



Topic Brief: Strategies for Integrating Behavioral Health and Primary Care

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Purpose: This topic brief summarizes information addressing two topic nominations submitted on the AHRQ Effective Health Care Program website on October 4 and October 29, 2021. This information was used to inform the Evidence-Based Practice Center (EPC) Program's decisions about whether to produce an evidence review on these topics and if so, what type of evidence product would be most appropriate.

Issue: Nearly 57 million Americans, or one in five adults, experienced mental illness and 17 million additionally had a co-occurring substance use disorder in 2020. However, less than half of these individuals received appropriate treatment, and the average delay between onset of mental health symptoms and treatment was 11 years.¹ There is growing evidence that integrating behavioral health into primary care improves outcomes for people struggling with common mental health conditions and serious mental illness. This joint topic nomination seeks to characterize the existing strategies for integrating behavioral and primary care services for pediatric and adult patients, assess their effectiveness for different patient populations and care contexts, and to consider the best practices for implementation and outcome assessment.

Program Decision: This combined nomination met all selection criteria. The EPC Program will develop a new systematic review based on this nomination.

Key Findings

- Seven systematic reviews,²⁻⁸ two narrative reviews,^{9, 10} and 23 primary studies¹¹⁻³³ described different strategies for integrating behavioral health and primary care for adults and children and adolescents (KQs 1 and 1a).
- Four systematic reviews^{2-4, 6} and the same 23 primary studies¹¹⁻³³ also evaluated the effectiveness of care integration strategies (KQ2). While all of these reviews and primary studies examined the effectiveness of different integration strategies for specific patient subpopulations and within different clinical practice contexts, none of them explicitly compared the effectiveness of these strategies across these variables (KQ 2a).
- Two systematic reviews,^{7, 33} one scoping review,^{8, 34, 35} and nine primary studies^{11, 32, 36-42} considered various barriers and facilitators to implementation of different care integration strategies (KQ3).
- Four primary studies⁴³⁻⁴⁶ additionally assessed outcome metrics recommended to evaluate and monitor the implementation and sustainability of care integration (KQ4).
- Finally, two observational studies^{43, 47} further considered how unique characteristics of different integration strategies may define clinical care team functions (KQ5).

Background

Fifty-nine million Americans, or approximately one in five adults, experienced mental illness and 17 million had a co-occurring substance use disorder in 2020. However only 46% of those struggling with these problems, cumulatively referred to as behavioral health conditions, received treatment, according to the same 2020 statistics.¹

Behavioral health conditions are associated with significant morbidity and mortality. People with common mental health conditions, such as depression, are nearly twice as likely to develop cardiovascular and metabolic diseases. Behavioral health diagnoses account for one in every eight emergency department visits in the United States and are the most common cause of hospitalization for Americans under the age of 45.⁴⁸ People with mental illness also face higher rates of unemployment and are more likely to experience homelessness and incarceration. Mental illness is also associated with approximately \$193 billion in lost earnings annually.¹

Despite these concerning statistics, behavioral health conditions are significantly undertreated in the United States. Nearly two thirds of people experiencing depression and other common mental health conditions and approximately one third of individuals with serious mental illness such as bipolar disorder and schizophrenia are treated exclusively in primary care settings. Although primary care clinicians provide the majority of mental health care for these patients, only approximately 3% of all primary care encounters are coded for primary diagnoses of depression and anxiety compared to over 40% of psychiatrists' visits.⁴⁹

The historic segregation of mental health and addiction treatment and primary care systems has long been recognized as an important driver of the undertreatment of behavioral health conditions. As a result, numerous models for integrating general medical and behavioral health services, known as integrated care, have been proposed in recent years. While many integrated care models were shown to be effective in clinical trials, few have been widely implemented in clinical practice, largely due to difficulties with financing and a lack of certainty regarding which strategies are most appropriate for different practice settings.⁵⁰ A scoping review of the literature requested by the nominators would characterize the existing integrated care strategies and help elucidate which practice settings and which patient populations may benefit the most from different strategies. The goal of the proposed review would be to provide healthcare systems and independent clinical practices seeking to implement integrated care services with practical guidance on selection, implementation, and ongoing assessment of integrated care within their organizations.

