economic and physical contexts, population characteristics and public participation Inputs: fiscal resources, material resources, health human resources Activities (enable PHC delivery): policy- and governance-level activities and decisions, healthcare management-level activities and decisions, clinical activities and decisions Outputs (products and services): PHC products and services = volume, distribution type (e.g., health promotion, disease prevention, curative, rehabilitative, supportive, palliative, referrals) and qualities (e.g., first-contact accessibility, comprehensiveness of services, continuity, cultural sensitivity, interpersonal communication, respectfulness, technical quality of clinical care) Immediate (direct) outcomes: maintain or improve work life of PHC workforce; increased knowledge about health and	**Similarities:** Both frameworks include equity, effectiveness, efficiency, access, types of care, continuity of care, and health systems infrastructure capabilities. **Differences:** Equity is a cross-cutting dimension in the 2010 NASEM framework while it is just a component in the PHC model. The PHC model addresses primary care while the 2010 NASEM framework addresses the health system more broadly. The PHC model includes patient experience, while the 2010 NASEM framework doesn't do so explicitly. **Policy levers:** Policy analysis was used in the development of the framework. The framework is also intended to help create data to generate information to support healthcare policy, management and practice communities that seek to improve quality and account for progress in PHC renewal. **Available measures:** N/A	**Process development:** Policy analysis to identify prominent and recurring themes in relevant policy statements and documents such as the final reports of the Commission on the Future of Health Care in Canada and the Standing Senate Committee on Social Affairs, Science and Technology, as well as objectives of the PHC Transition Fund. Literature review was conducted on exiting conceptual models of health/illness, healthcare and PHC that have been informed by or inform health services and policy research; literature review was also conducted to identify PHC inputs, activities, outputs, and outcomes as well as to substantiate the relationships among them as determined through research. A multi-stage iterative feedback and revision process was used for stakeholder consultations. Stakeholders received formal requests for comment, participated in small focus groups or attended

		healthcare among the population; reduced risk, duration and effects of acute and episodic health conditions; reduced risk and effects of continuing health conditions Intermediate (indirect) outcomes: appropriateness of place and provider, healthcare system efficiency, acceptability, healthcare system equity, Final outcomes: sustainable healthcare system; improve and/or maintain functioning, resilience and health for individuals; improved level and distribution of population health and wellness Contexts and external factors PHC efficiency PHC effectiveness **Equity/disparities:** Healthcare system equity is a subdomain of Intermediate (Indirect) Outcomes. **Context:** 1. To structure a systematic review conducted by a team in Australia to summarize expected outcomes of alternative PHC service delivery models (McDonald et al. 2006); 2. To guide the development and use of a population-based information system at the Centre for Health services and Policy Research at the university of British Columbia; 3. To design a performance measurement and accountability strategy for a foundation that supports PHC services targeted to special		presentations to solicit feedback on draft revisions of the model. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes Multi-stage iterative feedback and revision process for model development was used for stakeholder consultations. **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Applied to different context (to structure a systematic review, to guide development and use of population-based information system at Center for Health Services and Policy Research at UBC, and more listed on page 42)

		populations (Ontario Neurotrauma foundation 2006); 4. To evaluate PHC renewal in the Yukon and community health centres in Central America, China and Ontario; 5. To develop the Canadian Survey of Experiences with Primary Health Care (CSE-PHC) which was conducted by statistics Canada in 2007 at a national level with sponsorship from the Health Council of Canada and in 2008 at the national and provincial levels with sponsorship from the Health Council of Canada and the Canadian Institute for Health Information; and 6. To guide analyses of the CsE-PHC survey data regarding, for example, the simultaneous impact of PHC activities (interdisciplinary teams) on output type (emphasis on health promotion and disease prevention), output qualities (experiences with accessibility; comprehensiveness of services) and intermediate outcomes (acceptability; use of emergency departments and hospitalization; confidence in the health-care system) (khan et al. 2008; Watson et al. forthcoming in Healthcare Policy).		
Weber, 1999[236] **Name:** Overlake Hospital Medical Center Performance Measures US **Link:** N/A	**Type of care:** Quality of care hospital performance **Setting:** Hospital **Population:** Overlake Hospital Medical Center	**Components and included domains:** Quality and cost effectiveness Strategic planning Finance	**Similarities:** Both frameworks include health system infrastructure capabilities in some way. **Differences:** This framework addresses hospital performance	**Process development:** Not reported **Source/Endorsements:** No Suggested by author **Stakeholder engagement:** No Suggested by author

	Intended use: To assess performance of hospital **Defined:** Quality and cost effectiveness = clinical quality; workplace quality; cost effectiveness; patient satisfaction Strategic planning = benefits to community; strategic initiatives Finance = clinical volume; financial performance	**Equity/disparities:** Equity and disparities are not explicitly addressed in this framework. **Context:** N/A	specifically while the 2010 NASEM framework addresses health system delivery more broadly. There is very few overlap between framework components except for health system infrastructure capabilities. **Policy levers:** N/A **Available measures:** Quality and cost effectiveness: Clinical quality: unadjusted mortality rate; perioperative mortality rate; infections per patient day; c-section rate; 15-day readmit rate; 31-day readmit rate; ICU ventilator pneumonia rate; HS outcomes Workplace quality: total employee incidents/FTE; days lost/workplace injury/FTE; employee turnover Cost effectiveness: average LOS; case mix adjusted average LOS; ICU LOS; non acute days Patient satisfaction: med-surg total process sets; OB total process satisfaction; med-surg global satisfaction; OB global satisfaction; ED patients LWBS d/t wait time; % ED patients LWBS d/t wait time Strategic planning: Benefits to community: community health expenses; community health expenses less tax exemption Strategic initiatives: # of primary care physicians; % of East King Count Inpt admits; % of Greater Seattle inpt admits Finance	**Evidence-based:** No **Defined population:** No (target unclear) **Validity testing status:** Not tested No indication that this has been tested empirically

			Clinical volume: inpatient admissions; outpatient volume; adjusted admissions net revenue due to outpatient; % net revenue from outpatient Cinancial performance: case available from operating and nonop revenues; days cash on hand; net income; net operating margin; days revenue in accounts receivable; operating expense/adjusted admission; salary, benefits, registrt/adj adm; supplies/adjusted admission; net patient service revenue; net patient service revenue; adj adm	
Wong, 2010[237] **Name:** China Community Health Services Logic Model for Performance Measurement of Primary Health Care China **Link:** https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2999588/	**Type of care:** Quality of care **Setting:** Primary health care **Population:** China **Intended use:** To help measure performance of primary health care **Defined:** Contexts = community contexts: social, cultural, political, policy, regulatory, economic and physical Inputs = Fiscal resources; Health human resources; Material resources Enabling activities to prepare for service delivery = Policy and governance activities and decision; Health care management activities and decisions; Clinical activities and decisions Outputs = Volume and type: basic public services (illness prevention, health education, and health management), basic medical services (primary care, case management, family	**Components and included domains:** Contexts Inputs Enabling activities to prepare for service delivery Outputs Immediate (Direct) outcomes Intermediate (Indirect) outcomes Final outcomes Efficiency Effectiveness **Equity/disparities:** Equity of the health care system is one of the components of the final outcomes of the framework. **Context:** N/A	**Similarities:** Both frameworks include efficiency, effectiveness, equity, access, care coordination, patient focus, acute health conditions/healthcare, and chronic health conditions/healthcare. **Differences:** The framework by Wong et al. specifically addresses primary health care, while the 2010 NASEM framework addresses health care delivery more broadly. The primary care model includes different contexts, inputs such as fiscal resources and material resources, public services such as health education, medical services such as case management and rehabilitation, costs of the health system, healthy choices and behaviors, and more that the 2010 NASEM framework does not. The primary care framework is separated into contexts, inputs,	**Process development:** First the team constructed the framework and indicators, then sought content validationthrough an intensive interactive process involving policy analysis, critical review of relevant literature and multi- ple stakeholder consultations; the team collected CHS policies related to investment, facilities management, capacity building, register with social health insurance, and so on from the published and grey literature to identify the goals and objectives relevant to CHS service delivery and the role of CHS in China. Then the team conducted a content analysis of the China national and provincial policy documents, spanning 1997-2008. A multi-stage iterative feedback and revision process was used for stakeholder consultations. Focus groups were run separately for providers, researchers and

	planning, and rehabilitation); Quality: access, comprehensiveness, continuity, coordination, communication, patient focus, effectiveness Immediate (Direct) Outcomes = Satisfaction of the CHC workforce; Increase individual capacity: knowledge and activation; Reduced duration and effects of acute conditions; Stabilization of chronic health conditions Intermediate (Indirect) Outcomes = Healthy choices and behaviors; Improve prevention of acute exacerbations and complications; Public satisfaction with CHS; Appropriateness of place and provider Final outcomes = Better health outcomes; Health care system equity; Lower costs of health system; Public satisfaction with health system Efficiency = N/A Effectiveness = N/A		outputs, immediate outcomes, intermediate outcomes, and final outcomes, while the 2010 NASEM framework is not. Efficiency and effectiveness seem to be crosscutting dimensions of the primary care framework while value and equity are the crosscutting dimensions of the 2010 NASEM framework. **Policy levers:** Part of the reasoning for the development of the model was that Logic Model frameworks can assist policy makers, managers and providers implement targeted quality improvement efforts. It can offer guidance in the development of an information system by supporting the: a) identification of relevant performance indicators relevant to policy makers and providers, among other things. Population-based information and reporting systems are needed as policy-makers and managers seek to monitor the performance of Primary Health Care. Policy analysis was one step of the development of the framework, used to help validate the model. **Available measures:** Health human resources: % of qualified health care providers (physicians, nurses, nurse practitioners) in community health settings (CHS) Material resources: % of sub-districts who have at least one community health center	evaluation specialists, and policy-makers. A series of open-ended questions asked about where the logic model categories and whether the connections between the different categories (e.g. immediate, intermediate, and final outcomes) made sense. **Source/Endorsements:** No Model suggested by authors **Stakeholder engagement:** Yes A multi-stage iterative feedback and revision process was used for stakeholder consultations. A series of open-ended questions asked about where the logic model categories and whether the connections between the different categories (e.g. immediate, intermediate, and final outcomes) made sense. **Evidence-based:** Empirically based **Defined population:** Yes (framework target described in detail) **Validity testing status:** Tested Validated through interactive process involving policy analysis, critical review of relevant literature and multiple stakeholder consultations.

			Fiscal resources: amount of financial investment for capital infrastructure Activities - Policy and governance level: the percentage of CHS facilities that can be reimbursed through publicly funded health insurance Activities - Health care management level: % of primary health care providers who completed a two-way referral of patients- a patient is referred for more specialized services or services unavailable through the CHS and that more specialized services (e.g., internal medicine) refer patients to CHS facilities as their place of first contact with the health system Activities - Clinical level: % of CHS facilities who can offer Chinese traditional medicine Outputs - type: % of primary health care organizations who currently provide the following public health services (health education, illness prevention, etc.) Outputs - Volume: % of patients with hypertension who have health care coordinated by a case manager Outputs - quality: % of patients who have a regular doctor; % of patients who were referred to other doctors and have information back; % of patients who report that they were given enough time to discuss their feeling, fears and concerns; % of patients who rated the quality of CHS good or excellent	

			Increased individual capacity: % of residents who have increased knowledge, skills, and confidence to manage their health Reduced risk of ill-health and duration and effects of acute conditions: incidence rate of 0-3 year old children with low weight Stabilization of chronic conditions: control rate of patients with chronic diseases (such as hypertension) Maintain or improve satisfaction of health care workforce: CHS provider satisfaction with CHS sector Healthy choices and behaviors: % of population who currently engage in regular physical activity Improve prevention of complications and acute exacerbations: hospitalization rate of patients with chronic diseases Public acceptability of CHS: patients' satisfaction with CHS Appropriateness of place and provider: % of patients who first see a CHS physician Better health outcome: decreased premature mortality Health care system equity: distribution of health outcome among different populations Lower costs of health system: health expenditure per capita in international dollars Public satisfaction with health system: residents' satisfaction with health system	

Appendix D. Framework Component Table

Table D.1. Framework component table

Study ID Name of framework	Equity	Disparities	Value	Access	Effectiveness	Safety	Timeliness	Patient/ family centeredness	Efficiency	Types of care	Care coordination	Continuity of care	Patient experience	Health system infrastructure capabilities	Social determinants of health
Abu Jaber, 2022[92] Balanced Scorecard-Based Hopsital Performance Measurement Framework	No	No	No	No	No	No	Yes	Yes	No	No	No	No	Yes	No	No
Adams-Best, 2001[93] Quality Assessment Framework	No	No	No	Yes	No	No	No	No	No	No	No	No	No	Yes	Yes
Aguilar-Gaxiola, 2014[29] Matrix of Determinants of Health, Indicators, and Measures by Level of Jurisdiction	No	Yes	No	Yes	No	No	No	No	No	No	No	No	Yes	Yes	Yes
AHRQ, 2002[94] N/A	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
AHRQ, 2015[8] STEEEP (Six Domains of Healthcare Quality)	Yes	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No
AHRQ, 2018[95] NQMC Measure Domain Definitions	No	No	No	Yes	Yes	No	Yes	No	Yes	No	No	No	No	Yes	Yes

Alami, 2023[97] Sextuple Aim	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No
Al-Ghamdi, 2023[96] Health system performance indicators framework	No	No	No	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No	Yes	Yes	No
Arah, 2003[99] A conceptual model for hospital performance	Yes	No	No	No	Yes	Yes	No	Yes	Yes	No	No	No	No	Yes	No
Arah, 2006[101] Conceptual framework for OECD HCQI Project	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	Yes	Yes
Ashton, 2015[102] Integrate Performance Incentive Framework	Yes	No	Yes	Yes	Yes	Yes	No	No	No	Yes	No	No	Yes	Yes	No
ASPE, 2018[194] CPC+ Logic Model	No	No	No	Yes	No	No	No	No	No	Yes	Yes	Yes	No	No	No
Attree, 1996[103] Model of quality care	Yes	No	No	Yes	Yes	No	No	No	Yes	No	No	No	Yes	Yes	No
Australian Commission on Safety and Quality in Helalthcare, 2010[104] Australian Safety and Quality Framework for Healthcare	No	No	No	Yes	No	Yes	No	Yes	No	No	No	Yes	Yes	Yes	No
Australian Institute of	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes

Health and Welfare, 2023[106] Australian Health Performance Framework															
Bardehle, 2002[107] N/A	No	Yes	No	No	Yes	No	No	No	No	Yes	No	No	No	Yes	Yes
Barton, 2020[108] N/A	No	No	No	Yes	Yes	No	No	No	No	Yes	Yes	No	Yes	No	No
Belgian Health Care Knowledge Center, 2013[109] N/A	No	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes	No	No	No
Berwick, 2008[110] The Triple Aim	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No
Blozik, 2018[111] Evidence-based indicators for the measurement of quality of primary care	No	No	No	No	No	Yes	No	No	Yes	Yes	No	No	No	No	No
Bodenheimer, 2014[112] Quadruple Aim	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No
Booth, 2007[113] Quality framework for Australian general practice	Unclear	Unclear	Unclear	Yes	Yes	Yes	Unclear	Yes	Yes	Yes	Unclear	Unclear	Unclear	Unclear	Unclear
Brechat, 2024[114] The Hexagonal Aim or Diamond of the Six Aims	Yes	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No
Brindis, 2006[36] Cycle of Clinical Therapeutic Effectiveness	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No

Campbell, 1998[116] N/A	No	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	Yes	No
Campbell, 2000[115] Systems based model for assessing care	Yes	No	No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	No
Canadian Institute for Health Information, 2013[118] CIHI's Health System Performance Framework	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	Yes	Yes
Carinci, 2015[119] Revised OECD framework for performance measurement	Yes	No	No	Yes	Yes	Yes	No	Yes	No	Yes	No	No	Yes	No	No
Chen, 2015[123] The conceptual framework for Taiwan's hospital clinical performance indicators	No	No	No	No	Yes	Yes	No	Yes	Yes	No	Yes	Yes	No	Yes	No
Chow-Chua, 2002[124] Singapore Quality Award Framework	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	No
Chowdhury, 2021[125] Model of Care	No	No	No	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No
CIHI, 2004[117] Canadian health indicators framework	Yes	No	No	Yes	Yes	Yes	No	No	Yes	No	No	Yes	No	Yes	Yes
CMS, 2011[122]	No	No	No	No	No	Yes	No	No	No	Yes	Yes	No	Yes	No	No

Quality Measures for Accountable Care Organizations															
CMS, 2022[120] CMS National Quality Strategy	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No	No	Yes	No
CMS, 2022[121] CMS Framework for Health Equity	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	No	No	No
Committee on Quality Measures for the Healthy People Leading Health Indicators, 2013[126] Healthy People 2020 Leading Health Indicator Topics and Leading Health Indicators	No	No	No	Yes	No	No	No	No	No	Yes	No	No	No	No	Yes
Commonwealth Fund, 2004[225] N/A	No	No	No	Yes	Yes	No	Yes	No	No	No	No	Yes	Yes	No	No
Commonwealth Fund, 2006[226] Core Goals and Priorities for Performance Improvement	Yes	No	Yes	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes	No	No	Yes	No
Council of Australian Governments, 2011[105] Report on Government Services Framework	Yes	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No	No	No

Davis, 2013[127] Efficiency, effectiveness, equity (E^3)	Yes	No	No	No	Yes	Yes	No	No	Yes	No	No	No	No	No	No
De Rosis, 2022[128] Adapted version of Donabedian Framework	No	No	No	No	No	No	No	No	No	No	Yes	No	Yes	Yes	No
Donabedian, 1966[129] Donabedian Model	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No
Dover, 2019[130] Health Equity Measurement Framework	Yes	No	No	Yes	Yes	Yes	No	No	No	Yes	No	Yes	No	Yes	Yes
Fisher, 2013[131] N/A	No	Yes	No	Yes	No	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes
Freeman, 2018[132] Framework for assessing regional primary health-care organisations' actions on health equity	Yes	No	No	Yes	No	Yes	No	No	No	Yes	No	No	No	No	Yes
Gardner, 2010[133] Performance measurement framework conceptual model	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No	Yes	No	No
Gauld, 2011[134] N/A	Yes	No	No	Yes	No	Yes	No	Yes	Yes	Yes	Yes	No	No	Yes	No
Haj-Ali, 2017[135] Primary Care Performance Measurement	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Framework for Ontario															
Halfon, 2014[136] 3.0 Transformation Framework	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	No	Yes	No
Ham, 2015[137] N/A	No	No	No	Yes	Yes	Yes	No	No	No	Yes	No	No	Yes	No	No
Handler, 2001[138] Conceptual framework for the public health system as a basis for measuring system performance	Yes	No	No	No	Yes	No	No	No	Yes	No	No	No	No	Yes	No
Health Consumer Powerhouse, 2018[139] Euro Health Consumer Index Matrix 2018	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No	No	No	No
Health Policy Institute of Ohio, 2004[140] Health Disparities Framework	No	Yes	No	Yes	Yes	No	No	No	No	No	No	No	Yes	No	Yes
Health Resources and Services Administration, 2020[141] Advancing Health Center Excellence Framework	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes
Healthy People 2030, 2022[142]	No	No	No	Yes	No	No	No	No	No	No	No	No	No	No	Yes

Social Determinants of Health															
HHS, 2022[227] Social Determinants of Health Ecosystem	Yes	No	No	Yes	No	No	No	No	No	No	No	No	No	No	Yes
Hill, 2015[143] National Institute on Agining Health Disparities Research Framework	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	Yes
Hulton, 2016[144] N/A	Yes	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes	No
Hurst, 2001[145] N/A	Yes	No	No	Yes	No	No	No	No	Yes	No	No	No	No	No	No
Hurtado, 2001[5] National Health Care Quality Framework	Yes	No	No	No	Yes	Yes	Yes	Yes	No	Yes	No	No	No	No	No
Indian Health Service, 2019[146] National Accountability Dashboard for Quality	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes	No
Institute for Healthcare Improvement, 2016[160] Framework for Improving Health Equity	Yes	Yes	No	Yes	No	No	No	No	No	No	No	No	Yes	Yes	Yes
Institute of Medicine, 1993[149] Model of access to personal	Yes	No	No	Yes	Yes	No	No	No	No	No	No	No	No	Yes	Yes

health care services															
Institute of Medicine, 2003[148] N/A	No	No	No	No	No	No	No	No	No	Yes	Yes	No	No	No	No
Institute of Medicine, 2005[147] N/A	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Institute of Medicine, 2010[7] Conceptual framework for categorizing health care quality and disparities measurement	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
ISO, 2003[151] Health indicators conceptual framework	Yes	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	No	Yes	Yes
Jacobs, 2023[152] N/A	Yes	No	No	No	No	No	No	Yes	No	Yes	Yes	No	Yes	No	Yes
Javed, 2022[153] Race as SDOH: upstream, midstream, downstream pathways	Yes	Yes	No	No	No	Yes	No	No	No	No	No	No	No	No	Yes
Jee, 1999[154] N/A	No	No	No	No	Yes	No	No	No	No	No	No	No	Yes	No	No
Jun, 1998[155] N/A	Yes	No	No	Yes	Yes	No	No	No	No	No	No	No	Yes	Yes	No
Kitson, 2013[150] The Fundamentals of Care Framework	No	No	No	No	No	Yes	No	No	No	No	No	No	No	No	No