Nomination Summary

This brief addresses two separate nominations from the AHRQ Academy for Integrating Behavioral Health and Primary Care and a member of the AHRQ Learning Health System Panel, Intermountain Healthcare. The nominators request a scoping review that would characterize available strategies for integrating behavioral and primary care for children and adults and report study findings of these strategies in the context of different patient populations and care settings.

Scope

Key Questions:

1. What are the available strategies for integrating behavioral health and primary care for children and adults with behavioral health needs?

- a) How do these strategies vary by (1) clinical focus/conditions, (2) core components of care delivery, (3) setting/practice/type, (4) mechanisms of care integration, (5) setting/practice type, (6) resources required (e.g., staff training), and (7) business models?
2. What is the effectiveness reported in studies of different strategies for integrating behavioral health and primary care for children and adults with behavioral health needs?
 - a) Does the effectiveness of different integration strategies vary by (1) clinical focus/conditions patient subgroups, (2) settings/practice type, and (3) other contexts (e.g., different payment reimbursement models)?
3. What are the barriers and facilitators to implementing and maintaining different care integration strategies? Are any of these strategies synergistic with one another?
4. What are the best outcome metrics to monitor and evaluate care integration? Should different metrics be used as care integration matures over time? How frequently should these outcome metrics be measured?
5. How do different care integration strategies define (or redefine) care team member roles? What training interventions may be required to facilitate integrated care team functioning?

Table 1. Questions and PICOS (population, intervention, comparator, outcome, and setting)

Population	<p>Children (aged 0-21 years) and adults (aged ≥21 years) with behavioral health needs (e.g., diagnosed or suspected mental health conditions, SUDs, or unhealthy behaviors, stress-related physical symptoms, etc.)</p> <p><i>Clinical focus/conditions:</i></p> <ol style="list-style-type: none"> a) Patients with severe mental illness b) Patients with one or more common mental health conditions or SUDs c) Patients with stress-linked physical symptoms (e.g., insomnia, fatigue) d) Patients with one or more chronic medical conditions e) Complex patients with overlapping medical conditions and psychosocial factors f) Children with adverse childhood experiences
Intervention	<p>Different strategies for integrating behavioral health and primary care services, with strategies being defined as both program/model components and approaches to care integration.</p> <p>Examples of eligible programs/models for care integration include: Collaborative Care Model, Screening, Brief Intervention and Referral to Treatment (SBIRT) model, Chronic Care Management models, behavioral health, and primary care co-location models</p>
Comparator	Care as usual (e.g., non-integrated behavioral health and primary care services) or use of alternative care integration strategy or strategies
Outcomes	<p>Outcomes of interest will include, but are not limited to the following:</p> <p><i>Health outcomes:</i></p> <ul style="list-style-type: none"> • Morbidity • Mortality • Proportion of patients with improved symptoms • Proportion of patients who received guideline concordant screening and diagnosis • Proportion of patients who achieved remission/recovery at 6 or 12 months • Proportion of patients who are adherent to treatment <p><i>Patient satisfaction:</i></p> <ul style="list-style-type: none"> • Health related quality of life • Functional status (including social and adaptive functioning) • Satisfaction with care

	<p><i>Clinician satisfaction</i></p> <ul style="list-style-type: none"> • Clinician retention/burnout/turnover rates • Clinician quality of life • Clinician professional satisfaction <p><i>Care utilization and process:</i></p> <ul style="list-style-type: none"> • Rates of emergency care utilization for behavioral health crises • Total care utilization rates • Efficiency of clinician time use <p><i>Care access:</i></p> <ul style="list-style-type: none"> • Proportion of patients who report they can receive routine care as soon as they wanted (always, usually, sometimes/never) • Proportion of patients who report they can receive acute care as soon as they wanted (always, usually, sometimes/never) • Average wait time to be seen by clinician • Proportion of patient experiencing difficulties or delays in obtaining care • Proportion of patients with mental health conditions who received treatment • Proportion of patients with SUDs who received treatment <p><i>Population/community/clinic panel health outcomes:</i></p> <ul style="list-style-type: none"> • Preventive care measures • Proportion of patients that received recommended screening services • Proportion of patients that receive immunizations <p><i>Care cost outcomes:</i></p> <ul style="list-style-type: none"> • Cost per patient per year • Cost per service • Costs associated with care delays, fragmentation, poor coordination, redundancy, requested but not completed patient referrals <p><i>Harms (e.g., unintended consequences, including misallocation of effort, delays in care etc.)</i></p>
Setting	Health systems/hospitals and community-based primary care practices in the United States, inpatient and outpatient settings