Kramers, 2003[157] N/A	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes
Kringos, 2010[158] Primary Care System Framework	Yes	No	No	Yes	No	No	No	No	Yes	No	Yes	Yes	No	No	No
Kruk, 2008[159] Framework for health systems performance measures	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	No	No	Yes	Yes	Yes	No
Leggat, 1997[161] Framework for assessing the performance of integrated health delivery systems	No	No	No	No	No	No	No	No	No	No	No	No	Yes	No	No
Levesque, 2020[162] Integrated performance measurement framework	Yes	No	No	Yes	Yes	Yes	No	No	Yes	No	No	No	No	Yes	No
Levitt, 2010[204] Quality Flower/Tool	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	No	No	No
Levitt, 2013[163] Quality Book of Tools	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	Yes	No
Liu, 2013[164] Theoretical framework of holistic hospital management	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes	No
Ludlow, 2022[165] Community-Based Health Care Evaluation Framework	No	No	Yes	Yes	No	No	No	Yes	No	Yes	No	No	No	No	No

Ma, 2023[166] Conceptual Model for Health and Health Care Equity	Yes	No	No	Yes	No	No	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes
Marshall, 2004[167] Conceptual Model of the Continuum of Health Promotion, Prevention and Primary Care	No	No	No	No	No	No	No	No	No	Yes	Yes	No	No	No	No
Mary Black Foundation, n.d.[168] Mary Black Foundation's Health Equity Framework	Yes	No	No	Yes	No	Yes	No	No	No	No	No	No	No	No	No
Matos, 2021[169] N/A	Yes	No	No	Yes	Yes	Yes	Yes	No	Yes	Yes	No	No	No	Yes	No
Meade, 2015[170] Model of healthcare disparities and disability	No	Yes	No	Yes	No	No	No	No	No	No	No	No	No	Yes	No
Mears, 2011[171] N/A	No	No	No	No	Yes	Yes	No	No	Yes	No	No	No	Yes	Yes	No
Mistry, 2023[172] AHRQ Research and Action Health Equity Framework	Yes	No	Yes	Yes	No	Yes	No	No	No	No	No	No	No	Yes	Yes
Mosadeghrad, 2012[174] Model of quality measurement in healthcare	No	No	No	No	Yes	No	No	No	Yes	No	No	No	No	Yes	No

Murray, 2000[175] N/A	Yes	No	No	Yes	No	No	No	No	Yes	No	No	No	No	Yes	No
NAM, 2009[91] N/A	No	No	No	No	No	No	No	No	No	Yes	No	No	No	Yes	No
NAM, 2024[176] N/A	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	Yes
NASEM, 2002[6] NHQR and NHDR Framework	Yes	No	No	No	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No
National Association of County and City Health Officials, 2018[178] N/A	Yes	No	No	Yes	No	No	Yes	No	No	No	No	No	Yes	No	No
National Health Ministers Benchmarking Working Group, 1996[181] N/A	No	No	No	Yes	Yes	No	No	No	Yes	No	No	No	No	Yes	No
National Health Performance Committee, 2001[182] National Health Performance Framework	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes	No	Yes	Yes
National Quality Forum, 2009[185] NQF Measurement Framework: Evaluating Efficiency Across Patient-Focused Episodes of Care	No	No	Yes	No	Yes	No	No	Yes	Yes	No	No	No	Yes	No	No
NCQA, 2023[180]	Yes	No	No	No	Yes	No	No	Yes	Yes	Yes	No	No	No	No	No

Person-Centered Outcome Measures															
NCQA, 2023[179] NCQA Health Equity Framework	Yes	No	No	Yes	No	No	Yes	No	No	Yes	No	No	Yes	Yes	No
Nerenz, 1993[186] N/A	No	No	No	No	No	No	No	No	Yes	No	No	No	No	No	No
NHS, 1999[188] NHS Performance Assessment Framework	Yes	No	Yes	Yes	Yes	No	Yes	No	Yes	No	No	No	Yes	No	No
Niagara Health, n.d.[190] Integrated Quality and Safety Framework	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	No	No
NIMHD, 2017[183] National Institute on Minority Health and Health Disparities Research Framework	No	Yes	No	No	No	No	No	No	No	No	No	No	No	No	Yes
NQF, 2017[184] Domains of health equity measurement	Yes	Yes	No	Yes	No	Yes	No	Yes	No	No	No	No	No	No	No
NQMC, n.d.[191] NQMC Measure Domain Framework	No	No	No	Yes	No	No	No	No	Yes	No	No	No	Yes	No	No
NQS, 2017[9] National Quality Strategy	No	No	No	Yes	No	Yes	No	Yes	No	No	Yes	No	No	Yes	Yes
Nuckols, 2013[192]	No	No	Yes	No	Yes	No	No	No	No	No	No	No	No	Yes	Yes

Quality-Cost Framework															
Nundy, 2022[193] The Quintuple Aim for Health Care Improvement	Yes	Yes	No	No	No	No	No	No	No	No	No	No	Yes	No	Yes
Ontario Health Quality Council, 2007[196] N/A	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	No	Yes	No	No	Yes	No
Pai, 2016[197] Conceptual framework for patient-perceived hospital service quality	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	No
Pap, 2022[198] N/A	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	No	No
Perera, 2013[199] Quality framework for primary care	Yes	No	No	Yes	Yes	Yes	No	No	No	No	No	No	No	Yes	No
Poker, 2004[1] National Healthcare Disparities Report Conceptual Framework	No	Yes	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	No	No	No
Popovich, 1998[200] Multidimensional performance measurement model	No	No	No	No	No	No	No	Yes	No	No	No	No	Yes	No	No
Proctor, 1999[201] Developmental framework for performance	No	No	Yes	Yes	Yes	No	No	No	Yes	No	No	No	Yes	No	No

measurement in primary care															
Profit, 2010[202] Theoretical Framework for Measuring Quality of Care	Yes	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes	Yes
Purnell, 2016[203] N/A	Yes	Yes	No	No	No	No	No	No	No	No	No	No	Yes	No	No
Rahimi, 2018[205] N/A	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	No
Raising the Bar, 2022[206] Foundational Principles	Yes	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Reeve, 2015[207] Health Service Evaluation Framework	Yes	No	No	Yes	Yes	No	No	No	Yes	No	No	Yes	No	Yes	Yes
Remington, 2015[208] County Health Rankings Model	No	No	No	Yes	No	Yes	No	No	No	No	No	No	No	No	Yes
Rezapour, 2019[209] Iranian primary health care quality framework	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No	No	No	No	No
Ritchie, 2018[210] Quality of Home-Based Medical Care Framework	No	No	No	Yes	No	Yes	No	No	No	No	Yes	No	Yes	No	No
Rowson, 2018[211] Care Excellence Framework	No	No	No	No	Yes	Yes	No	No	No	No	No	No	No	No	No
Samson, 2021[195]	Yes	Yes	No	Yes	No	No	No	Yes	No	No	Yes	No	No	Yes	Yes

ASPE Estimated Relative Contributions to Health															
Santana, 2018[212] Framework for person-centered care	No	No	No	Yes	Yes	No	No	Yes	No	No	Yes	No	Yes	Yes	No
Schoen, 2006[213] National Scorecard on US Health System Performance	Yes	No	No	Yes	No	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No	No
Schoenmakers, 2015[214] N/A	No	No	No	No	No	Yes	No	No	No	Yes	No	Yes	Yes	Yes	No
Schrimmer, 2019[177] NAHQ Healthcare Quality Competency Framework	No	No	No	No	No	Yes	No	No	No	No	Yes	No	No	Yes	No
Sibthorpe, 2007[215] Framework for Performance Assessment in Primary Health Care	Yes	No	No	Yes	Yes	Yes	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Sicotte, 1998[216] Conceptual framework of health care organizations performance	No	No	Yes	No	Yes	No	No	No	Yes	No	No	No	No	Yes	No
Simou, 2014[217] Framework of quality	No	No	No	No	Yes	Yes	Yes	Yes	Yes	No	No	No	No	Yes	No

indicators for hospitals															
Sinaiko, 2019[218] Comprehensive Model of Patient Centered Care and Outcomes	Yes	No	No	Yes	No	No	No	Yes	No	No	Yes	No	No	Yes	No
Smedley, 2003[219] Integrated model of healthcare disparities	No	Yes	No	No	No	No	No	No	No	No	No	No	Yes	No	No
Smith, 1996[221] Quality of Care Framework for Medicaid Managed Care	No	No	No	No	No	No	No	No	No	No	No	No	No	No	No
Smith, 2010[220] N/A	Yes	No	No	Yes	Yes	No	Yes	No	No	No	No	No	Yes	No	No
Tawfik-Shukor, 2007[222] Harmonized Five-Diamond Framework	Yes	No	No	Yes	Yes	Yes	No	Yes	No	No	No	No	No	Yes	No
ten Asbroek, 2004[223] National Performance Indicator Framework for the Dutch Health System	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	No	No	Yes	Yes	Yes	No
Terner, 2013[224] Policy Priority Set of Indicators	No	No	No	Yes	Yes	Yes	No	No	Yes	No	Yes	No	No	Yes	No
Valentine, 2008[228] N/A	No	No	No	Yes	No	No	Yes	No	No	No	No	No	Yes	Yes	No
Vallejo, 2006[229] European Foundation for	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	No	No	Yes	Yes	Yes	No

Quality Management--healthcare-adapted framework															
van den Berg, 2014[230] Dutch Health Care Performance Report framework	Yes	No	No	Yes	Yes	Yes	No	No	Yes	Yes	No	No	No	No	Yes
Veillard, 2004[233] N/A	No	No	No	No	Yes	Yes	No	Yes	Yes	No	No	No	Yes	Yes	No
Veillard, 2005[231] Performance assessment tool for quality improvement in hospitals (PATH) framework	No	No	No	No	Yes	Yes	No	Yes	Yes	No	No	No	No	Yes	No
Veillard, 2017[232] The Primary Health Care Performance Initiative Conceptual Framework	Yes	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Vrijens, 2013[234] Belgian Health System Performance Report Framework	Yes	No	No	Yes	Yes	Yes	No	Yes	Yes	Yes	No	Yes	Yes	Yes	Yes
Watson, 2009[235] Results-Based Logic Model for Primary Health Care	Yes	No	No	Yes	Yes	No	No	No	Yes	Yes	No	Yes	Yes	Yes	Yes
Weber, 1999[236]	No	No	No	No	No	No	No	No	No	No	No	No	Yes	Yes	No

Overlake Hospital Medical Center Performance Measures															
Wong, 2010[237] China Community Health Services Logic Model for Performance Measurement of Primary Health Care	Yes	No	No	Yes	Yes	No	No	Yes	Yes	Yes	Yes	Yes	No	Yes	No

Table D.2. New Domains

ID	New Domains
Fisher, 2013[131]	Symptom or diagnostic assessment Evidence-based pharmacotherapy Evidence-based psychosocial interventions Other somatic interventions Substance use General medical care Forensic or legal issues Outcome assessment Recovery Cultural or ethnic issues Population-based resources Other similar but not the exact same domains: Utilization, cost and efficiency Client/family perceptions of care
Mears, 2011[171]	Data type: derivable, aggregate, special collection Donabedian: structure, process, outcome Data use: judgement from single indicators , judgement framework, benchmarks, outlier identification
ten Asbroek, 2004[223]	Population health information -> Health: genetic layout, environment factors, lifestyle, healthcare Management information -> Healthcare: consumer perspective, financial perspective, internal business processes perspective, innovation perspective
Schoenmakers, 2015[214]	Patient counseling Clinical risk management Compounding Dispensing of medication Monitoring of medication use Self-care support Logistics Quality management Professional education
Brindis, 2006[36]	Guidelines Performance Indicators Performance Outcomes Clinical Trials Concept American College of Cardiology-National Cardiovascular Registry, Guidelines Applied in Practice, AHA Get with the Guidelines Program, etc. Quality Appropriateness
Kringos, 2010[158]	Dimension of the primary care structure = governance of primary care system; economic conditions of the primary care system; primary care workforce development Dimensions of the primary care process = comprehensiveness of primary care services Dimensions of the primary care outcomes = quality of primary care
Valentine, 2008[228]	Dignity Confidentiality of information Choice Prompt attention Autonomy Surroundings or environment Social support Communication

Kramers, 2003[157]	Demography and socio-economic situation = population, socio-economic factors Health status = mortality, morbidity (disease-specific), generic health status, composite measures of health status Determinants of health = personal and biological factors, health behaviors, living and working conditions Health systems = prevention, health protection and health promotion; health care utilization; health expenditures/financing; health care quality/performance
Institute of Medicine, 2003[148]	Cross-cutting systems interventions Living with illness/disability Getting better Coping with end of life care: palliative care Staying healthy
Matos, 2021[169]	Productivity Financial Quality
NIMHD, 2017[183]	Levels of influence: individual, interpersonal, community, societal Domains of influence: biological, behavioral, physical/built environment, sociocultural environment, health care system Biological=Illness/disease Behavioral=Health behaviors, family/work/community functioning, policies and laws Physical/built environment=Personal, household/school/work, community, societal structure Sociocultural environment=Identity, norms, discrimination, societal structure Health care system=Insurance, medical decision-making, availability of services, quality of care, health care policies
Hill, 2015[143]	Key levels of analysis/domains: environmental, sociocultural, behavioral, biological Fundamental factors: ethnicity, gender, age, race, disability status, identity (sexual and gender minorities) Environmental factors=geographical and political, socioeconomic, health care Sociocultural factors=cultural, social, psychological Behavioral factors=coping, psychosocial risk/resilience, health Biological factors=physiological indicators, genetic stability, cellular function and communication
CMS, 2022[120]	Engagement Outcomes and Alignment Resiliency Interoperability and Scientific Advancement
Smith, 1996[221]	Practice Parameter Recipient Household Survey Chart Review Quality Care
NCQA, 2023[180]	Person-Centered Outcome Measures Clinical Care

Samson, 2021[195]	Individual/area characteristics with disparate effects X underlying health status and non-medical factors = income and employment opportunities; financial characteristics; health behaviors; life course; stable housing; good nutrition; views on medical care; playgrounds and green areas Individual/area characteristics with disparate effects X access to care = insurance coverage; affordability; health literacy; transportation; accessibility of facilities; convenient availability of facilities; telehealth access Individual/area characteristics with disparate effects X experience in medical care = provider quality; differences in treatment patterns and quality of providers treating certain groups; differences in care coordination; availability of culturally and linguistically appropriate services; ability to connect with social services Individual/area characteristics with disparate effects X example outcome measures = differences in health status overall; differences associated with particular acute episodes; patient and caregiver experiences with care Systemic drivers of disparities X underlying health status and non-medical factors = societal/structural discrimination (geographic location, area-level income, environmental factors, economic conditions, social support, public health spending, quality of schools) Systemic drivers of disparities X access to care = societal/structural discrimination (employment opportunities, conditions, and benefits; state and local policies; attractiveness of markets to providers and health plans; transportation infrastructure; geographic location; broadband availability) Systemic drivers of disparities X experience in medical care = provider discrimination; provider diversity; financial performance, resources, and capacity of providers; patient mix of local providers; communication barriers Systemic drivers of disparities X example outcome measures = meeting social needs (food security, access to transportation, housing, family and social support) Examples of policies that might affect health equity X underlying health status and non-medical factors = outreach about medical care; health promotion and prevention interventions; increased availability of social services; incentives for plans an providers to network with community organizations; community planning; economic development Examples of policies that might affect health equity X access to care = Medicaid expansion; scope of practice laws; workforce policies; increasing funding for FQHCs and other provider support; support for community health workers and other outreach and care coordination workers Examples of policies that might affect health equity X experience in medical care = integration of social and medical services; care coordination; strong incentives to join APMs for patient-centered coordinated care; provider assistance programs such as QIOs; patient education programs Examples of policies that might affect health equity X example outcome measures = incentivize social needs assessments and referrals; targeted quality improvement activities; investments in research into conditions that primarily affect disadvantaged groups; public reporting on health outcomes by race, ethnicity
ASPE, 2018[194]	Comprehensive primary care functions = care management; patient and caregiver engagement; planned care and population health Use of enhanced, accountable payment = strategic use of practice revenue; build practice analytic capability Optimal use of health IT = EHR-based quality reporting; data exchange; continuous improvement of HIT Continuous improvement driven by data = internal measurement and review; culture of improvement
Sinaiko, 2019[218]	Patient = goals, life circumstances, values and culture, care preferences, health status and symptoms Care team = patient centered measurement, patient engagement and care design, team staff composition, tools and programs, "top of license" work allocation, training Healthcare system = culture, financial incentives, health information technology, patient centered measurement, quality improvement, other structural integration External context = health information technology, community and public agency linkages, financial incentives, policy, insurance design Intermediate patient outcomes Patient outcomes = health outcomes, greater health
Health Policy Institute of Ohio, 2004[140]	Health -- Before Care = income levels, poverty, and other social conditions; safety and adequacy of housing; employment status and type of employment; education levels; lifestyle choices--diet, exercise, tobacco and alcohol use; environmental conditions--air and water quality, pesticide exposure, green space Access to Care (included in existing NHQDR framework, but following subdomains are not) = financial resources; availability and proximity of providers; access to transportation; insurance coverage; regular source of care; language barriers; legal barriers (e.g., eligibility restrictions, illegal immigrants); prior experience with the health care system; cultural preferences--care-seeking behaviors; health literacy levels; diversity of the health care workforce Health Care Delivery = insurance coverage and type; cultural competency levels; patient-provider communications; provider discrimination or bias; differential propensities for certain disease by racial/ethnic populations; patient preferences and adherence to treatment plans; diversity of the health care workforce; appropriateness of care; language barriers
Health Resources and Services Administration, 2020[141]	Governance and Management = governance; leadership; management Workforce = strategic workforce management; recruitment; employee development; employee engagement; retention Financial Sustainability = liquidity; solvency; sufficient profitability; financial agility Population Health and SDOH = population needs assessment and management; community needs and resource mapping; resource allocation; community partnerships and collaborations; track and close social service referral loops Patient Experience = patient activation and engagement; partnership with families and caregivers; building trusting relationships Affordability (and Access) = comprehensive services; affordability; enabling services; community outreach

Donabedian, 1966[129]	Structure = the context in which care is delivered, including hospitals, buildings, staff, financing, equipment Process = transactions between patients and providers throughout the delivery of healthcare Outcomes = the effects of healthcare on the health status of patients and populations
NCQA, 2023[179]	(Equitable) Social Interventions (Equitable) High-Quality Clinical Care (Equitable) Experience of Care (Equitable) Structures of Care Overall Well-Being
Schrimmer, 2019[177]	Regulatory and accreditation Quality review and accountability Professional engagement Quality leadership and integration Performance and process improvement Population health and care transitions Health data analytics
Niagara Health, n.d.[190]	Drivers Extraordinary care Extraordinary innovation Extraordinary teams Extraordinary future Outcomes Community- (and patient-) centered Team focused
Kitson, 2013[150]	Policy level = financial, quality (and safety), governance, regulation and accreditation System level = evaluation and feedback, leadership, culture Psychosocial care recipient needs = communication, being involved and informed, respect, education and information, having values and beliefs considered and respected, dignity, emotional wellbeing, privacy Physical care recipient needs = rest and sleep, personal cleansing and dressing, medication management, toileting needs, eating and drinking, comfort, mobility Relational caregiver actions = being empathetic, helping patients cope, engaging with patients, supporting and involving families and carers, working with patients to set goals, active listening, helping patients to stay calm, being compassionate, being present Relationship = trust, focus, anticipate, know, evaluate
Mary Black Foundation, n.d.[168]	Safe and supportive neighborhood High quality education and employment Affordable and culturally relevant health care
Aguilar-Gaxiola, 2014[29]	Health system services = infectious disease and vaccination rates, cost of health care and insurance coverage, preventive services and screenings, process measures, outcomes measures, patient experience measures, preventable hospitalizations, structural measures, composite measures General health status = life expectancy, infant mortality, birth outcomes, healthy life expectancy, year of potential life lost, physically and mentally unhealthy days, self-assessed health status, limitation of activity, mental health/psychological stress, unintended injury Health-related quality of life and well-being = chronic disease prevalence; physical, mental, and social-related quality of life; well-being/satisfaction; participation in common activities Personal and behavioral factors = lifestyle choice/health related behaviors; cultural beliefs and values; early childhood experiences; language and literacy; alcohol/drug use; spirituality Community socioeconomic composition = level of education; type of employment; unemployment; income; income security; poverty rate; affordable housing; bankruptcy rates; school system; foreclosures; homelessness; quality of housing; industry/built environment; natural environment; violence/crime Disparities = race/ethnicity; gender; physical and mental ability; geography Social cohesion = social integration; social networks; social supports; single parent homes; community competence; social capital Social structure = income equity; racial segregation; political process and power relationships; engagement of non-traditional partners; discrimination

Abu Jaber, 2022[92]	Financial perspective = asset turnover, return on investment, operating income, return on equity, expense per service unit, adherence to budget Quality perspective = avoidable mortality rate, available morbidity rate, adverse events rate, hospital-acquired infection, unplanned readmission within 48 hours Internal business perspective = length of stay, bed utilization, time from door to therapy, patient turnover Learning perspective = employee satisfaction, employees turnover rate, employee training, process improvement initiatives (i.e., implementation of electronic medical records, implementation of quality improvement principles (i.e., six sigma), use of data warehousing, business intelligence, and predictive analytics Patient perspective = patient satisfaction, complaints per 1000 patients, appreciation/complements per 1000 patients, market share
Adams-Best, 2001[93]	Structure: patient variables, professional variables, organizational variables, community variables Process: process redesign, analyze and interpret the data, evaluate and monitor, communicate and facilitate, identify change barriers and opportunities, identify process inefficiency, collaborate, critical pathways Outcomes: patient variables, professional variables, organizational variables, community variables Patient Patient care process team Structural patient variables = age, co-morbidities, severity of illness, economic status (homeless), family supports, patient expectations Structural professional variables = experience, skill, appropriateness of treatments Structural organizational variables = staffing patterns, size (tertiary) and design (matrix, programmatic), technology and equipment, management of funds, policy and philosophy Structural community variables = government funding, community funding, community agencies, support groups, staffing and resources Process = flow-charting to identify process inefficiency; observation and interviews to determine patient needs and process efficiency (procedure times, wait times); analyzing and interpreting data with health records and strategic analysts; communicating findings to team members; organizing case conferences with patient and interdisciplinary team members to determine discharge needs and plan; seeking opportunities to convert inpatient activity to outpatient activity clinical pathways and variance tracking; comparing data with benchmark data; identifying best practices and barriers to change; working collaboratively with the team to develop plans of improvement; process redesign and corrective actions; monitoring and evaluation of outcomes Patient outcome variables = clinical (laboratory values, vital signs), functional (emotional and behavioral status, quality of life), severity of illness, knowledge, satisfaction Professional outcome variables = technical proficiency, appropriateness of treatments (cesarean section rates), complications and incident reports, LOS, practitioner satisfaction Organizational outcome variables = cost and financial indicators (average cost per case, LOS), readmission rates, complications (falls), mortality and morbidity, workload and staff turn over Community outcome variables = ability to retro-transfer, ability to discharge more acute patients into the community, number of alternate level of care patients in hospital, postnatal follow up
Arah, 2006[101]	Health status = health conditions, human function and quality of life, life expectancy and well-being, mortality Non-healthcare determinants of health = health behaviors and lifestyle, personal or host resources, socio-economic conditions and environment, physical environment Dimensions of healthcare performance = quality, responsiveness, cost/expenditure, macro- and micro-efficiency Healthcare needs = staying healthy, getting better, living with illness or disability, coping with end-of-life Health system design and context = other country-related determinants of performance, health system delivery features
Campbell, 2000[115]	Structure = the organisational factors that define the health system under which care is provided (and availability; geographic/physical access; affordability) Process = involves interactions between users and the health care structure; in essence, what is done to or with users; process is the actual delivery and receipt of care; effectiveness of interpersonal care (and affordability; availability) Outcome = consequences of care; health status; user evaluation Physical characteristics = organization of resources, management Staff characteristics = skill-mix, teamworking Clinical care = problem/ needs definition, problem/ needs management Interpersonal care = problem/ needs definition, problem/ needs management Health status = functional status, symptom relief User evaluation = satisfaction, enablement

Carinci, 2015[119]	Health Non-health care determinants of health Macro- and micro-efficiency Health system design, policy and context Healthcare system performance dimensions = quality, cost/expenditure Quality = responsiveness Responsiveness= individual patient experiences, integrated care Health care needs = getting better, living with illness or disability, coping with end of life
Santana, 2018[212]	Structure (health care system/organization level) = co-designing the development and implementation of educational programs; co-designing the development and implementation of health promotion and prevention programs; supporting a workforce committed to PCC; providing a supportive and accommodating PCC environment; developing and integrating structures to support health information technology; creating structures to measure and monitor PCC Process (patient - healthcare provider level) = cultivating communication; respectful and compassionate care; engaging patients in managing their care; integration of care Outcome (patient - healthcare provider - healthcare systems) = patient-reported outcomes
NQMC, n.d.[191]	Clinical quality measures = process, outcome, structure, patient experience Related healthcare delivery measures = user-enrollee health state, management, use of services, cost Population health quality measures = population process, population outcome, population structure, population experience Related population health measures = population health state, population management, population use of services, population cost, population health knowledge, social determinants of health, environment
HHS, 2022[227]	Objectives = improve community conditions, address individuals' social needs, address individuals' healthcare needs, address structural racism, coordination across sectors to achieve holistic care Approaches = whole-of-government, cross-sector, community driven activities Health and Human Services Integration = improve access, equitable delivery, referral networks Upstream = public health and prevention, multi-sector private public partners Midstream = human services Downstream = healthcare
Healthy People 2030, 2022[142]	Economic stability = help people earn steady incomes that allow them to meet their health needs Education access and quality = increase educational opportunities and help children and adolescents do well in school Healthcare quality (and access) = increase access to comprehensive, high-quality health care services Neighborhood and built environment = create neighborhoods and environments that promote health and safety Social and community context = increase social and community support
Veillard, 2005[231]	Staff = practice environment, perspectives and recognition of individual needs, health promotion activities and safety initiatives, behavioural responses and health status Responsive governance = system/community integration, public health orientation
Remington, 2015[208]	Policies and programs Health factors: health behaviors, clinical care, social and economic factors, physical environment Health outcomes Health behaviors = tobacco use, diet and exercise, alcohol and drug use, sexual activity Clinical care = quality of care Social and economic factors = education, employment, income, family and social support, community safety Physical environment = air and water quality, housing and transit Health outcomes = length of life, quality of life
Levitt, 2010[204]	Eight categories that incorporate the common elements of family practice activities: Integrated Appropriate practice resources Five values integral to developing a sustainable quality-improvement culture: Continuous quality improvement Self-reflection Voluntary Patient/consumer involvement Interdisciplinary team

Murray, 2000[175]	Social systems = education, health, economic, political, other Social goals = education, health, consumption, participation, other Health = improve the health of the population Responsiveness to expectations = respect for persons (respect for dignity, respect for individual autonomy, respect for confidentiality); client orientation (prompt attention to health needs, basic amenities, access to social support networks for individuals receiving care, choice of institution and individual providing care) Fairness in financial contribution = quality Instrumental goals = community involvement, innovation or sustainability Goal performance, composite goal performance and efficiency = N/A Performance of subsystems or organizations = N/A Factors explaining the health system = financing, provision, stewardship, and resource generation Financing = revenue collection, fund pooling, purchasing Provision of health services = personal health services, non-personal health services Resource generation = human resources, physical resources such as facilities and equipment, and knowledge Stewardship = overall system design, performance assessment, priority setting, intersectional advocacy, regulation, consumer protection
Meade, 2015[170]	Health status = health conditions, secondary conditions Body functions and structures = impairments Activities = ability / disability, ADL/IADL, work/household limitations Participation = N/A Environmental factors = transportation, location, natural/built environment, policies, health system (including provider attitudes, etc.) Personal factors = race/ethnicity, gender, marital status, health beliefs, education, health literacy, insurance, attitudes, preferences
Rezapour, 2019[209]	Governance
Nuckols, 2013[192]	External factors = community characteristics; demographic characteristics; specific clinical circumstances; total health care costs for population; circumstance-specific health care costs Structure = general structural characteristics; circumstance-specific characteristics; quality improvement systems; structure-related health care costs (cost, circumstance-specific characteristics; cost, quality improvement systems) Process = appropriateness of care (necessary, appropriate, uncertain/unhelpful, or inappropriate); medical errors; process-related health care costs (cost, necessary; cost, appropriate; uncertain/unhelpful; cost, inappropriate; cost, medical errors) Outcome = diseases and conditions (disease progression, complications of disease, complications of care); health status; functional status; length and quality of life; outcome-related health care costs (cost, disease progression; cost, disease complications; cost, care complications); functional-decrement costs; economic value, preserving length and quality of life
Rowson, 2018[211]	Caring = respecting and involving people who use services, care and welfare of people who use services Responsive = cooperating with other providers, complaints Well led = assessing and monitoring the quality of service provision
Simou, 2014[217]	Quality Responsiveness = staff orientation Utilization
Ritchie, 2018[210]	Provider and practice activities = assessment, patient and caregiver education Provider competency = provider competency Patient, caregiver, outcomes = quality of life, goal attainment (shared decision-making and avoid inappropriate care), patient and caregiver experience, cost/affordable care

Levesque, 2020[162]	Patient needs and expectations Healthcare functions, processes and context Outcomes Receipt and experience of services Coverage Adaptability Resilience Appropriateness Productivity Sustainability Impact
Mosadeghrad, 2012[174]	Healthcare services Tangibles (environment) Intangibles (empathy, efficacy)
Perera, 2013[199]	Structure: practice environment, operational safety, practice systems, practice and practitioner accreditation, practice protocols, sentinel/adverse events reporting Process: clinical care/technical interventions, practice relationships (internal, external), suitable use and ethical application of knowledge and skills by practitioners Outcome: health status, user appraisal, cost of the service
Ludlow, 2022[165]	Aims = improved health outcomes, improved experience of care Health system outcome measures = mortality (mental health, addictions); quality of life, PROM; cost of care; avoidable hospitalization; avoidable emergency department use; E-Health penetration; person-centered satisfaction of care (Global PREMs) Short-term impact = avoidable hospitalization; avoidable emergency department use Long-term impact = mortality (mental health, addictions); quality of life, PROMS; cost of care, avoidable hospitalization; avoidable emergency department use; person-centered satisfaction of care/PREMs
Liu, 2013[164]	Stakeholder perspectives (patient, employee, management) Assessment properties (healthcare outcomes, performance shaping factors) Healthcare outcomes (satisfaction, health status, quality Performance shaping factors (structure, process, culture, climate)
Wong, 2010[237]	Contexts Inputs Enabling activities to prepare for service delivery Outputs Immediate (Direct) outcomes Intermediate (Indirect) outcomes Final outcomes
Veillard, 2017[232]	System level determinants: governance and leadership, health financing, adjustment to population health Inputs: drugs and supplies, facility infrastructure, information systems, workforce, funds Service delivery: population health management, facility organization and management, availability of effective PHC services, high-quality primary health care) Outputs: effective service coverage Outcomes: health status, responsiveness to people, resilience of health system Social determinants and context: political, social, demographic, socioeconomic
Levitt, 2013[163]	Integrated Appropriate practice resources
Gardner, 2010[133]	Patient centered health care system interactions Measure aggregation categories Performance measure domains

Proctor, 1999[201]	Health promotion Service development and innovation Patient experience Cost effectiveness Outcomes
Chen, 2015[123]	Responsive governance Staff orientation
Freeman, 2018[132]	All domains in the framework (listed below) are related to health equity, but are not explicitly in the existing NHQDR framework: Health equity as a goal of the organization Collect health equity information Plan and enact effective strategies to address inequities: Evaluate equity impact of general initiatives, e.g., through an EFHIA; Community participation and engagement with communities affected by health inequities; Orient local PHC services towards health equity; Address determinants of local health inequities Reduced health inequities in region
Al-Ghamdi, 2023[96]	Spend and cost Experience Outcomes
Dover, 2019[130]	Socioeconomic, cultural, and political context Social stratification process Health policy context Social location Social circumstances Material circumstances Psychosocial stressors Appraisal and coping Biology Environment Health-related behaviors Health beliefs Stress response Health state Pre-existing health state Need Utilization of health-promoting resources Acceptability Appropriateness Availability Health outcome
Javed, 2022[153]	SDOH Upstream pathways from SDOH to racial inequity Midstream determinants Downstream determinants Disease

Attree, 1996[103]	Public/society Patient/client Medicine Nursing Purchaser Provider Management Structural criteria Process criteria Outcome criteria Micro contextual variables Macro contextual variables Global contextual variables
National Health Performance Committee	Health status and outcomes: health conditions, human function, life expectancy and well-being, deaths Determinants of health: environmental factors, socioeconomic factors, community capacity, health behaviors, person-related factors Health system performance: appropriate, responsive, capable, sustainable
Hurst, 2001[145]	Health outcome indicators Responsiveness indicators
Hurtado, 2001[5]	Staying healthy Getting better Living with illness or disability Coping with end-of-life
ISO, 2003[151]	Health status (well-being, health conditions, human function, deaths) Non-medical determinants of health (health behaviors, social and community factors, environmental factors, genetic factors, socio-economic factors) Health system performance (acceptability, appropriateness, competence, security, communication) Community and health system characteristics (population, health system)
Arah, 2003[99]	Staff orientation Responsive governance
Sibthorpe, 2007[215]	Government Primary health care services and programs Stewardship Organizational structures and processes Processes of care received by patients/clients, families and communities Intermediate outcomes for patients/clients, families and communities Tier 1 (health status and outcomes) Tier 2 (determinants of health) Tier 3 (health system performance)
CIHI, 2004[117]	Health status = health conditions, human functions, well-being, deaths Non-medical determinants of health = health behaviors, living and working conditions, personal resources, environmental factors Healthcare performance = acceptability, appropriateness, competence Community and healthy system characteristics = community, health system
Australian Institute of Health and Welfare	Determinants of health: socioeconomic factors, health behaviors, personal biomedical factors, environmental factors Health system: appropriateness, sustainability Health status: health conditions, human function, wellbeing, deaths Health system context: demographics; community and social capital; governance and structure; financing; workforce; information, research and evidence

Council of Australian Governments, 2014[105]	Objectives: performance
CMS, 2022[121]	Priority 1: Expand the Collection, Reporting, and Analysis of Standardized Data Priority 2: Assess Causes of Disparities Within CMS Programs, and Address Inequities in Policies and Operations to Close Gaps Priority 3: Build Capacity of Health Care Organizations and the Workforce to Reduce Health and Health Care Disparities Priority 4: Advance Language Access, Health Literacy, and the Provision of Culturally Tailored Services Priority 5: Increase All Forms of Accessibility to Health Care Services and Coverage
AHRQ, 2015[8]	N/A
Smedley, 2003[219]	Patient input Social, economic and cultural influences Data Interpretation Intervention Stereotyping Prejudice Racially disparate clinical decisions
Canadian Institute for Health Information	SDOH Health system inputs and characteristics Health system outputs Health system outcomes Contexts (political, cultural, demographic, economic)
NHS, 1999[188]	Health improvement Health outcomes of NHS care Patient/carer experience
Ontario Health Quality Council, 2007[196]	Appropriately resourced Integrated Focused on population health
Commonwealth Fund, 2006[226]	High quality System capacity to improve
Stiefel, 2012[259]	Prevention and health promotion Upstream factors: socioeconomic factors, physical environment Individual factors: genetic endowment, behavioral factors, physiological factors, spirituality, resilience Intermediate outcomes: disease burden and injury Health outcomes: health and function, mortality Medical care Quality of life: well-being

Institute of Medicine, 1993[149]	Barriers (structural, financial, personal) Use of services (visits, procedures) Mediators (appropriateness, efficacy of treatment, quality of providers, patient adherence) Outcomes (health status)
Aday, 1974[245]	Health policy (financing, education, manpower, organization) Characteristics of population at risk (predisposing, enabling, need) Consumer satisfaction (convenience, costs, courtesy, information, quality) Utilization of health services (type, site, purpose, time interval) Characteristics of health delivery systems (organization)
Campbell, 1998[116]	Prescribing: Effective delivery of appropriate health care, and delivery Gatekeeping: Effective delivery of appropriate health care
van den Berg, 2014[230]	Health Non-healthcare determinants of health Health system performance Healthcare needs = staying healthy, getting better, living with illness or disability, end-of-life care Dimensions of healthcare performance = quality (responsiveness), costs
Sicotte, 1998[216]	Adaptation-related dimensions: capacity to acquire resources; ability to mobilize external support; consistency with social values and requirements; responsiveness to population needs; capacity for market presence; ability for innovation and learning Goal attainment-related dimensions: stakeholder satisfaction with outcomes Culture and values-related dimensions: consensus with fundamental values; organizational climate Production-related dimensions: services volume production; coordination of production factors; productivity; quality of care and services Allocation: responsiveness of adaptation processes in relation to the production system Legitimization: impact of goals on values Alignment: congruence of goals with values; appropriateness of adaptation processes in relation to the production system Operational alignment: impact of production system on values; congruence of production system with values Strategic alignment: appropriateness of adaptation processes in relation to goals; relevance of goals in relation to adaptation processes Tactical alignment: appropriateness of the production system in relation to goals; relevance of goals in relation to production Contextual alignment: congruence of adaptation processes with values; impact of adaptation processes on values
Institute for Healthcare Improvement, 2016[160]	Deploy specific strategies to address multiple determinants of health on which care organizations can have a direct impact Socioeconomic status Physical environment Healthy behaviors Healthcare services
Vrijens, 2013[234]	Health status Health system design and context Health system and health promotion: health promotion, curative care, long-term care, end-of-life care Non-medical determinants of health Quality: Appropriateness Sustainability
Jun, 1998[155]	Tangibles: appearance; processes; cleanliness Courtesy: attitude; privacy; professionalism Reliability: consistency (equal treatment); billing accuracy Communication: technical complexity explained; interaction; time spent Competence: education; expected; continual improvement (measurable, empowerment) Understanding customer: patient; physician Responsiveness Caring Patient outcomes Collaboration: teamwork; synergistic package; internal and external to hospital

Haj-Ali, 2017[135]	Integration Focus on population health Appropriate resources
Reeve, 2015[307]	Structure: structure performance Process: utilization performance Outcome: outcome performance Key foundations: Sustainability - essential services; quality of care - national performance indicators; community determinants of health Fundamental enables: Supportive policy; Commonwealth/State relationships; Community readiness to change
Ashton, 2015[102]	Triple Aims: Improved quality and experience of care (and Improved health and equity for all populations and Best value for public health system resources) Life stage (system level measures + local contributory measures) Capability and capacity indicators: Enabling leadership
Gauld, 2011[134]	Healthy lives Quality
Commonwealth Fund, 2004[225]	Appropriateness Indicators Acceptability Indicators
Health Consumer Powerhouse, 2019[139]	Patient rights and information Outcomes Range and reach of services provided Prevention Pharmaceuticals
Ma, 2023[166]	Transitions Quality of care Post-discharge Societal and structural equity Socioeconomic and environmental factors
Jacobs, 2023[152]	Adult: Wellness Behavioral health Pediatric: Wellness Behavioral health
Barton, 2020[108]	Availability of care Experience of care Utilization and risk adjusted utilization Health plan descriptive information Measures collected using electronic clinical data systems
Bardehle, 2002[107]	Demography/social/economy Mortality-based indicators Morbidity and hospital discharges Lifestyle indicators Environment Health care utilization/costs Maternal and child health

Smith, 2010[220]	Population health Individual health outcomes Clinical quality and appropriateness of care Responsiveness of health system Productivity
Belgian Health Care Knowledge Center	Appropriateness Sustainability Grand Total
Marshall, 2004[167]	Health promotion Diagnosis/Treatment: Primary health care; Secondary health care Population-based health services Personalized medical care
Ham, 2015[137]	Page 38: Quality Health outcomes Figure 4: Ensuring that people have a positive experience of care
Schoen, 2006[213]	Right care Better affordability
NHS Group Department of Health, 2014[189]	Domain 4: Ensuring that people have a positive experience of care
Australian Commission on Safety and Quality in	Driven by information
Watson, 2009[235]	Contexts: social, cultural political, policy, legislative/regulatory, economic and physical contexts, population characteristics and public participation Inputs: fiscal resources, material resources, health human resources Activities (enable PHC delivery): policy- and governance-level activities and decisions, healthcare management-level activities and decisions, clinical activities and decisions Outputs (products and services): PHC products and services = volume, distribution type (e.g., health promotion, curative, rehabilitative, supportive, palliative, referrals) and qualities (e.g., comprehensiveness of services, cultural sensitivity, interpersonal communication, respectfulness, technical quality of clinical care) Immediate (direct) outcomes: maintain or improve work life of PHC workforce; increased knowledge about health and healthcare among the population; reduced risk, duration and effects of acute and episodic health conditions; reduced risk and effects of continuing health conditions Intermediate (indirect) outcomes: appropriateness of place and provider, acceptability Final outcomes: sustainable healthcare system; improve and/or maintain functioning, resilience and health for individuals; improved level and distribution of population health and wellness Contexts and external factors

National Quality Forum, 2000[185]	Domain 1 - Patient-level outcomes: health status/health-related quality of life, patient experience with care Domain 2 - Cost and resource use Domain 3 - Processes of care
Chowdhury, 2021[125]	Physical wellbeing Mental wellbeing Social wellbeing Activated person Healthy communities Virtual care Primary care General hospital care Specialized hospital care Keep me well Planned care Women and children Urgent care Last phase
National Health Ministers Benchmarking	Quality Production efficiency Outcomes Investment utilization Human resource management Business operations
Jee, 1999[154]	Health Status Indicators: Mortality Morbidity and Quality of Life: general morbidity; disease-specific morbidity Composite health measure (mortality + morbidity) Indicators of Performance of the Medical-Care System: Quality of medical care
Institute of Medicine, 2005[147]	Ambulatory care Health plans and accountable health organizations End-stage renal disease Longitudinal measures of outcomes and efficiency Comprehensive measurement: Extend quality domains through the development of new measures Longitudinal measurement: Expand a longitudinal perspective to encompass other care settings and clinical conditions; Longitudinal experiences of care; Outcomes and efficiency of care Patient-level, population-level, and systems-level measurement: Develop measures and approaches to measurement that support decision making by leaders at the physician group, hospital, and community levels; Systems-level measures Shared accountability: Develop measures and methods that cost shared accountability; This is a cross-cutting approach that will be fostered by measures in the above six areas
Popovich, 1998[200]	Multisource standards Multisource assessment of caregiver Patient care delivery
AHRQ, 2002[94]	Volume indicators Mortality indicators for inpatient procedures Mortality indicators for inpatient conditions Utilization indicators
Indian Health Service, 2019[146]	Quality Accreditation Workforce

CMS, 2011[122]	Better care for individuals: Patient/caregiver experience Better health for populations: At risk population - diabetes At risk population - hypertension At risk population - ischemic vascular disease At risk population - heart failure At risk population - coronary artery disease
Committee on Quality Measures for the Healthy People Leading Health Indicators	Environmental quality Injury and violence Maternal, infant, and child health Mental health Nutrition, physical activity, and obesity Oral health Reproductive and sexual health Social determinants Substance abuse Tobacco
National Association of County and City Health	Customer perspective: quality, staff attitude
AHRQ, 2018[95]	Clinical quality measures: Process Outcome Structure Patient experience Related healthcare delivery measures: User-enrollee health state Management Use of services Cost Population health quality measures: Population process Population outcome Population structure Population experience Related population health measures: Population health state Population management Population use of services Population cost Population health knowledge Social determinants of health Environment

Table D.3. Relationships between Framework Domains

ID	Relationship between Framework Domains
ten Asbroek, 2004[223]	The genetic layout, environment factors, lifestyle, and healthcare performance affect health. Healthcare performance is comprised of financial perspective, consumer perspective, internal business processes perspective, and innovation perspective.