Abbreviations: SUD=substance use disorder.

Assessment Methods

See Appendix A.

Summary of Literature Findings

Our literature search retrieved 1,835 citations, of which we reviewed a sample of 1,000 titles and abstracts, including 108 published and in-progress reviews and review protocols and 892 research studies. A total of 12 reviews, including nine systematic reviews, one scoping and two narrative reviews and 37 unique primary studies addressed most of the outcomes of interest for KQs 1, 1a, 2 and 3-5 of the nomination. Notably, while we identified many more recent systematic reviews on this topic, most of them synthesized evidence from outdated studies that may not reflect new or emergent evidence, and therefore were not included in this brief. Notably, from of the total of 173 studies cumulatively included in the nine identified systematic reviews, only 32 studies were published within the past five years (2016 – 2021). For this reason, and because none of the included reviews addressed all outcomes of interest for either of the nomination’s key questions (KQs), we searched for and reviewed both published and in-progress reviews and research studies.

Care integration strategies for adults (KQs 1-1a)

A total of nine reviews²⁻¹⁰ and twenty-three primary studies¹¹⁻³³ characterized the existing behavioral and primary care integration strategies for adults and children and adolescents. Specifically, four systematic²⁻⁵ and one narrative review⁹ examined different strategies for integrating behavioral health and primary care for adults with common mental health conditions (KQ1), including depression, anxiety, and post-traumatic stress disorder (PTSD). Another narrative review¹⁰ evaluated models of integrated care for adults with serious mental illness and cardiovascular risk factors.

Additionally, twelve trials¹¹⁻²², including three in-progress clinical trials¹¹⁻¹³, nine published randomized controlled trials (RCTs)¹⁴⁻²² and one RCT protocol²³ evaluated additional care integration strategies. Three in-progress trials¹¹⁻¹³ and one published RCT²⁰ evaluated collaborative care models for the management of substance use disorders and chronic pain in adults with co-occurring depression or anxiety. Two RCTs assessed the effectiveness of collaborative care for the management of PTSD among military service members¹⁴ and among adults from low income communities¹⁸. Three RCTs evaluated collaborative care strategies for the management of adults with co-occurring mental health conditions and cardiovascular risk factors^{16, 17, 19} and one RCT²¹ assessed the effectiveness of integrated behavioral weight loss and depression management for adults with obesity and depression. Finally, one published RCT²² and one RCT protocol²³ considered the effectiveness of integrated mental health and primary care services for adults with multiple co-occurring chronic medical and behavioral health conditions.

Care integration strategies for children and adolescents (KQs 1-1a)

Three systematic reviews⁶⁻⁸ and 10 primary studies²⁴⁻³³, including three in-progress clinical trials²⁴⁻²⁶ and seven published RCTs²⁷⁻³³ examined the effectiveness of different models for integrating behavioral health and primary care for children and adolescents (KQ 1-1a). Two in-progress trials^{24, 26} and three published RCTs^{28, 31, 32} examined the effectiveness of integrated pediatric and behavioral health services on preventing behavioral problems and depression among children and adolescents. One in-progress trial²⁵ and one published RCT³⁰ examined collaborative care models for children with ADHD. The three remaining RCTs assessed integrated care for anxiety and depression^{27, 29} and substance use³³ among children and adolescents.