Brindis, 2006[36]	Concept affects clinical trials, which affects guidelines, which affects performance indicators, which affects performance, which affects outcomes. Outcomes affects American College of Cardiology's National Cardiovascular Registry (ACC-NCDR), guidelines applied in practice (GAP), American Heart Association's Get with the Guidelines Program (GET Guidelines), etc., concept, and clinical trials. ACC-NCDR, GAP, GET Guidelines, etc. affect performance. All of this comprises quality, appropriateness and efficiency.
Kringos, 2010[158]	Dimensions of the primary care structure is comprised of governance of primary care system, economic conditions of primary care system, and primary care workforce development. Dimensions of the primary care process is comprised of access to primary care services, comprehensiveness of primary care services, continuity of primary care, and coordination of primary care. Dimensions of primary care outcomes is comprised of quality of primary care, efficiency of primary care, and equity in health. Dimensions of the primary care structure affects dimensions of the primary care process, which affects the dimensions of primary care outcomes.
Institute of Medicine, 2003[148]	The committee recommends that the priority areas collectively represent the US population's health care needs across the lifespan, in multiple health care settings involving many types of health care professionals. The domain cross-cutting systems interventions (care coordination) connects the domains living with illness/disability (chronic care), getting better (acute care), coping with end of life (palliative care), and staying healthy (preventive care).
Institute of Medicine, 2010[7]	Equity and value are crosscutting dimensions. Care coordination and health systems infrastructure capabilities span across components of quality care, as well as types of care. Types of care is comprised of preventive care, acute treatment, and chronic condition management. Components of quality care is comprised of effectiveness, safety, timeliness, patient/family-centeredness, access, and efficiency.
NIMHD, 2017[183]	Domains of influence include biological, behavioral, physical/built environment, sociocultural environment, and health cares system. Levels of influence include individual, interpersonal, community, and societal. Health outcomes include individual health, family/organizational health community health, and population health. Each of the domains of influence crosses with each of the levels of influence. Each of these results in the Individual Level of Influence together results in Individual Health, each of the results in the Interpersonal Level of Influence together results in Family/Organizational Health, each of the results in the Community Level of Influence together results in Community Health, and each of the results in the Societal Level of Influence together results in Population Health.
Hill, 2015[143]	The levels of analyses include environmental, sociocultural, behavioral, and biological. The environmental level is comprised of geographical and political factors, socioeconomic factors, and health care. The sociocultural level is comprised of cultural factors, social factors, and psychological factors. The behavioral level is comprised of coping factors, psychosocial risk/resilience, and health behaviors. The biological level is comprised of physiological indicators, genetic stability, and cellular function and communication.
Smith, 1996[221]	Practice parameter, recipient household survey, and chart review all affect quality care. Certain unexpected results from a particular survey may trigger a detailed chart review for the patient's physicians.
NCQA, 2023[180]	In terms of person-centered outcome measures, documenting health outcome goal and action steps eventually leads to following up on health outcome goal and measuring progress. In terms of clinical care, identifying what matters to the person (health outcome goal) eventually leads to implementing action steps. All of this leads to more efficiency, effective, and equitable health care for people with chronic and complex needs.
Samson, 2021[195]	Individual/area characteristics with disparate effects crosses with underlying health status and non-medical factors, access to care, and experience in medical care. Systemic drivers of disparities crosses with the same three domains. Examples of policies that might affect health equity crosses with the same three domains. Example outcome measures are available for individual/area characteristics with disparate effects, systemic drivers of disparities, and examples of policies that might affect health equity.
ASPE, 2018[194]	Use of enhanced, accountable payment, optimal use of health IT, continuous improvement driven by data, and comprehensive primary care functions all lead to better care, healthier people, and smarter spending. Patient and caregivers are at the center of the model. Aligned payment reform spans around the entire model (across all domains).

Sinaiko, 2019[218]	The patient-centered delivery system consists of the patient, care team, health care system, and external context. The patient domain is comprised of access, health status and symptoms, care preferences, values and culture, life circumstances, and goals. The patient-centered delivery system leads to intermediate patient outcomes. Intermediate patient outcomes is comprised of patient-centered care. Patient-centered care within intermediate patient outcomes leads to patient-centered delivery system. Intermediate patient outcomes leads to patient outcomes. Patient outcomes is comprised of health outcomes and greater health equity.
Donabedian, 1966[129]	Structure affects process which affects outcome.
NCQA, 2023[179]	The domains equitable social interventions, equitable access to care, equitable high-quality clinical care, equitable experience of care, and equitable structures of care together all affect overall well-being.
Niagara Health, n.d.[190]	Driver affects the domains safe, effective, accessible, team focused, efficient, and patient & community centered, which then affects outcomes (e.g., building a healthier Niagara and ensuring an extraordinary future).
Kitson, 2013[150]	Relationship is at the center of the model, followed by integration of care, comprised of psychosocial care recipient needs, physical care recipient needs, and relational caregiver actions, which is followed by context of care, comprised of a policy level and system level.
Mary Black Foundation, n.d.[168]	High quality education and employment; safe and supportive neighborhoods; and accessible, affordable, and culturally relevant health care together affect health equity.
Abu Jaber, 2022[92]	Hospital performance is comprised of a patient perspective, financial perspective, quality of care perspective, internal business perspective, and learning & growth perspective.
Adams-Best, 2001[93]	Structure, comprised of patient variables, professional variables, organizational variables, and community variables, affects processes and patient care process team, which then affects outcomes, also comprised of patient variables, professional variables, organizational variables, and community variables.
Arah, 2006[101]	Health status affects non-healthcare determinants of health and vice versa. Health status affects healthcare system performance and vice versa. Non-healthcare determinants of health affects healthcare system performance and vice versa. Equity is a cross-cutting dimension for the entire framework (health status, non-healthcare determinants of health, and healthcare system performance). Efficiency is a crosscutting dimension of healthcare system performance. Health system design and context affects healthcare system performance.
Campbell, 2000[115]	Structure affects process which affects outcome.

Carinci, 2015[119]	Health system design, policy and context affects healthcare system performance. Healthcare system performance affects non-healthcare determinants of health and health. Non-healthcare determinants of health affects health. Efficiency is a cross-cutting dimension of healthcare system performance. Equity is a crosscutting dimension of the entire framework (health, non-health determinants of health, and healthcare system performance).
Santana, 2018[212]	Structure affects process, which affects outcome.
Veillard, 2005[231]	The two domains safety and patient-centeredness each cut across the domains clinical effectiveness, efficiency, staff, and responsive governance.
Remington, 2015[208]	Policies and programs affect health factors, which then affects health outcomes.
Meade, 2015[170]	Health status affects access to healthcare and vice versa. Health status affects body functions & structures and vice versa. Access to healthcare affects body functions & structures and vice versa. Health status affects activities and vice versa. Health status affects participation and vice versa. Body functions & structures affects activities and vice versa. Body functions & structures affects participation and vice versa. Activities affects participation and vice versa. Activities affects access to healthcare and vice versa. Activities affects environmental factors and vice versa. Activities affects personal factors and vice versa. Access to health care affects environmental factors and vice versa. Access to healthcare affects personal factors and vice versa. Environmental factors affects personal factors and vice versa.
Nuckols, 2013[192]	External factors affects structure and vice versa. Structure affects process, which affects, process, which affects outcome (diseases and conditions, as well as health status, functional status, and length and quality of life).
Levesque, 2020[162]	There are 10 derived constructs of performance (coverage; accessibility; appropriateness; safety; effectiveness; productivity; efficiency; adaptability; sustainability; resilience). Equity and Impact are overarching constructs determined by the cumulative contribution of all other constructs. These are the 12 key constructors of performance, but their measurement requires the combination of 5 measurable constructs (healthcare resources and structures; patient needs and expectations; healthcare functions, processes and context; receipt and experience of services; outcomes) as they cannot be measured directly.
Mosadeghrad, 2012[174]	Healthcare service affects tangibles and intangibles. Tangibles affect environment. Intangibles affect empathy, efficiency, effectiveness, and efficacy.
Perera, 2013[199]	Internal practice relationships and functional interface between practitioner, management, resources, technology both affect suitable use and ethical application of knowledge and skills by practitioners.
Ludlow, 2022[165]	The aim "improved health outcomes" can be measured by mortality and quality of life, PROM and long-term impact. The aim "improved value of care" can be measured by cost of care, avoidable hospitalization, and avoidable emergency department use, and short- and long-term impact. The aim "improved experience of care" can be measured by access to integrated primary health care, e-health penetration, and person-centered satisfaction of care, and short and long-term impact.

Liu, 2013[164]	The 3 stakeholder perspective (patient, employee, and management) together affect assessment properties, which is comprised of healthcare outcomes and performance shaping factors. Patient safety is comprised of the patient perspective and the healthcare outcome safety/quality. Financial effectiveness is comprised of the management perspective and healthcare outcome effectiveness.
Wong, 2010[237]	Inputs leads to enabling activities to prepare for service delivery, which leads to outputs, which leads to immediate (direct) outcomes, which leads to intermediate (indirect) outcomes), which then leads to final outcomes. Fiscal resources affects health human resources and vice versa. Health human resources affects material resources and vice versa. Fiscal resources and material resources affects policy and governance activities and decisions and health care management activities and decisions. Policy and governance activities and decisions and health care management activities and decisions affects clinical activities and decisions, which then affects volume and type and quality, which then affects increased individual capacity: knowledge and activation, reduced duration and effects of acute conditions, and stabilization of chronic health conditions. Increased individual capacity: knowledge and activation affects educated duration and effects of acute conditions and vice versa. Reduced duration and effects of acute conditions affects stabilization of chronic health conditions and vice versa. Increase individual capacity: knowledge and activation, reduced duration and effects of acute conditions, and stabilization of chronic health conditions affects healthy choices and behaviors, improved prevention of acute exacerbations and complications, public satisfaction with CHS, and appropriateness of place and provider. Healthy choices and behaviors affects improved prevention of acute exacerbations and complications and vice versa. Improve prevention of acute exacerbations and complications affects public satisfaction with CHS and vice versa. Public satisfaction with CHS affects appropriateness of place and provider and vice versa. Healthy choices and behaviors, improved prevention of acute exacerbations and complications, public satisfaction with CHS, and appropriateness of place and provider leads to better health outcome, health care system equity, lower costs of health system, and public satisfaction with health system. Lower costs of health system leads to public satisfaction with health system. Community contexts (social, cultural, political, policy, regulatory, economic and physical) leads to satisfaction of the CHC workforce, volume and type and quality, stabilization of chronic health conditions, appropriateness of place and provider, and public satisfaction with health system.
Veillard, 2017[232]	System level determinants affects inputs, which affects service delivery, which affects outputs, which then affects outcomes. Within service delivery, facility organization and management affects availability of effective primary health care services, which then affects high-quality primary health care.
Proctor, 1999[201]	All domains interact with each other. Patient experience and clinical activity: patients' views about the consultation (being listened to, explanations and information and informed decision making); views and expectations of referrals; and tests and investigations. Patient experience and access: views about appointments; out-of-hours services; home visits; practice-based triage services; and use of urgent appointments. Clinical activity and service development/innovation: clinical governance activities; evidence-based practice; research and development; professional education; and nursing supervision. Clinical activity and cost-effectiveness: developing generic prescribing indicators; reviewing new services in terms of efficiency and quality; and structured PGEA training to meet practice objectives. Health promotion and patient experience: examining the processes involved in provision of cervical smear services; cultural sensitivity; communication skills and appropriateness in healthy lifestyle advice/support; and using lay organizations to develop links with community health/development. All components and outcomes: considering outcomes in terms of health gain for patients; quality of life measures; satisfaction; compliance; and implementing changes in practice following audit/research. Outcomes is at the centered of the model, surrounded by service development & innovation, patient experience, and cost effectiveness. Access, health promotion, and clinical effectiveness surround those four domains.

Freeman, 2018[132]	Health equity as a goal of the organization leads to collecting health equity information, which leads to community participation and engagement with communities affected by health inequities, which leads to planning and enacting effective strategies to address inequities, which is comprised of addressing determinants of local health inequities and orienting local primary health care services towards health equity. Addressing determinants of local health inequities includes equity-sensitive health promotion campaigns targeting individual behavior in their context (e.g., smoking, diet, exercise, alcohol and other drug use), intersectional collaborations to act on local inequities in living and working conditions, and contributions to broader advocacy on social, political, and cultural determinants of health. Equity-sensitive health promotion campaigns targeting individual behavior in their context, e.g. smoking, diet, exercise, alcohol and other drug use, leads to reduced inequities in smoking, diet, and other individual heath behaviors. Intersectional collaborations to act on local inequities in living and working conditions leads to more equitably local living and working conditions. Contributions to broader advocacy on social, political, and cultural determinants of health leads to more equitable distribution of broader social, political, and cultural determinants of health. Orienting local primary health care services towards health equity includes (1) strategies addressing equity of access to local primary health care services (e.g., affordability, availability, and acceptability of services, and engagement strategies with local communities), which leads to improved equity of access to local primary health care services; (2) strategies supporting access to other health care and social services, including other community services, secondary care, and tertiary care, which leads to improved equity of access to health and social services, and (3) strategies addressing equity in quality of care (e.g., counteracting discrimination, attending to power differentials, tailoring treatment, advice, and interventions to the context of people's lives, providing culturally safe care, and trauma and violence-informed care, which leads to improved equity in quality of care in local primary health care services. Collecting health equity information is also followed by evaluating equity impact of general initiatives (e.g., through and EFHIA), which leads to benefits from general initiatives distributed more. Community participation and engagement with communities affected by health inequities leads to collected health equity information, as well as transformed power relationships underpinning inequities. All of this leads to reduced health inequities in region.
Dover, 2019[130]	Socioeconomic, cultural, and political context affects to social stratification process, environment, health-related behaviors, health beliefs, social circumstances, and health policy context. Social stratification process affects to social location. Social location affects to material circumstances and vice versa. Social location affects to social circumstances, psychosocial stressors, environment, and health beliefs. Material circumstances affects to psychosocial stressors, appraisal and coping, biology, environment, health-related behaviors, health beliefs, and accessibility. Social circumstances affects appraisal and coping and accessibility. Psychosocial stressors affects stress response. Biology affects health state. Environment affects health state and accessibility. Health-related behaviors affects health state. Health beliefs affects need and health-related behaviors. Environment affects health-related behaviors and biology. Stress response affects biology, health-related behaviors and health state. Health state affects need. Pre-existing health state affects health state. Health policy context affects acceptability, appropriateness, continuity, safety, effectiveness, and availability. Need affects utilization of health-promoting resources, which then affects health outcome. Among all of these relationships, there are many meditating relationships as well.
Javed, 2022[153]	Upstream pathways from SDOH to racial inequity leads to midstream determinants, which then leads to downstream determinants, which then leads to disease.
Arah, 2003[99]	The two domains safety and patient-centeredness each cuts across the four domains clinical effectiveness, efficiency, staff orientation, and responsive governance.
Sibthorpe, 2007[215]	Indicators of stewardship; organizational structures and process; process of care received by patients/clients, families, and communities; and intermediate outcomes for patients/clients, families and communities all comprise health status and outcomes; determinants of health; and health system performance.
CIHI, 2004[117]	Equity is a crosscutting dimension across health status, non-medical determinants of health, health system performance, and community and health system characteristics.
Australian Institute of Health and Welfare,	Equity is a crosscutting dimension of the entire framework spanning across all domains. Determinants of health affects health system and vice versa. Health system affects health status and vice versa. Health system affects health system context and vice versa. Determinants of health affects health system context and vice versa. Health status affects health system context and vice versa.

Council of Australian Governments, 2011[105]	Performance is comprised of equity, effectiveness, and efficiency. Equity is comprised of access and equity of access indicators. Effectiveness is comprised of access, appropriateness, and quality. Efficiency is comprised of inputs per output unit. Equity can be measured by equity of outcome indicators. Effectiveness can be measured by program effectiveness indicators. Efficiency can be measured by cost effectiveness indicators.
Smedley, 2003[219]	Social, economic and cultural influences affects interpretation and intervention. Patient input affects interpretation. Data affects interpretation. Interpretation affects intervention, which then affects racially disparate clinical decisions. Stereotyping affects interpretation and intervention. Prejudice affects interpretation and intervention.
Canadian Institute for Health Information, 2013[118]	Health system inputs and characteristics affects social determinants of health and vice versa. SDOH affects health system outcomes and vice versa. Health system outputs affects SDOH. Within health system inputs and characteristics, leadership and governance affects health system resources and vice versa; leadership and governance and health system resources affects efficient allocation of resources, adjustment to population health needs, and health system innovation and learning capacity. Efficient allocation of resources affects adjustment to population health needs. Health system innovation and learning capacity affects adjustment to population health needs. Efficient allocation of resources, adjustment to population health needs, and health system innovation and learning capacity together affect access to comprehensive, high-quality health services. Access to comprehensive, high-quality health services affects person-centered care, safety, appropriate and effective care, and efficiently delivered care, which together comprise equity. Person-centered, safe, appropriate and effective, and efficiently delivered care together can lead to improved health status of Canadians, improved health system responsiveness and improved value for money, which together also comprises equity.
Commonwealth Fund, 2006[226]	The four domains high quality care, access and equity for all, efficient care, and system and workforce innovation and improvement all lead to long, healthy and productive lives (at the center of the model).
Institute of Medicine, 1993[149]	Barriers (structural, financial, and personal) affects use of services, which is also affected by mediators (appropriateness efficacy of treatment quality of providers, and patient adherence), and then affects outcomes (health status and equity of services).
Aday, 1974[245]	Health policy affects characteristics of health delivery system and characteristics of population at risk. Characteristics of health delivery system affects characteristics of population at risk, consumer satisfaction, and utilization of services. Characteristics of population at risk affects utilization of health services and consumer satisfaction. Utilization of health services affects consumer satisfaction and vice versa.
Pap, 2022[198]	Structure, process, and outcome domains comprise the three dimensions access, safety, and effectiveness separately.
van den Berg, 2014[230]	Design and contextual information specific to the Dutch healthcare system that is necessary for interpreting health system performance affects healthcare system performance. Healthcare system performance affects non-healthcare determinants of health and vice versa. Non-healthcare determinants of health affects health. Healthcare system performance affects health and vice versa. Equity is a crosscutting dimension across all components of the framework. Efficiency is a crosscutting dimension of healthcare system performance.
Sicotte, 1998[216]	Contextual alignment affects adaptation-related dimensions and culture and values-related dimensions. Strategic alignment affects adaptation-related dimensions and goal attainment-related dimensions. Tactical alignment affects goal attainment-related dimensions and production-related dimensions. Operational alignment affects production-related dimensions and culture and values-related dimensions. Allocation affects adaptation-related dimensions. Alignment affects goal attainment-related dimensions and production-related dimensions. Legitimization affects culture and values-related dimensions.

Vrijens, 2013[234]	Health status affects health system and health promotion and vice versa. Health status affects non-medical determinants of health and vice versa. Health system and health promotion affects non-medical determinants of health and vice versa. Health system design and context affects health system and health promotion. Health system and health promotion is comprised of quality, accessibility, efficiency, and sustainability. Quality is comprised of effectiveness, appropriateness, safety, continuity, and patient centeredness. Equity is a crosscutting dimension of the framework.
Haj-Ali, 2017[135]	Equity is a crosscutting dimension across the framework.
Reeve, 2015[207]	Structure affects process, which affects outcomes. Fundamental enablers affects sustainability (essential services), quality of care national performance indicators, and community determinants of health.
Ma, 2023[166]	Prevention and access, transitions, quality of care, and post-discharge all comprise improved equity in health outcomes. Societal and structural equity is a crosscutting dimension of the four aforementioned domains, and also affects improved equity in health outcomes.
Marshall, 2004[167]	This model is a continuum of health promotion, prevention and primary care, with health promotion on the far left, preventive care in the middle, and diagnosis/treatment (comprised of primary and secondary health care) on the right. At the bottom, population-based health services on the left eventually leads to personalized medical care on the right.
Watson, 2009[235]	Fiscal resources affects material resources and vice versa. Material resources affects health human resources and vice versa. Fiscal resources, material resources, and health human resources affects policy- and governance-level activities and decisions and vice versa. Policy- and governance-level activities and decision affects healthcare management-level activities and decisions and vice versa. Healthcare management-level activities and decisions affects clinical activities and decisions and vice versa. Social, cultural, political, policy, legislative/regulatory, economic and physical contexts, population characteristics and public participation affects policy- and governance-level activities and decisions, healthcare management-level activities and decisions and clinical activities and decisions, as well as outputs (products and services). Primary healthcare products and services affects maintaining or improving work life of primary health care workforce; increased knowledge about health and healthcare among the population; reduced risk, duration, and effects of acute and episodic health conditions; and reduced risk and effects of continuing health conditions. Increased knowledge about health and healthcare among the population affects reduced risk, duration, and effects of acute and episodic health conditions and vice versa. Reduced risk, duration, and effects of acute and episodic health conditions affects reduced risk and effects of continuing health conditions and vice versa. Increased knowledge about health and healthcare among the population; reduced risk, duration and effects of acute and episodic health conditions; and reduced risk and effects of continuing health conditions together affects appropriateness of place and provider, healthcare system efficiency, acceptability, and healthcare system equity, as well as improving and/or maintaining functioning, resilience and health for individuals. Maintaining or improving work life of primary health care workforce affects a sustainable healthcare system. Healthcare system efficiency affects sustainable healthcare system and improving and/or maintaining functioning, resilience and health for individuals. Sustainable healthcare system affects improving and/or maintaining functioning, resilience and heath for individuals, which then leads to improved level and distribution of population health and wellness. Improved level and distribution of population health and wellness leads to social, cultural, political, policy, legislative/regulatory, economic and physical contexts, population characteristics and public participation.
Popovich, 1998[200]	Multisource standards affects multi source assessment of caregiver and vice versa. Patient care delivery affects regulatory, institutional/system, and professional standards and vice versa. Patient care delivery affects supervisor, peers, patient, subordinates, and customers-internal assessment of caregiver, and vice versa.

Appendix E. Included Frameworks

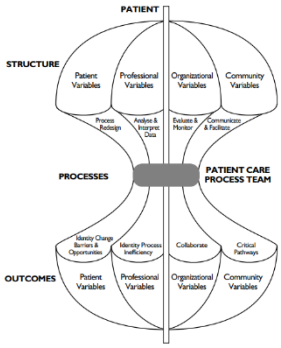
Included frameworks are listed in alphabetical order based on the first author of the published work. If a publication included a visual representation/figure of their framework or model, and the figure was licensed under Creative Comments shared use agreements, it is included here; permissions for other frameworks are still pending.

Abu Jaber AA, Nashwan AJ. Balanced Scorecard-Based Hospital Performance Measurement Framework: A Performance Construct Development Approach. Cureus. 2022 May;14(5):e24866. doi: 10.7759/cureus.24866. PMID: 35702454.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9178100/pdf/cureus-0014-00000024866.pdf

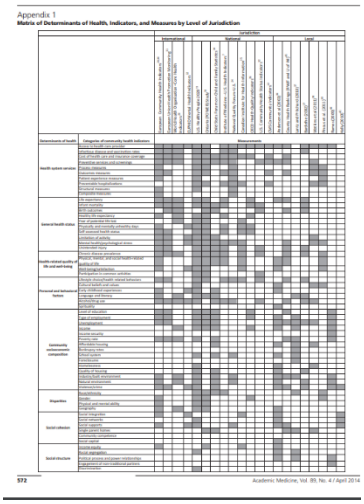
Adams-Best L. Strides in care management: the development of a framework to facilitate quality outcomes. Healthc Manage Forum. 2001 Summer;14(2):44-50. doi: 10.1016/s0840-4704(10)60806-x. PMID: 11414073.
https://www.ncbi.nlm.nih.gov/pubmed/11414073

Figure 1: Quality Assessment Framework



Agency for Healthcare Research and Quality. National Quality Strategy. 2017. https://www.ahrq.gov/sites/default/files/wysiwyg/NQS_overview_slides-2017.pdf. Accessed on September 6, 2023.

Aguilar-Gaxiola S, Ahmed S, Franco Z, et al. Towards a unified taxonomy of health indicators: academic health centers and communities working together to improve population health. Acad Med. 2014 Apr;89(4):564-72. doi: 10.1097/acm.0000000000000198. PMID: 24556775. https://www.ncbi.nlm.nih.gov/pubmed/24556775


Appendix 1
Matrix of Determinants of Health, Indicators, and Measures by Level of Jurisdiction

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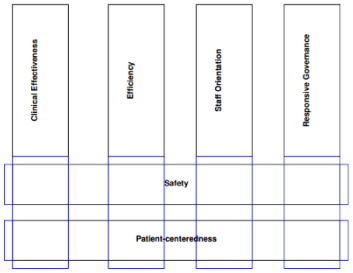
Al-Ghamdi M, AlTamimi M, Al-Azmi N, et al. Development of national framework for health status and health system performance indicators in Saudi Arabia. J Infect Public Health. 2023 Feb;16(2):295-302. doi: 10.1016/j.jiph.2022.12.020. PMID: 36630837.
https://www.sciencedirect.com/science/article/pii/S1876034122003707?via%3Dihub

Arah, O.A., Custers, T.,Klazinga, N.S. Updating the key dimensions of hospital performance: the move towards a theoretical framework. 2003.
https://www.researchgate.net/publication/254902535_Updating_the_key_dimensions_of_hospital_performance_the_move_towards_a_theoretical_framework#fullTextFileContent

Figure 1: A Conceptual Model for Hospital Performance



Arah OA, Westert GP, Hurst J, et al. A conceptual framework for the OECD Health Care Quality Indicators Project. Int J Qual Health Care. 2006 Sep;18 Suppl 1:5-13. doi: 10.1093/intqhc/mzl024. PMID: 16954510.
https://www.ncbi.nlm.nih.gov/pubmed/16954510

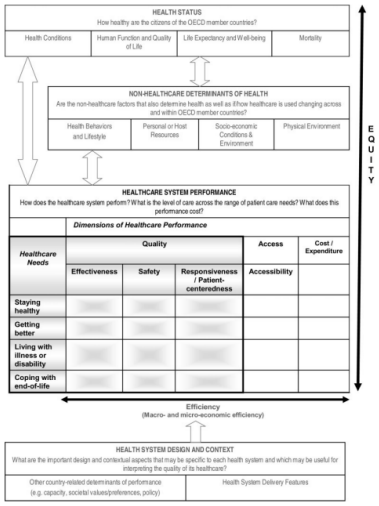


Figure 5 Conceptual framework for Organization for Economic Cooperation and Development Health Care Quality Indicator (HCQI) Project. The shaded area represents the current focus of the HCQI Project.

Ashton T. Measuring health system performance: A new approach to accountability and quality improvement in New Zealand. Health Policy. 2015 Aug;119(8):999-1004. doi: 10.1016/j.healthpol.2015.04.012. PMID: 25979415. https://www.ncbi.nlm.nih.gov/pubmed/25979415

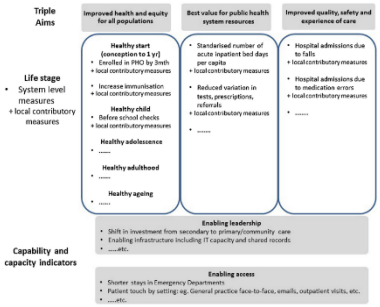


Fig. 1. IPSF framework: levels of performance measurement, with examples of possible indicators. Examples of possible measures are given here: selection of actual measures has yet to be finalised beyond the five system measures for 2014/15 given in Table 1.
Source: Based upon Expert Advisory Group. Integrated performance and incentive framework: final report. Wellington: Ministry of Health, 2014, p. 7.

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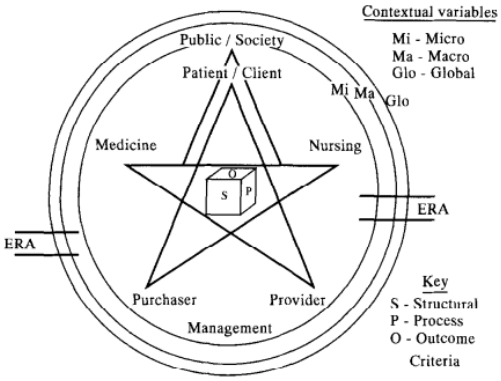

Fig. 4. Conceptual model of 'Quality Care'.

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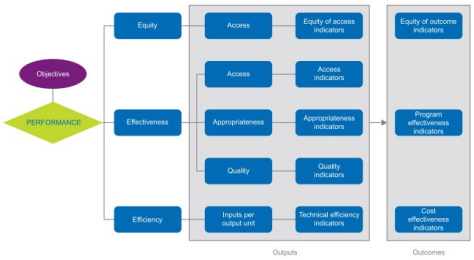
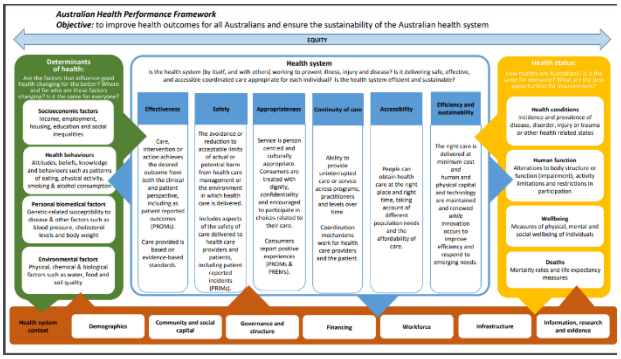


Figure 3: RoGS General Performance Framework

Australian Government, Australian Institute of Health and Welfare. Australia's health performance framework. 2023. https://www.aihw.gov.au/reports-data/australias-health-performance/australias-health-performance-framework. Accessed on December 12, 2023



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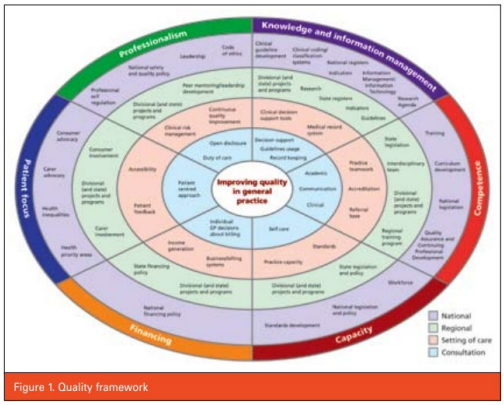

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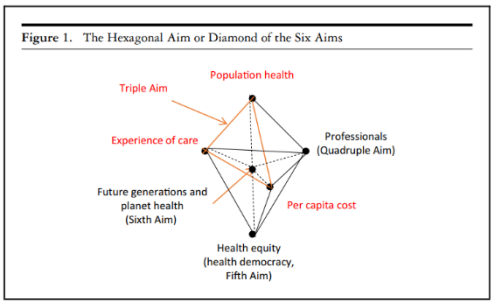

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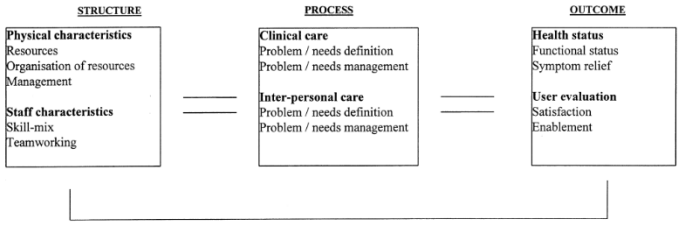

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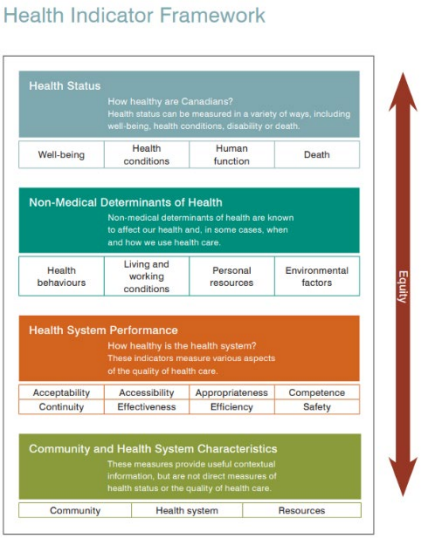

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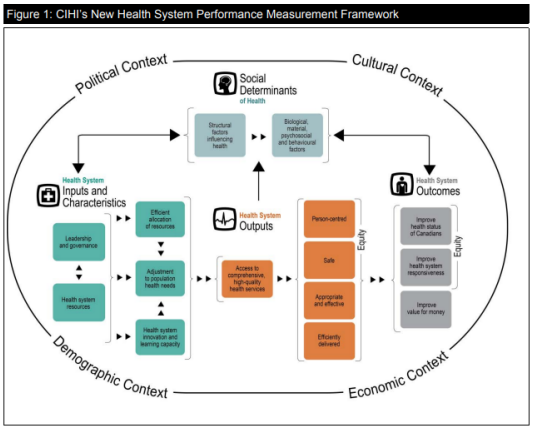
Figure 1: CIHI's New Health System Performance Measurement Framework



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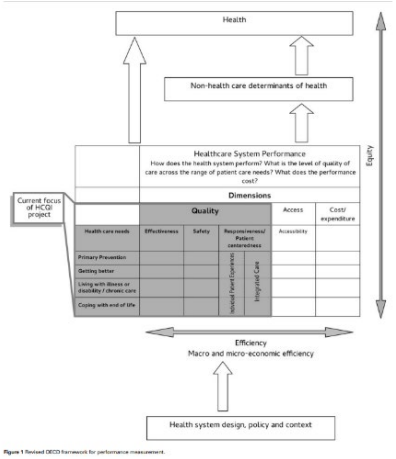

Figure 1 Revised OECD framework for performance measurement.

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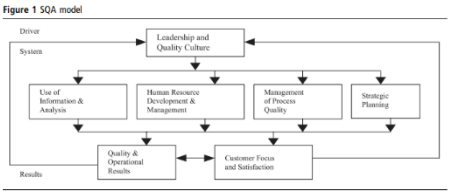

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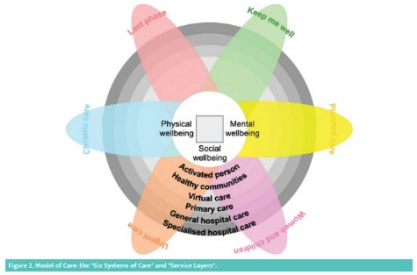

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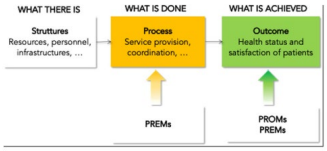

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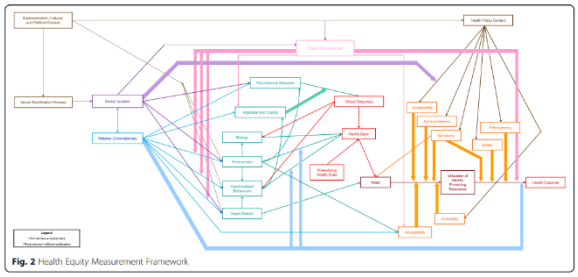

Fig. 2 Health Equity Measurement Framework

https://equityhealthj.biomedcentral.com/counter/pdf/10.1186/s12939-019-0935-0.pdf

Freeman T, Javanparast S, Baum F, et al. A framework for regional primary health care to organise actions to address health inequities. Int J Public Health. 2018 Jun;63(5):567-75. doi: 10.1007/s00038-018-1083-9. PMID: 29453557.
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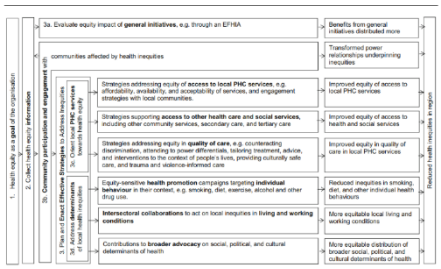

Fig. 1 Framework for assessing regional primary health-care organisations' actions on health equity (Australia, 2017, Regional Primary Health-Care study), *PHC* primary health care, *EFHIA* equity-focused health impact assessment

Gardner LA, Snow V, Weiss KB, et al. Leveraging improvement in quality and value in health care through a clinical performance measure framework: a recommendation of the American College of Physicians. Am J Med Qual. 2010 Sep-Oct;25(5):336-42. doi: 10.1177/1062860610366589. PMID: 20498384.
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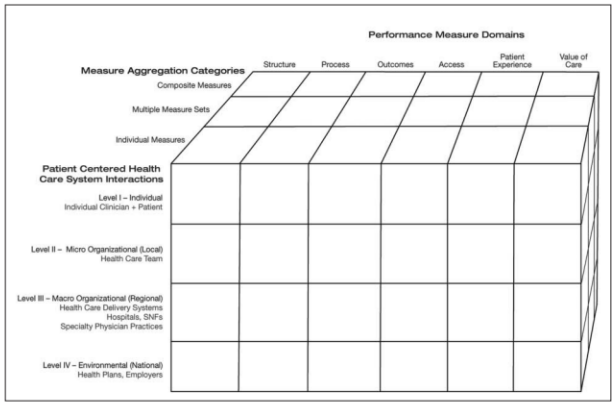

Figure 1. The performance measurement framework conceptual model
Abbreviation: SNF = skilled nursing facility.