Effectiveness of care integration strategies across different care contexts (KQ 2-2a)

Only four^{2-4, 6} of the nine reviews and all 23 primary studies¹¹⁻³³ also addressed KQ2 pertaining to the effectiveness of various behavioral and primary care integration strategies for adults as well as children and adolescents. While all the included reviews and primary studies assessed the effectiveness of integration strategies within the context of given patient populations, care settings, and other contexts, none of these publications explicitly examined how the effectiveness of these strategies may differ across these variables (KQ2a).

Barriers and facilitators to implementation, metrics to monitor integration and care team roles as defined by different strategies (KQs 3-5)

For KQ3, two systematic^{8, 51} and one scoping³⁵ review and nine primary studies^{11, 32, 36-42}, including five observational studies³⁶⁻⁴⁰ and four trials^{11, 32, 41, 42} considered various barriers and facilitators to implementation of integrated primary and behavioral health care in children and adolescents and adults. Four primary studies⁴³⁻⁴⁶ additionally assessed outcome metrics

recommended to evaluate and monitor the implementation and sustainability of care integration (KQ4). No reviews and two primary studies^{43, 47} addressed KQ5 regarding how different integration strategies may define or redefine clinical care team functions.

Table 2. Literature identified for each Question

Key Questions	Systematic reviews (11/2018-11/2021)	Primary studies (11/2016-11/2021)
KQ 1. Available strategies for integrating behavioral health and primary care	Total KQ1 reviews: 9 ²⁻¹⁰	Total KQ1 studies: 23 ¹¹⁻³³
	Integration strategies for adults	
	Total: 6 ^{2-5, 9, 10} Systematic reviews – 4 ²⁻⁵ Narrative reviews – 2 ^{9, 10}	Total: 13 ¹¹⁻²³ RCTs – 9 ¹⁴⁻²² RCT protocol – 1 ²³ Clinicaltrials.gov – 3 ¹¹⁻¹³ <ul style="list-style-type: none"> Recruiting – 1¹¹ Not yet recruiting – 2^{12, 13}
	Integration strategies for children	
	Systematic reviews – 3 ⁶⁻⁸	Total: 10 ²⁴⁻³³ RCTs – 5 ²⁹⁻³³ Naturalistic trial – 1 ²⁷ Pre-post trial – 1 ²⁸ Clinicaltrials.gov – 3 ²⁴⁻²⁶ <ul style="list-style-type: none"> Recruiting – 3^{24, 26}
KQ 1a. Variation in integration strategies by core components (a-f)	Total KQ1 reviews: 9 ²⁻¹⁰	Total KQ1 studies: 23 ¹¹⁻³³
	Integration strategies for adults	
	Total: 6 ^{2-5, 9, 10} Systematic reviews – 4 ²⁻⁵ Narrative reviews – 2 ^{9, 10}	Total: 13 ¹¹⁻²³ RCTs – 9 ¹⁴⁻²² RCT protocol – 1 ²³ Clinicaltrials.gov – 3 ¹¹⁻¹³ <ul style="list-style-type: none"> Recruiting – 1¹¹ Not yet recruiting – 2^{12, 13}
	Integration strategies for children	
	Systematic reviews – 3 ⁶⁻⁸	Total: 10 ²⁴⁻³³ RCTs – 5 ²⁹⁻³³ Naturalistic trial – 1 ²⁷ Pre-post trial – 1 ²⁸ Clinicaltrials.gov – 3 ²⁴⁻²⁶ <ul style="list-style-type: none"> Recruiting – 3^{24, 26}
KQ 2: Effectiveness of different integration strategies	Total KQ2 reviews: 4 ^{2-4, 6}	Total KQ2 studies: 23 ¹¹⁻³³
	Integration strategies for adults	
	Systematic reviews – 3 ²⁻⁴	Total: 13 ¹¹⁻²³ RCTs – 9 ¹⁴⁻²² RCT protocol – 1 ²³ Clinicaltrials.gov – 3 ¹¹⁻¹³ <ul style="list-style-type: none"> Recruiting – 1¹¹ Not yet recruiting – 2^{12, 13}
	Integration strategies for children	
	Systematic reviews – 1 ⁶	Total: 10 ²⁴⁻³³ RCTs – 5 ²⁹⁻³³ Naturalistic trial – 1 ²⁷ Pre-post trial – 1 ²⁸ Clinicaltrials.gov – 3 ²⁴⁻²⁶ <ul style="list-style-type: none"> Recruiting – 3^{24, 26}
KQ 2a: Variation in effectiveness by patient	Total KQ2a reviews: 0	Total KQ2a studies: 0