Haj-Ali W, Hutchison B, Primary Care Performance Measurement Steering C. Establishing a Primary Care Performance Measurement Framework for Ontario. Healthc Policy. 2017 Feb;12(3):66-79. PMID: 28277205.
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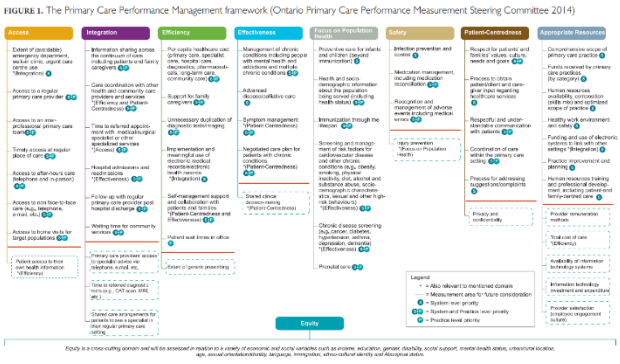
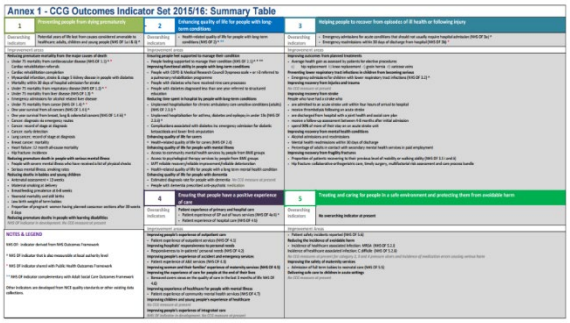


FIGURE 1. The Primary Care Performance Management framework (Ontario Primary Care Performance Measurement Steering Committee 2014)

Ham C, Raleigh V, Foot C, et al. Measuring the performance of local health systems: a review for the Department of Health. The King's Fund. 2015. https://www.kingsfund.org.uk/sites/default/files/field/field_publication_file/measuring-the-performance-of-local-health-systems-dh-review-kingsfund-oct15.pdf

Figure 4 The CCG Outcomes Indicator Set 2015/16



Annex 1 - CCG Outcomes Indicator Set 2015/16: Summary Table

1	Preventing people from dying prematurely	2	Enhancing quality of life for people with long-term conditions	3	Helping people to recover from episodes of ill health or following injury
Overarching indicators	Potential years of life lost from causes considered amenable to healthcare: adults, children and young people (NHS OF 1a-1c & 1d-1f)	Overarching indicators	Health-related quality of life for people with long-term conditions (NHS OF 2)* **	Overarching indicators	Emergency admissions for acute conditions that should not usually require hospital admission (NHS OF 3a)* Emergency readmissions within 28 days of discharge from hospital (NHS OF 3b)*
Improvement areas	Reducing premature deaths from the major causes of death • Under 75 mortality from cardiovascular disease (NHS OF 1.1)* ** • Cardiac disease • Cardiac rehabilitation completion • Myocardial infarction, stroke & stage 3 kidney disease in people with diabetes • Under 75 mortality from respiratory disease (NHS OF 1.2)* • Under 75 mortality from respiratory disease (NHS OF 1.3)** *** • Under 75 mortality from liver disease (NHS OF 1.4)* • Emergency admissions for alcohol related liver disease • Under 75 mortality from cancer (NHS OF 1.6)* ** • Under 75 mortality from cancer (NHS OF 1.7)* ** • One year survival from breast, lung & colorectal cancers (NHS OF 1.8)* • Cancer: diagnosis via emergency routes • Cancer: record of stage at diagnosis • Cancer: early detection • Cancer: time from GP to diagnosis • Breast cancer: mortality • Heart failure 12 month all-cause mortality • Dementia: diagnosis Reducing premature deaths in people with serious mental illness • People with severe mental illness who have received a list of physical checks • Serious mental illness: smoking rates Reducing deaths in babies and young children • Infant mortality (NHS OF 1.9)* • Maternal smoking at delivery • Breastfeeding prevalence at 6-8 weeks • Neonatal mortality and still births • Low birth weight of term babies • Proportion of pregnant women having planned consultant sections after 39 weeks 6 days Reducing premature deaths in people with learning disabilities NHS OF indicator in development: We CCG measures at present	Improvement areas	Enhancing people's ability and support to manage their condition • People feeling supported to manage their condition (NHS OF 2.1)* ** *** Improving care for people with long-term conditions • People with COPD & Medical Research Council Dyspnoea scale +or -2 referred to a pulmonary rehabilitation programme • People with diabetes who have had the three care processes • People with diabetes diagnosed less than one year referred to structured education Reducing time spent in hospital by people with long-term conditions • Unplanned hospitalisation for chronic ambulatory care sensitive conditions (adults) (NHS OF 2.2)* • Unplanned hospitalisation for asthma, diabetes and epilepsy in under 19s (NHS OF 2.3)* • Complications associated with diabetes: by emergency admission for diabetic ketoacidosis and lower limb amputation Improving care for people with dementia • Health-related quality of life for carers (NHS OF 2.4) Enhancing quality of life for people with mental illness • Access to psychological therapy: access to people from BME groups • Access to psychological therapy: access to people from SMI groups • GP reliable research/reliable improvement/reliable deterioration • Health-related quality of life for people with a long-term mental health condition Enhancing quality of life for people with dementia • Quality of life for people with dementia: We CCG measure at present • People with dementia who have had a medication review	Improvement areas	Improving outcomes from planned treatments • Average health gain as measured by patient-reported outcome measures (PROMs) for elective procedures • Hip fracture, knee replacement, hernia, varicose veins, cataract, groin hernia + varicose veins Preventing lower respiratory tract infections in children from becoming serious • Emergency admissions for children with lower respiratory tract infections (NHS OF 3.1)* Improving recovery from stroke and volume • Stroke: rehabilitation Improving recovery from stroke People who have had a stroke who • are admitted to an acute stroke unit within four hours of arrival to hospital • receive thrombolysis (clot busting drugs) • are discharged from hospital with a joint health and social care plan • receive a follow-up assessment between 4-8 months after initial admission • spend 80% of most of their stay on an acute stroke unit Improving recovery from mental health conditions Improving recovery from mental illness • Mental health readmissions within 28 days of discharge • Percentage of adults in contact with secondary mental health services in paid employment Improving recovery from long-term conditions • Proportion of patients responding to their previous level of mobility or walking ability (NHS OF 3.1 and 4) • Hip fracture: collaborative care/frailty care, timely surgery, multifactorial risk assessment and care process bundle
		4	Ensuring that people have a positive experience of care	5	Treating and caring for people in a safe environment and protecting them from avoidable harm
		Overarching indicators	Patient experience of primary and hospital care • Patient experience of GP out of hours services (NHS OF 4a-4c)* • Patient experience of hospital care (NHS OF 4.5)	Overarching indicators	No overarching indicator at present
		Improvement areas	Improving people's experience of outpatient care • Patient experience of outpatient services (NHS OF 4.1) Improving hospitals' responsiveness to personal needs • Patient experience of hospital care (NHS OF 4.5) Improving people's experience of accident and emergency services • Patient experience of A&E services (NHS OF 4.4) Improving women and their families' experiences of maternity services (NHS OF 4.3) Improving the experience of care for people at the end of their lives • Patient survey views on the quality of care in the last 3 months of life (MCI OF 4.6) Improving experience of healthcare for people with mental illness • Patient experience of community mental health services (NHS OF 4.7) Improving children and young people's experience of healthcare • Children's survey Improving people's experience of integrated care NHS OF indicator in development: We CCG measure at present	Improvement areas	Patient safety incidents reported (NHS OF 5.4) Reducing the incidence of avoidable harm • Incidence of healthcare associated infection: MRSA (NHS OF 5.1.i) • Incidence of healthcare associated infection: C difficile (NHS OF 5.1.ii) Reduction of harm from medicines (Chapter 1 of NHS Patient Safety Strategy) and incidence of medication errors causing serious harm Improving the safety of maternity services • Eliminate of full term babies to neonatal care (NHS OF 5.6) Delivering safe care to children in acute settings We CCG measure at present

Source: *2015/16 CCG outcomes indicator set: at a glance guide*. Available at: www.england.nhs.uk/resources/resources-for-ccgs/ccg-out-tool/ccg-ois/

Handler A, Issel M, Turnock B. A conceptual framework to measure performance of the public health system. Am J Public Health. 2001 Aug;91(8):1235-9. doi: 10.2105/ajph.91.8.1235. PMID: 11499110.

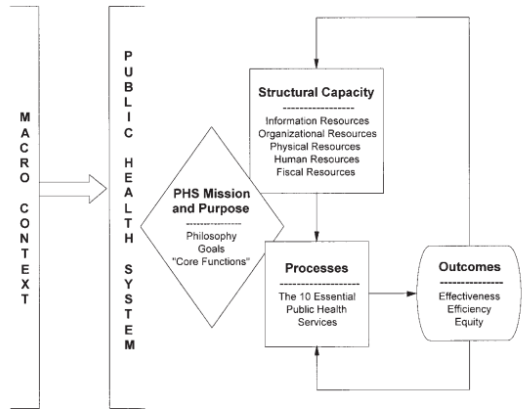


FIGURE 1—Conceptual framework of the public health system (PHS) as a basis for measuring system performance.

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1446752/pdf/0911235.pdf

Health Policy Institute of Ohio. Understanding Health Disparities. 2004. http://www.healthpolicyohio.org/wp-content/uploads/2014/02/healthdisparities2005.pdf

TABLE 1: Health Disparities Framework

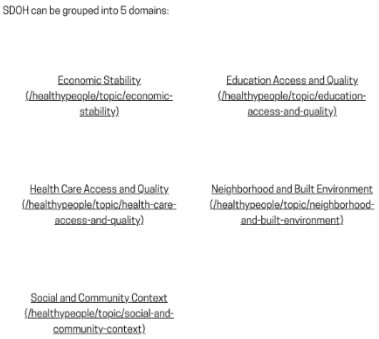
Health — Before Care	Access to Care	Health Care Delivery
Income-levels, poverty, and other social conditions	Financial resources	Insurance coverage and type
Safety and adequacy of housing	Availability and proximity of providers	Cultural competency levels
Employment status and type of employment	Access to transportation	Patient-provider communications
Education levels	Insurance coverage	Provider discrimination or bias
Lifestyle choices—diet, exercise, tobacco and alcohol use	Regular source of care	Differential propensities for certain diseases by racial / ethnic populations
Environmental conditions—air and water quality, pesticide exposure, green space	Language barriers	Patient preferences and adherence to treatment plans
	Legal barriers (e.g., eligibility restrictions, illegal immigrants)	Diversity of the health care workforce
	Prior experience with the health care system	Appropriateness of care
	Cultural preferences—care-seeking behaviors	Effectiveness of care
	Health literacy levels	Language barriers
	Diversity of the health care workforce	

Health Resources & Service Administration. Advancing Health Center Excellence. 2020.
https://bphc.hrsa.gov/sites/default/files/bphc/funding/hce-fact-sheet.pdf

Figure 1. GPM system domains

[1] Health Resources and Services Administration. 2019. About HRSA. Retrieved from https://www.hrsa.gov/about/index.html

Healthy People 2030. Social Determinants of Health. 2022. https://health.gov/healthypeople/priority-areas/social-determinants-health



Hill CV, Perez-Stable EJ, Anderson NA, et al. The National Institute on Aging Health Disparities Research Framework. Ethn Dis. 2015 Aug 7;25(3):245-54. doi: 10.18865/ed.25.3.245. PMID: 26675362. https://www.ncbi.nlm.nih.gov/pubmed/26675362

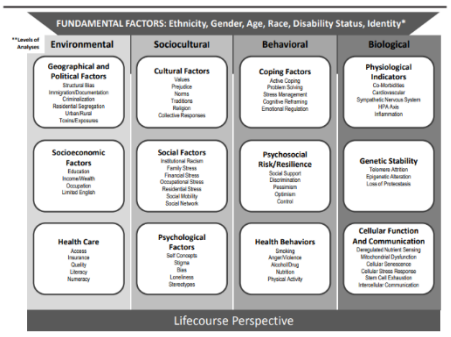


Figure 2. NIA Health Disparities Research Framework
* Sexual and gender minorities.
** Text within boxes represents examples of related factors.

Hulton L, Matthews Z, Bandali S, et al. Accountability for quality of care: Monitoring all aspects of quality across a framework adapted for action. Int J Gynaecol Obstet. 2016 Jan;132(1):110-6. doi: 10.1016/j.ijgo.2015.11.005. PMID: 26723043.

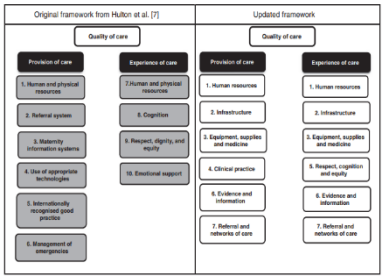


Fig. 1. Comparing the original and updated quality of care frameworks.

Hurtado MP, Swift EK, Corrigan JM, et al. Envisioning the National Health Care Quality Report. Washington (DC); 2001. https://www.ncbi.nlm.nih.gov/pubmed/25057551 https://nap.nationalacademies.org/catalog/10073/envisioning-the-national-health-care-quality-report

Consumer Perspectives on Health Care Needs	Components of Health Care Quality			
	Safety	Effectiveness	Patient Centeredness	Timeliness
Staying healthy				
Getting better				
Living with illness or disability				
Coping with the end-of-life				

FIGURE 2.2 Classification matrix for measures for the National Health Care Quality Report.

Institute of Medicine Committee on Future Directions for the National Healthcare Quality and Disparities Reports. Future Directions for the National Healthcare Quality and Disparities Reports. In: Ulmer C, Bruno M, Burke S, eds. Washington (DC): National Academies Press (US) Copyright 2010 by the National Academy of Sciences. All rights reserved.; 2010. https://nap.nationalacademies.org/catalog/12846/future-directions-for-the-national-healthcare-quality-and-disparities-reports

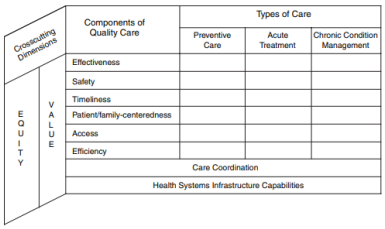


FIGURE S-1 An updated conceptual framework for categorizing health care quality and disparities measurement.

Institute of Medicine Committee on Identifying Priority Areas for Quality I. In: Adams K, Corrigan JM, eds. Priority Areas for National Action: Transforming Health Care Quality. Washington (DC): National Academies Press (US) Copyright 2003 by the National Academy of Sciences. All rights reserved.; 2003. https://nap.nationalacademies.org/catalog/10593/priority-areas-for-national-action-transforming-health-care-quality

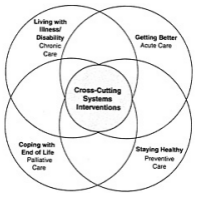


FIGURE ES-1 The committee's initial framework for determining priority areas.

Institute of Medicine Committee on Monitoring Access to Personal Health Care Services. Access to Health Care in America. Washington (DC): National Academies Press; 1993. https://www.ncbi.nlm.nih.gov/pubmed/25144064

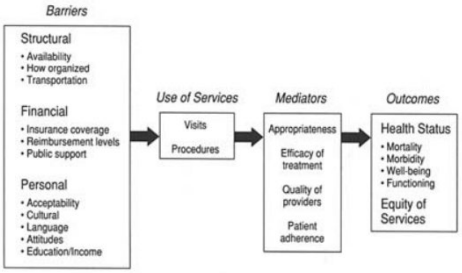
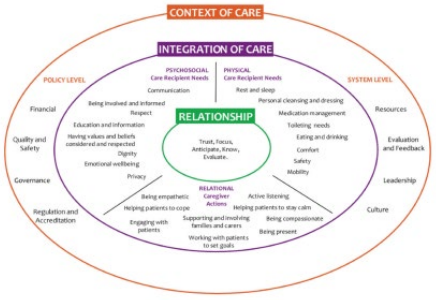


FIGURE 2-1 Model of access to personal health care services.

International Learning Collaborative. The Fundamentals of Care Framework. 2013. https://ilccare.org/the-framework/. Accessed on October 17, 2013



Getting Care Right! The Fundamentals of Care Framework.

Javed Z, Haisum Maqsood M, Yahya T, et al. Race, Racism, and Cardiovascular Health: Applying a Social Determinants of Health Framework to Racial/Ethnic Disparities in Cardiovascular Disease. Circ Cardiovasc Qual Outcomes. 2022 Jan;15(1):e007917. doi: 10.1161/circoutcomes.121.007917. PMID: 35041484.
https://www.ncbi.nlm.nih.gov/pubmed/35041484

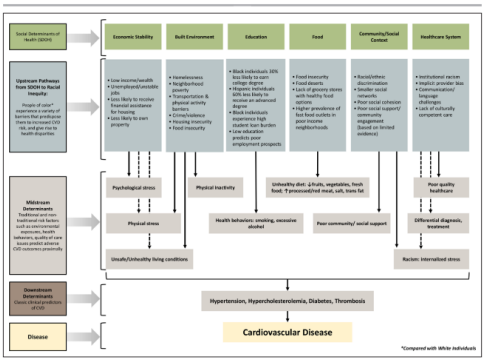


Figure 1. **Race as Social Determinants of Health (SDOH): upstream, midstream, downstream pathways.**
Individual racism: discriminatory words/actions or biases/stereotypes against under-represented racial/ethnic individuals and/or groups. Institutional racism: policies/practices that perpetuate and/or exacerbate racial/ethnic disparities via established societal institutions/systems (education, employment, housing, etc); often shaped by decades of social injustices toward marginalized populations. CVD indicates cardiovascular disease.

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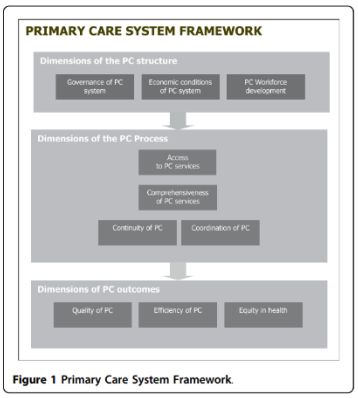

Figure 1 Primary Care System Framework.

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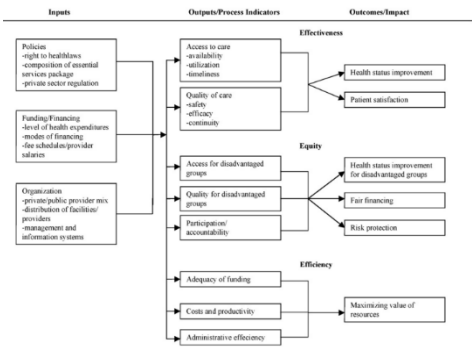

Fig. 1. Framework for health systems performance measures.

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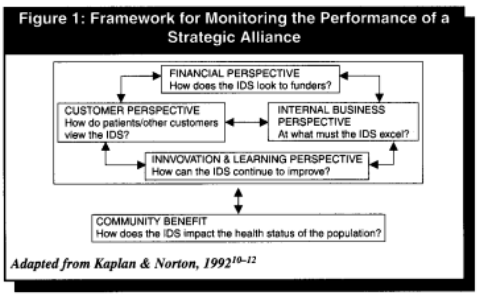

Levesque JF, Sutherland K. Combining patient, clinical and system perspectives in assessing performance in healthcare: an integrated measurement framework. BMC Health Serv Res. 2020 Jan 8;20(1):23. doi: 10.1186/s12913-019-4807-5. PMID: 31915001.
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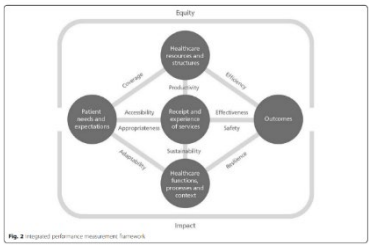

Fig. 2 Integrated performance measurement framework

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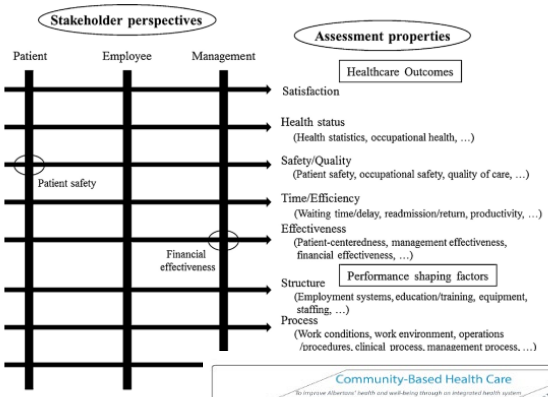

Fig. 1. Theoretical framework of holistic hospital managemen
are highlighted for exemplary purposes.

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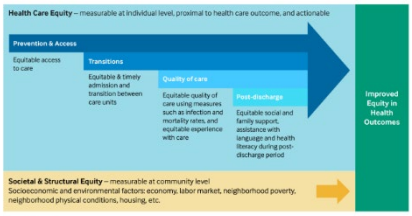
Fig. 3 CBHC evaluation framework

Ma S, Agrawal S, Salhi R. Distinguishing Health Equity and Health Care Equity: A Framework for Measurement. Catalyst non-issue content. 2023;4(2). doi: doi:10.1056/CAT.22.0442. https://catalyst.nejm.org/doi/abs/10.1056/CAT.22.0442

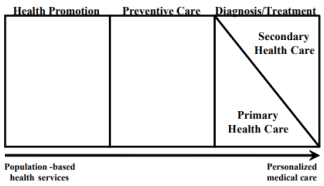
FIGURE 1
A Conceptual Model for Health and Health Care Equity



Source: The authors
NEJM Catalyst (catalyst.nejm.org) © Massachusetts Medical Society

Marshall M, Leatherman S, Mattke S. Selecting indicators for the quality of health promotion, prevention and primary care at the health systems level in OECD countries OECD. Paris, France: 2004. https://www.oecd.org/els/health-systems/33865865.pdf

Figure 1. Conceptual Model of the Continuum of Health Promotion, Prevention and Primary Care



7.

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HEALTH EQUITY FRAMEWORK

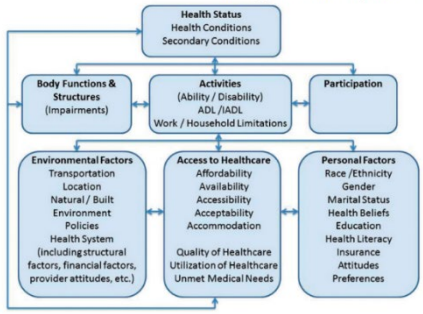
The Mary Black Foundation seeks to increase the wellbeing of children, families, and communities, especially those disproportionately experiencing inequitable negative outcomes. We recognize that individuals' ability to access opportunities is shaped by their social and community context. Inequities in access are often the result of centuries of unjust policies and structural discrimination. Health equity exists when all people have access to opportunities to thrive both physically and mentally, and no one is limited in achieving health and wellness because of their race, ethnicity, nationality, gender, ability, sexual orientation, age, income or zip code.

To advance health equity, Spartanburg will need to ensure it has:
(1) high quality education & employment, (2) safe and supportive neighborhoods, and (3) accessible, affordable, & culturally relevant health care.

Meade MA, Mahmoudi E, Lee SY. The intersection of disability and healthcare disparities: a conceptual framework. Disabil Rehabil. 2015;37(7):632-41. doi: 10.3109/09638288.2014.938176. PMID: 25060038. https://www.ncbi.nlm.nih.gov/pubmed/25060038

DOI: 10.3109/09638288.2014.938176 *Disability and healthcare disparities* 639

Figure 5. Model of healthcare disparities and disability.



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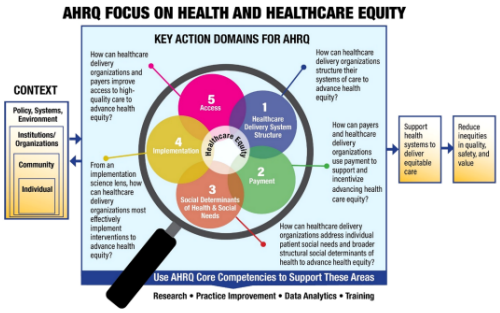

FIGURE 1 Agency for Healthcare Research and Quality (AHRQ) Research and Action Health Equity Framework. [Color figure can be viewed at wileyonlinelibrary.com]

https://onlinelibrary.wiley.com/doi/pdfdirect/10.1111/1475-6773.14230?download=true

Mosadeghrad AM. A conceptual framework for quality of care. Mater Sociomed. 2012;24(4):251-61. doi: 10.5455/msm.2012.24.251-261. PMID: 23922534.
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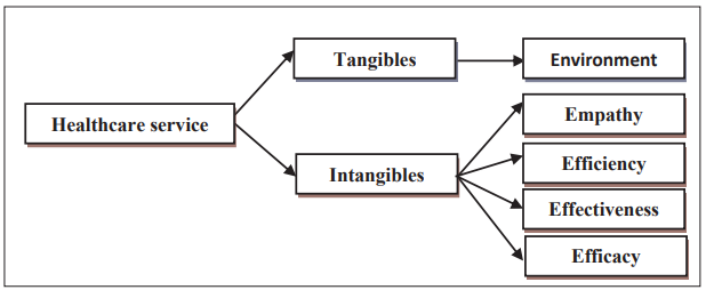

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https://www.ncbi.nlm.nih.gov/pubmed/25057628

FIGURE 1–1 Framework for the National Healthcare Quality Report and the National Healthcare Disparities Report

Consumer Perspectives on Health Care Needs	Components of Health Care Quality			
	Safety	Effectiveness	Patient Centeredness	Timeliness
Staying Healthy				
Getting Better				
Living with Illness or Disability				
Coping with the End of Life				

EQUITY

National Academies of Sciences Engineering Medicine. Ending Unequal Treatment: Strategies to Achieve Equitable Health Care and Optimal Health for All. Washington (DC): The National Academies Press; 2024. https://www.ncbi.nlm.nih.gov/pubmed/38924457 https://nap.nationalacademies.org/catalog/27820/ending-unequal-treatment-strategies-to-achieve-equitable-health-care-and

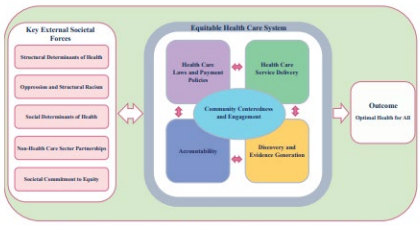
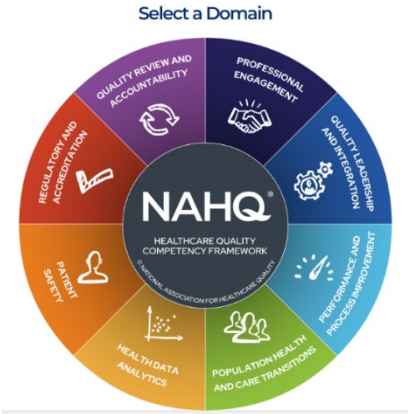


FIGURE S-1 The system in which health care is organized, financed, delivered, and held accountable to achieve equitable health care and optimal health for all.
NOTE: The key external societal forces act individually, intersect with one another, and constantly interact with the domains in the health care system that are also constantly interacting with each other to significantly influence equitable health care.

National Association for Healthcare Quality. NAHQ's Healthcare Quality Competency Framework. 2019. https://nahq.org/nahq-intelligence/competency-framework/. Accessed on October 17, 2023



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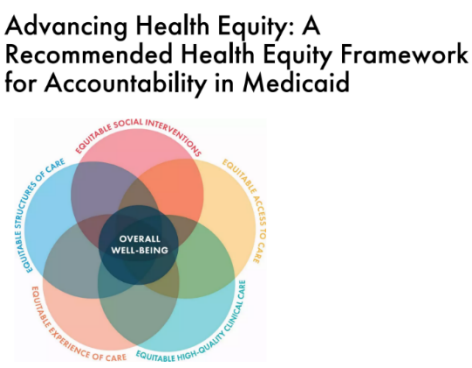

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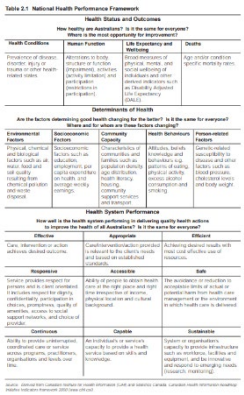


Table 2.1 National Health Performance Framework

Health Status and Outcomes

How healthy are Australians? Is it the same for everyone?
Where is the most opportunity for improvement?

Health Conditions	Human Function	Life Expectancy and Well-Being	Deaths
Prevalence of disease, disorder, injury or trauma or other health related states	Alterations in body structure or function (impairment), activities (activity limitation) and participation (restrictions in participation)	Broad measures of physical, mental, and social well-being of individuals and other derived indicators such as Disability Adjusted Life Expectancy (DALE)	Age and/or condition specific mortality rates

Determinants of Health

Are the factors determining good health changing for the better? Is it the same for everyone?
Where and for whom are these factors changing?

Environmental Factors	Socioeconomic Factors	Community Capacity	Health Behaviours	Person-related Factors
Physical, chemical and biological factors such as air, water, food and soil quality resulting from chemical pollution and solar exposure	Socioeconomic factors such as education, employment, gross capita expenditure on health and average weekly earnings.	Characteristics of communities and families such as population density, age distribution, health literacy, housing, community support/cohesion and transport	Attitudes, beliefs, knowledge and behaviours e.g. patterns of eating, physical activity, excess alcohol consumption and smoking	Genetic-related susceptibility to disease and other factors such as blood pressure, cholesterol levels and body weight.

Health System Performance

How well is the health system performing in delivering quality health actions to improve the health of all Australians? Is it the same for everyone?

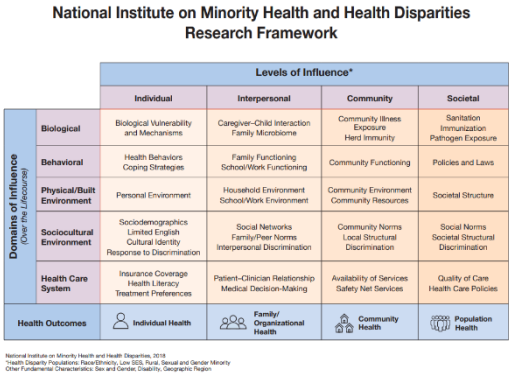
Effective	Appropriate	Efficient
Care, intervention or action achieves desired outcome.	Care/intervention/action provided is relevant to the client's needs and based on established standards.	Achieving desired results with most cost effective use of resources.

Responsive	Accessible	Safe
Service provides respect for persons and is client orientated. It includes respect for dignity, confidentiality, participation in choices, promptness, quality of amenities, access to social support networks, and choice of provider.	Ability of people to obtain health care at the right place and right time irrespective of income, physical location and cultural background.	The avoidance or reduction to acceptable limits of actual or potential harm from health care management or the environment in which health care is delivered.

Continuous	Capable	Sustainable
Ability to provide uninterrupted, coordinated care or service across programs, practitioners, organisations and levels over time.	An individual's or service's capacity to provide a health service based on skills and knowledge.	System or organisations capacity to provide infrastructure such as workforce, facilities and equipment and be responsive and adaptive to changing needs. (Research, Healthcare)

Source: Adapted from Canadian Institute for Health Information (CIHI) and Statistics Canada. Canadian Health Information Roadmap: Indicator Framework 2000 (www.cihi.ca)

National Institute on Minority Health and Health Disparities. National Institute on Minority Health and Health Disparities Research Framework. 2017. https://www.nimhd.nih.gov/docs/research_framework/research-framework-slide.pdf. Accessed on September 18, 2023



National Institute on Minority Health and Health Disparities Research Framework

		Levels of Influence*			
		Individual	Interpersonal	Community	Societal
Domains of Influence (Over the Lifecourse)	Biological	Biological Vulnerability and Mechanisms	Caregiver–Child Interaction Family Microbiome	Community Illness Exposure Herd Immunity	Sanitation Immunization Pathogen Exposure
	Behavioral	Health Behaviors Coping Strategies	Family Functioning School/Work Functioning	Community Functioning	Policies and Laws
	Physical/Built Environment	Personal Environment	Household Environment School/Work Environment	Community Environment Community Resources	Societal Structure
	Sociocultural Environment	Sociodemographics Limited English Cultural Identity Response to Discrimination	Social Networks Family/Peer Norms Interpersonal Discrimination	Community Norms Local Structural Discrimination	Social Norms Societal Structural Discrimination
	Health Care System	Insurance Coverage Health Literacy Treatment Preferences	Patient–Clinician Relationship Medical Decision-Making	Availability of Services Safety Net Services	Quality of Care Health Care Policies
Health Outcomes		Individual Health	Family/ Organizational Health	Community Health	Population Health

National Institute on Minority Health and Health Disparities, 2018
*Health Disparity Populations: Race/Ethnicity, Low SES, Rural, Sexual and Gender Minority
Other Fundamental Characteristics: Sex and Gender, Disability, Geographic Region

National Quality Forum. A Roadmap for Promoting Health Equity and Eliminating Disparities: The Four I's for Health Equity 2017.

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Nerenz DR, Zajac BM, Rosman HS. Consortium Research on Indicators of System Performance (CRISP). Jt Comm J Qual Improv. 1993 Dec;19(12):577-85. doi: 10.1016/s1070-3241(16)30038-4. PMID: 8118526. https://www.ncbi.nlm.nih.gov/pubmed/8118526

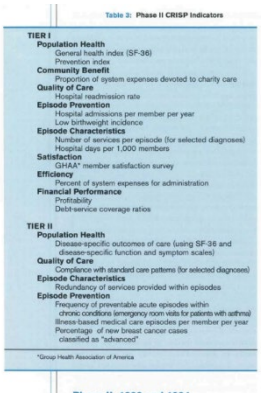


Table 3: Phase II CRISP Indicators

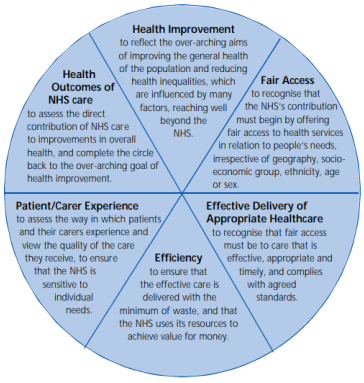
TIER I
- **Population Health**
  - General health index (SF-36)
  - Prevention index
- **Community Benefit**
  - Proportion of system expenses devoted to charity care
- **Quality of Care**
  - Hospital readmission rate
- **Episode Prevention**
  - Hospital admissions per member per year
  - Low birthweight incidence
- **Episode Characteristics**
  - Number of services per episode (for selected diagnoses)
  - Hospital days per 1,000 members
- **Satisfaction**
  - GHAA* member satisfaction survey
- **Efficiency**
  - Percent of system expenses for administration
- **Financial Performance**
  - Profitability
  - Debt service coverage ratios

TIER II
- **Population Health**
  - Disease-specific outcomes of care (using SF-36 and disease-specific function and symptom scales)
- **Quality of Care**
  - Compliance with standard care patterns (for selected diagnoses)
- **Episode Characteristics**
  - Redundancy of services provided within episodes
- **Episode Prevention**
  - Frequency of preventable acute episodes within chronic conditions (emergency room visits for patients with asthma)
  - Illness-based medical care episodes per member per year
  - Percentage of new breast cancer cases classified as "advanced"

*Group Health Association of America

NHS. The NHS Performance Assessment Framework. March 1999. https://webarchive.nationalarchives.gov.uk/ukgwa/20091106105113/http:/www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_4009190

Figure 2 NHS Performance Assessment Framework



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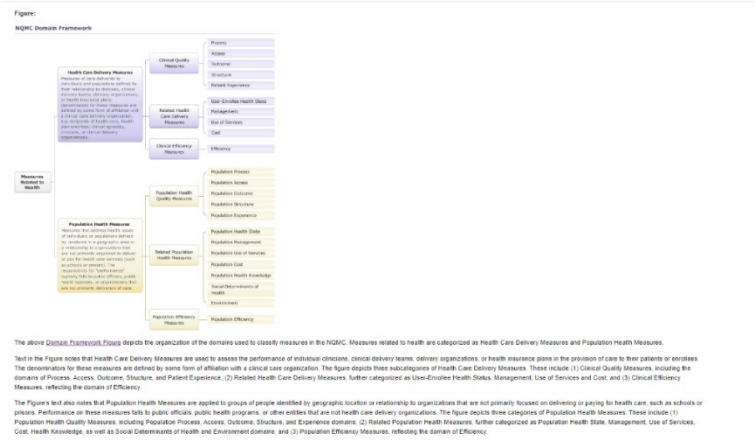

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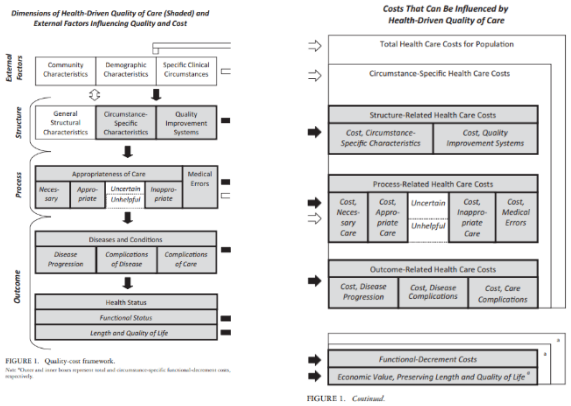

Office of the Assistant Secretary for Planning and Evaluation. Advisory Council April 2018 Meeting Presentation: Testing the Promise of Primary Care. 2018. https://aspe.hhs.gov/collaborations-committees-advisory-groups/napa/napa-advisory-council/napa-advisory-council-meetings/napa-past-meetings/napa-2018-meeting-material/april-2018-meeting-presentation-testing-promise

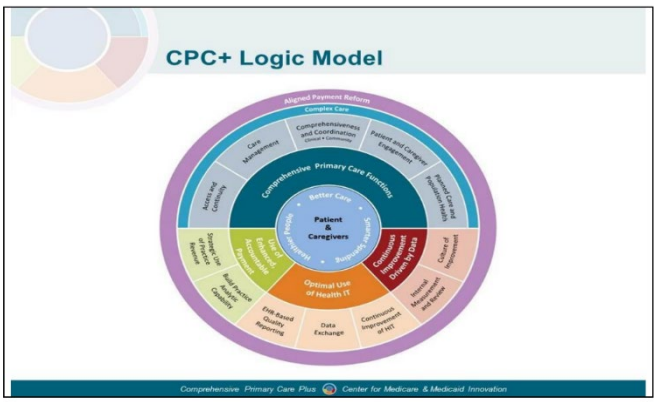

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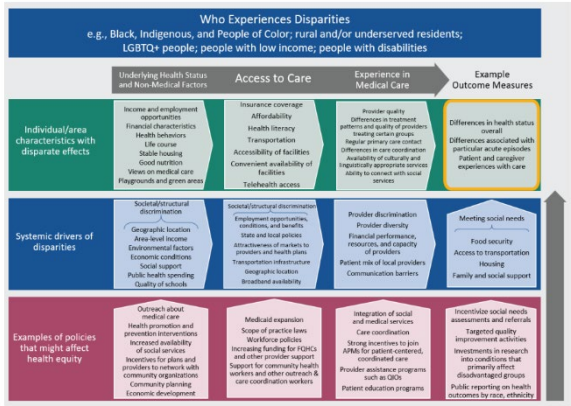
Figure 3. Framework for Considering Health Equity



Source: Samson, L. W. (2021, June 14). *Addressing Health Equity Through a Population-based Measurement Framework*. Paper presented at the AcademyHealth Annual Research Meeting, Virtual.

Pai YP, Chary ST. Measuring patient-perceived hospital service quality: a conceptual framework. Int J Health Care Qual Assur. 2016 Apr 18;29(3):300-23. doi: 10.1108/ijhcqa-05-2015-0069. PMID: 27120508. https://www.ncbi.nlm.nih.gov/pubmed/27120508

Figure 1: Conceptual framework

Pap R, Lockwood C, Stephenson M, et al. Development of prehospital care quality indicators for the Australian setting: a modified RAND/UCLA appropriateness method. Emergency Medicine Journal (EMJ). 2022;39(1):57-62. doi: 10.1136/emermed-2020-210455. PMID: 154368142. Language: English. Entry Date: 20220101. Revision Date: 20220204. Publication Type: Journal Article.
https://emj.bmj.com/content/39/1/57.long

Table 1 Dimensions of quality (adapted from Campbell *et al*[15] and Owen[16])

Structure	Process	Outcome	Dimension
Availability Accessibility Equity	Availability Accessibility Continuity/sustainability Equity Timeliness	Health status User evaluation (includes Acceptability)	**Access**
Safety (provider and patient)	Safety (provider and patient)	Absence of Harm Provider Evaluation User Evaluation (includes Acceptability)	**Safety**
Appropriateness Capability Clinical Effectiveness Cost-effectiveness Efficiency Equity	Appropriateness Capability Caring Clinical Effectiveness Continuity/Sustainability Cost-effectiveness Efficiency Equity Interpersonal effectiveness Responsiveness Patient-centredness Well led	Health Status Financial Evaluation User Evaluation (includes Acceptability)	**Effectiveness**

Perera GA, Dowell AC, Morris CJ. Constructing a framework for quality activity in primary care. Aust Health Rev. 2013 Feb;37(1):98-103. doi: 10.1071/ah11097. PMID: 23116558.
https://www.publish.csiro.au/AH/AH11097

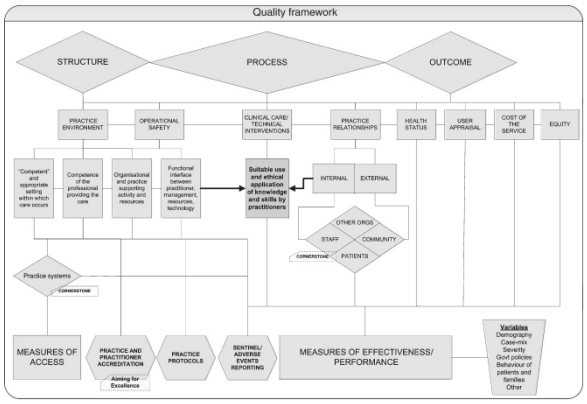


Fig. 1. A framework for quality in primary care. The quality framework deconstructs the individual elements that comprise practice activity and shows the areas of integration with various quality assessment activities undertaken at practice level. The framework was derived utilising a combination of theoretical and empirical evidence. Reproduced with permission from the Royal New Zealand College of General Practitioners.

Poker A, Hubbard H, Sharp BA. The first national reports on United States healthcare quality and disparities. J Nurs Care Qual. 2004 Oct-Dec;19(4):316-21. doi: 10.1097/00001786-200410000-00005. PMID: 15535536. https://www.ncbi.nlm.nih.gov/pubmed/15535536

Figure 2. National Healthcare Disparities Report Conceptual Framework. Developed by Ernest Moy, MD, MPH, Center for Quality Improvement and Patient Safety, Agency for Healthcare Research and Quality, Rockville, Md. Reprinted by permission of Ernest Moy.

Popovich JM. Multidimensional performance measurement. J Nurs Care Qual. 1998 Apr;12(4):14-21. doi: 10.1097/00001786-199804000-00006. PMID: 9529793. https://www.ncbi.nlm.nih.gov/pubmed/9529793

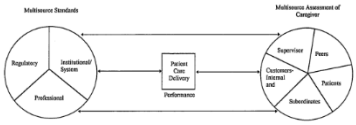
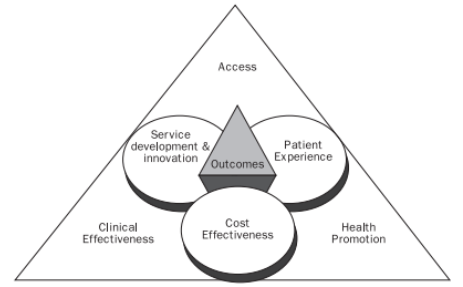


Figure 1. Multidimensional performance measurement model.

Proctor S, Campbell J. A developmental performance framework for primary care. Int J Health Care Qual Assur Inc Leadersh Health Serv. 1999;12(6-7):279-86. doi: 10.1108/09526869910287549. PMID: 10724571. https://www.ncbi.nlm.nih.gov/pubmed/10724571



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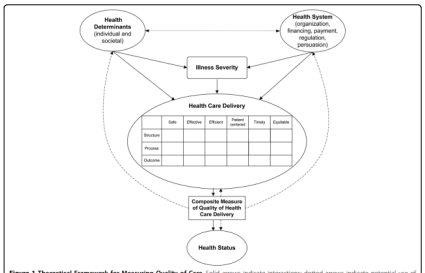

Figure 1 Theoretical Framework for Measuring Quality of Care. Solid arrows indicate interactions; dotted arrows indicate potential use of composite indicator to measure healthcare delivery, predict health status and inform health policy at the health systems and societal level. (Adapted from Profit et al. [12]).

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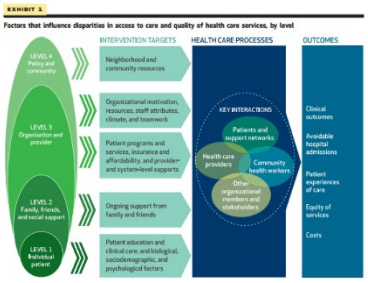

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Table 1. The key Performance Indicators Selected for Hospitals

BSC Perspectives	Indicators
Finance (F)	
F1	%Personnel costs of total costs
F2	Ratio of total revenue to total costs
F3	% Deductions of hospital
F4	Average expenditures per bed per day
F5	the cost of drugs and materials
Internal process (P)	
P1	average length of stay
P2	Bed occupancy
P3	Mean length of stay in emergency department
P4	Mortality rate
P5	bed turnover rate
P6	Discharge with personal satisfaction
P7	Emergency room (ER) waiting time
P8	Hospital infection rate
P9	% canceled surgeries
P10	Clinical errors
Learning and growth (L)	
L1	Training expenditures per capita
L2	Staff satisfaction rate
L3	Employee absenteeism rate
L4	Staff turnover
Customer (C)	
C1	Patients satisfaction percentage
C2	Rate of patient complaints
C3	The facilities for families and visitors

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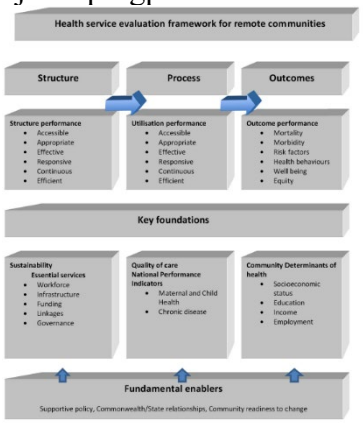

Fig. 2. Health service evaluation framework.

Remington PL, Catlin BB, Gennuso KP. The County Health Rankings: rationale and methods. Population Health Metrics. 2015 2015/04/17;13(1):11. doi: 10.1186/s12963-015-0044-2.

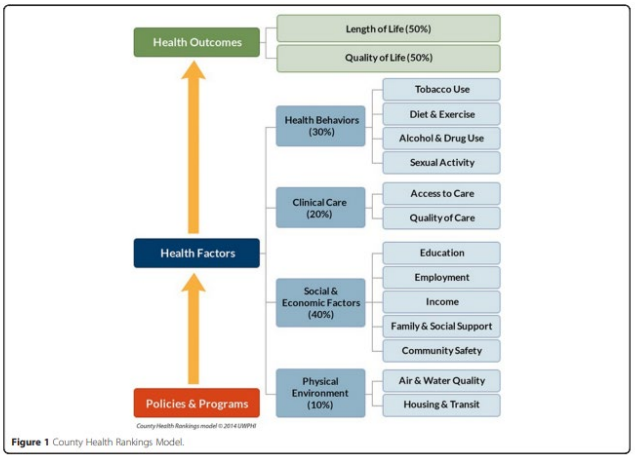

Figure 1 County Health Rankings Model.

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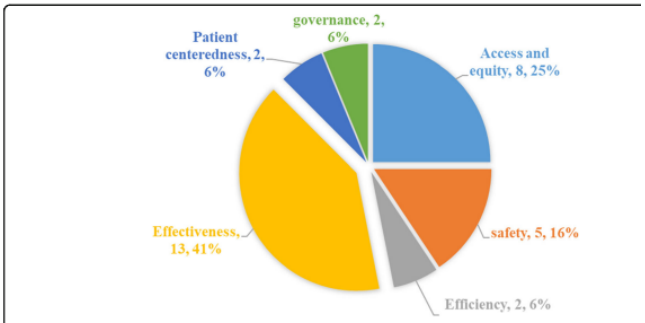

Fig. 2 The shares of each dimension in the number of quality indicators

Santana MJ, Manalili K, Jolley RJ, et al. How to practice person-centred care: A conceptual framework. Health Expect. 2018 Apr;21(2):429-40. doi: 10.1111/hex.12640. PMID: 29151269.
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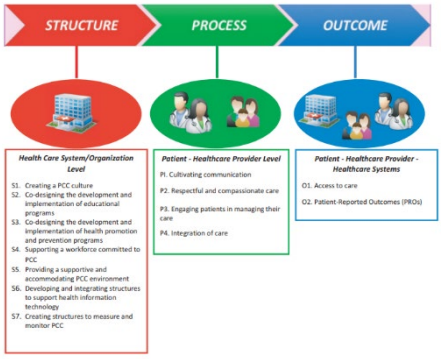

FIGURE 1 Framework for person-centred care

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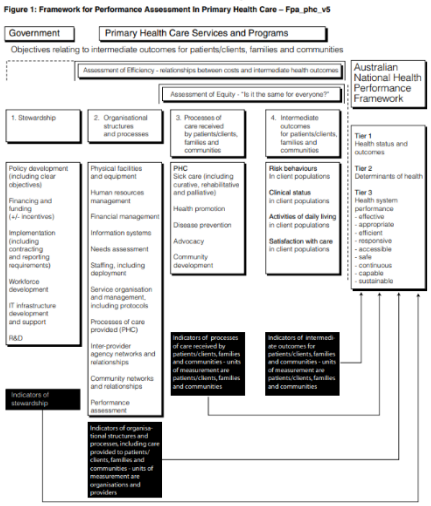
Exhibit 5. Dimension Scores for Quality

Quality Dimension	Indicator Score: Ratio of U.S. to Benchmark Rate	Dimension Score: Average of Indicator Ratios
The Right Care		**71**
Adults: recommended screening and preventive care	61	
Children: recommended immunizations, preventive care (Avg 2 ratios)	85	
Needed mental health care and received treatment (Avg 2 ratios)	66	
Chronic disease under control: diabetes, high blood pressure (Avg 2 ratios)	61	
Hospitalized patients: recommended care for AMI, CHF, pneumonia	84	
Coordinated Care		**70**
Adult with accessible primary care provider	79	
Children with a medical home	77	
Care coordination at hospital discharge (Avg 3 ratios)	70	
Nursing homes: hospital admissions and readmissions (Avg 2 ratios)	64	
Home health: hospital admissions	62	
Safe Care		**69**
Patients reported medical, medication, or lab errors	65	
Unsafe drug use (Avg 3 ratios)	60	
Nursing home residents with pressure sores (Avg 2 ratios)	67	
Hospital-standardized mortality ratios	84	
Patient-Centered, Timely Care		**72**
Ability to see doctor same/next day when sick or needed medical attention	58	
Ability to get "after hours" care	53	
Doctor-patient communication: always listened, explained, showed respect, spent enough time	74	
Adults with chronic conditions given self management plan	89	
Patient-centered hospital care: always managed pain, responded when needed help, explained medicines	87	
TOTAL AVERAGE SCORE		**71**

Sibthorpe B, Gardner K. A Conceptual Framework for Performance Assessment in Primary Health Care. Australian Journal of Primary Health - AUST J PRIM HEALTH. 2007 08/01;13:96-103. doi: 10.1071/PY07027. https://www.publish.csiro.au/py/PY07027



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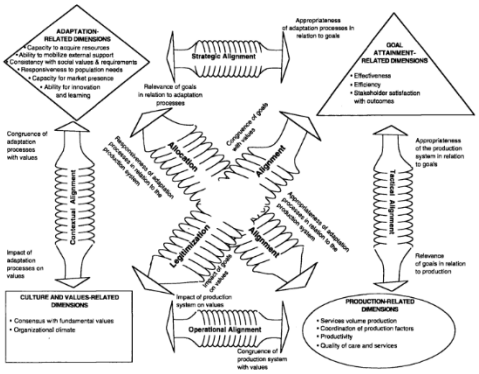

Fig. 2 *A conceptual framework of health care organizations performance.*

Sinaiko AD, Szumigalski K, Eastman D, et al. Delivery of Patient Centered Care in the U.S. Health Care System: What is standing in its way? 2019.
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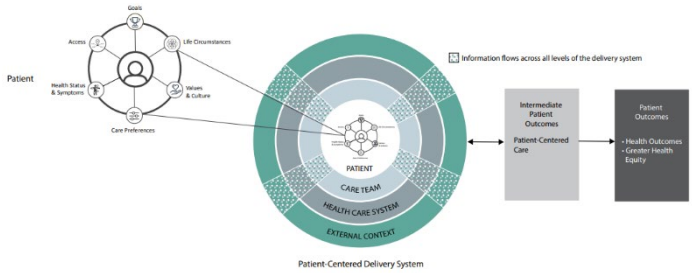
Figure 1.1 Comprehensive Model of Patient Centered Care and Outcomes



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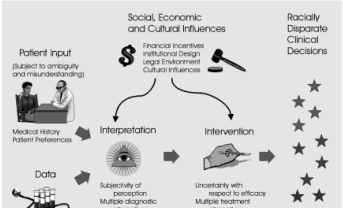

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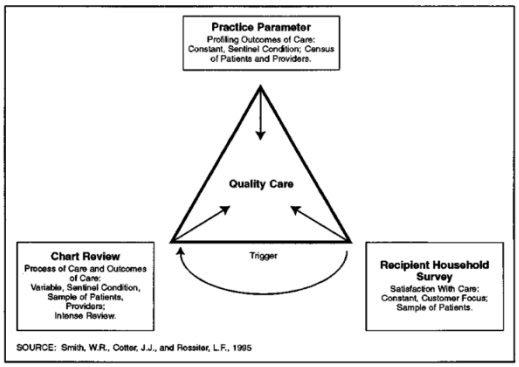
Figure 2
Quality of Care Framework for Medicaid Managed Care



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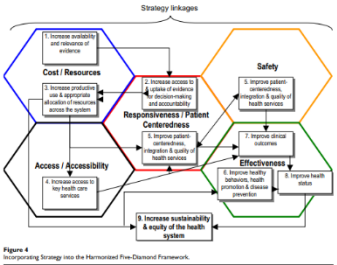

Figure 4
Incorporating Strategy into the Harmonized Five-Diamond Framework.

https://bmchealthservres.biomedcentral.com/counter/pdf/10.1186/1472-6963-7-25.pdf

ten Asbroek AH, Arah OA, Geelhoed J, et al. Developing a national performance indicator framework for the Dutch health system. Int J Qual Health Care. 2004 Apr;16 Suppl 1:i65-71. doi: 10.1093/intqhc/mzh020. PMID: 15059989.

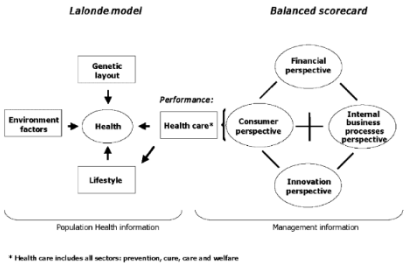

Figure 1 Performance indicator framework for the Dutch health system.

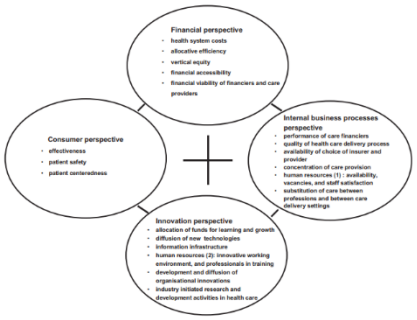

Figure 2 Perspectives and indicator areas of the balanced scorecard part of the performance indicator framework for the Dutch health system.

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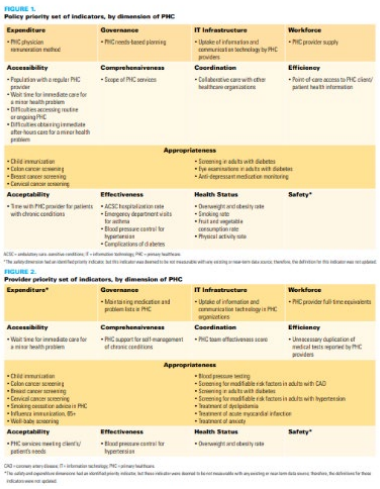

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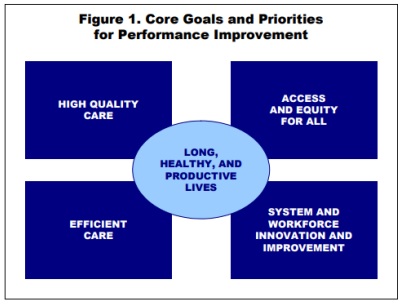

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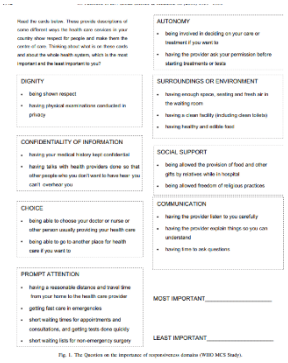
Valentine N, Darby C, Bonsel GJ. Which aspects of non-clinical quality of care are most important? Results from WHO's general population surveys of "health systems responsiveness" in 41 countries. Soc Sci Med. 2008 May;66(9):1939-50. Doi: 10.1016/j.socscimed.2007.12.002. PMID: 18313822.


Read the cards below. These provide descriptions of some different ways the health care services in your country show respect for people and make them the centre of care. Thinking about what is on these cards and about the whole health system, which is the most important and the least important to you?

AUTONOMY
- being involved in deciding on your care or treatment if you want to
- having the provider ask your permission before starting treatments or tests

DIGNITY
- being shown respect
- having physical examinations conducted in privacy

SURROUNDINGS OR ENVIRONMENT
- having enough space, seating and fresh air in the waiting room
- having a clean facility (including clean toilets)
- having healthy and edible food

CONFIDENTIALITY OF INFORMATION
- having your medical history kept confidential
- having talks with health providers done so that other people who you don't want to have hear you can't overhear you

SOCIAL SUPPORT
- being allowed the provision of food and other gifts by relatives while in hospital
- being allowed freedom of religious practices

CHOICE
- being able to choose your doctor or nurse or other person usually providing your health care
- being able to go to another place for health care if you want to

COMMUNICATION
- having the provider listen to you carefully
- having the provider explain things so you can understand
- having time to ask questions

PROMPT ATTENTION
- having a reasonable distance and travel time from your home to the health care provider
- getting fast care in emergencies
- short waiting times for appointments and consultations, and getting tests done quickly
- short waiting lists for non-emergency surgery

MOST IMPORTANT_____

LEAST IMPORTANT_____

Fig. 1. The Question on the importance of responsiveness domains (WHO MCS Study).

Vallejo P, Saura RM, Sunol R, et al. A proposed adaptation of the EFQM fundamental concepts of excellence to health care based on the PATH framework. International Journal for Quality in Health Care. 2006 Oct 2006 2017-09-25;18(5):327-35. doi: https://doi.org/10.1093/intqhc/mzl037. PMID: 621722866

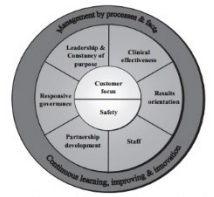


Figure 2 EFQM–health care-adapted framework. EFQM, European Foundation for Quality Management.

van den Berg MJ, Kringos DS, Marks LK, et al. The Dutch Health Care Performance Report: seven years of health care performance assessment in the Netherlands. Health Res Policy Syst. 2014 Jan 9;12:1. doi: 10.1186/1478-4505-12-1. PMID: 24405849.
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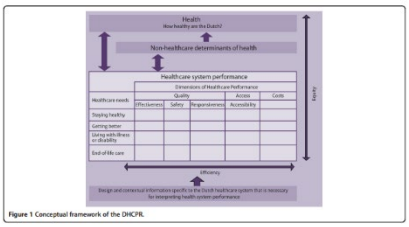

Figure 1 Conceptual framework of the DHCPR.

Veillard J, Champagne F, Klazinga N, et al. A performance assessment framework for hospitals: the WHO regional office for Europe PATH project. Int J Qual Health Care. 2005 Dec;17(6):487-96. doi: 10.1093/intqhc/mzi072. PMID: 16155049.
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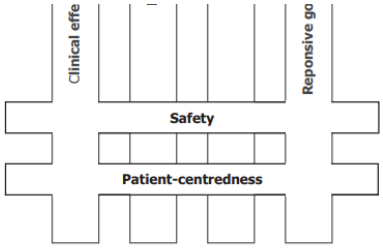

Figure 2 The PATH theoretical model for hospital performance.

Veillard J, Cowling K, Bitton A, et al. Better Measurement for Performance Improvement in Low- and Middle-Income Countries: The Primary Health Care Performance Initiative (PHCPI) Experience of Conceptual Framework Development and Indicator Selection. Milbank Q. 2017 Dec;95(4):836-83. doi: 10.1111/1468-0009.12301. PMID: 29226448.
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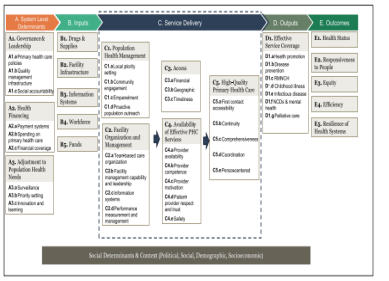


Figure 2. PHCPI Conceptual Framework, as Revised November 2016
[Color figure can be viewed at wileyonlinelibrary.com]

Abbreviations: PHC, primary health care; RMNCH, reproductive, maternal, newborn, and child health; NCD, noncommunicable disease.

Vrijens F, Renard F, Jonckheer P, et al. The Belgian Health System Performance Report 2012: snapshot of results and recommendations to policy makers. Health Policy. 2013 Sep;112(1-2):133-40. Doi: 10.1016/j.healthpol.2013.06.010. PMID: 23927845. https://www.ncbi.nlm.nih.gov/pubmed/23927845

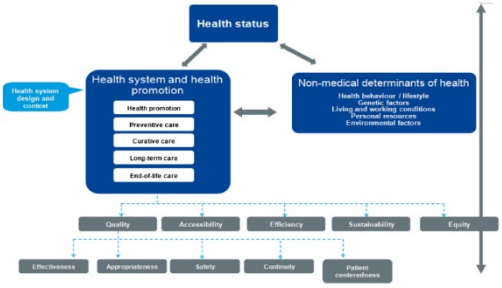
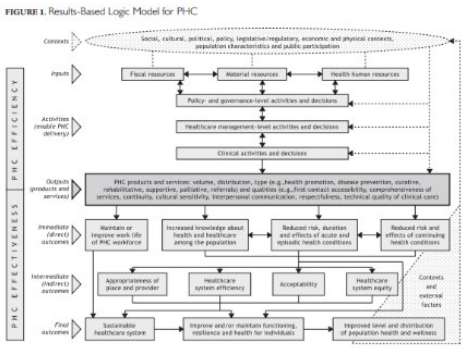


Fig. 1. Conceptual framework to evaluate the performance of the Belgian health system.

Watson D, Broemeling A-M, Wong S. A Results-Based Logic Model for Primary Healthcare: A Conceptual Foundation for Population-Based Information Systems. Healthcare policy = Politiques de santé. 2009 11/01;5 Spec no:33-46. doi: 10.12927/hcpol.2009.21184.



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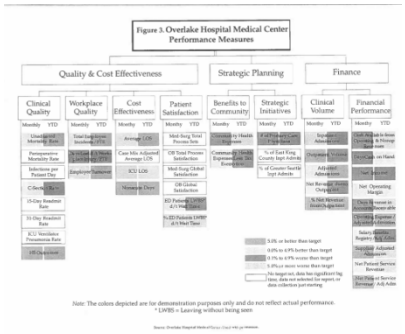

Wong ST, Yin D, Bhattacharyya O, et al. Developing a performance measurement framework and indicators for community health service facilities in urban China. BMC Fam Pract. 2010 Nov 18;11:91. doi: 10.1186/1471-2296-11-91. PMID: 21087516. https://bmcprimcare.biomedcentral.com/counter/pdf/10.1186/1471-2296-11-91.pdf

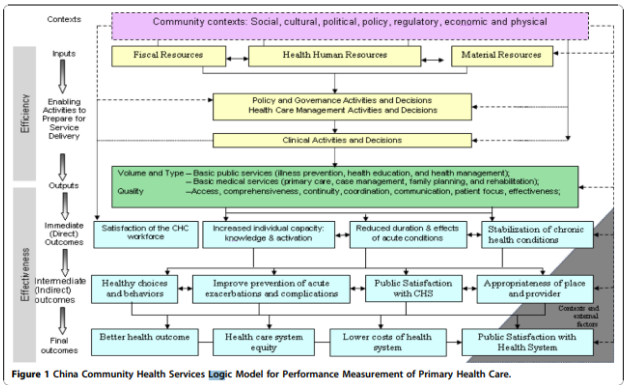

Figure 1 China Community Health Services Logic Model for Performance Measurement of Primary Health Care.

Figure 1 China Community Health Services Logic Model for Performance Measurement of Primary Health Care.