population, setting, and other contexts		
KQ3: Barrers and facilitators to implementation of different integration strategies	Total KQ3 reviews: 3 ^{8, 34, 35}	Total KQ3 studies: 9 ^{11, 32, 36-42}
	Integration strategies for adults	
	Systematic reviews – 1 ³⁴	Total: 9 ^{11, 32, 36-42} Observational – 5 ³⁶⁻⁴⁰ RCTs – 3 ^{32, 41, 42} Clinicaltrials.gov – 1 ¹¹ (recruiting)
	Integration strategies for children	
	Total: 2 ^{8, 35} Systematic reviews – 1 ⁸ Scoping review – 1 ³⁵	Total: 1 ³² RCT – 1 ³²
KQ4: Optimal outcome metrics to evaluate and monitor care integration	Total KQ4 reviews: 0	Total KQ4 studies: 4 ⁴³⁻⁴⁶ Observational – 1 ⁴³ Mixed methods – 1 ⁴⁴ Economic evaluation – 2 ^{45, 46}
KQ 5. How do different care integration strategies define (or redefine) care team functions	Total KQ5 reviews: 0	Total KQ5 studies: 2 ^{43, 47} Mixed methods – 1 ⁴⁷ Observational – 1 ⁴³

Abbreviations: KQ=key question; RCT=randomized controlled trial.

See Appendix B for detailed assessments of all EPC selection criteria.

Summary of Selection Criteria Assessment

Please see Appendix B for detailed assessments of individual EPC Program selection criteria.

This topic nomination meets all selection criteria.

We identified multiple systematic reviews and primary studies that addressed most outcomes of interest for all but one KQs. Different approaches, synthesis methods, and study types, such as a qualitative studies, may need to be used to best answer each of the KQs.

Related Resources

We identified additional information during our assessment that might be useful to the nominators.

*The Pediatric Integrated Care Resource Center (PIC-RC)*⁵² is an online resource developed by the American Academy of Child and Adolescent Psychiatry to promote the integration of medical and behavioral/mental health services for children, adolescents, and their families. The website provides access to relevant resources to educate health professionals and to encourage interdisciplinary collaboration.

*Partnership Access Line (PAL)*⁵³ is an official website featuring the Child Psychiatric Consultation Program for Primary Health Care Providers developed by the Seattle Children's Hospital. It provides academic, programmatic, advocacy, and clinical resources on integrated care for children and adolescents geared towards healthcare providers.

*Advancing Integrated Mental Health Solutions (AIMS) Center*⁵⁴ is an online resource developed by the University of Washington. It summarizes information on evidence-based approaches to behavioral health and primary care integration and offers online training for health professionals.

*SAMHSA – HRSA Center for Integrated Health Solutions (CIHS)*⁵⁵ website maintained by the Substance Abuse and Mental Health Services Administration (SAMSHA) and the Health Resources and Services Administration (HRSA) provides information on evidence-based integrated primary and behavioral service models and technical assistance and training for health professionals.

*The AHRQ Academy for Integrating Behavioral Health and Primary Care*⁵⁶ website is a national resource and coordinating center for professionals who are interested in behavioral health and primary care integration. It organizes and disseminates news, research, and resources.

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Appendix A: Methods

We assessed nomination for priority for a systematic review or other AHRQ Effective Health Care report with a hierarchical process using established selection criteria. Assessment of each criteria determined the need to evaluate the next one. See Appendix B for detailed description of the criteria.

Appropriateness and Importance

We assessed the nomination for appropriateness and importance.

Desirability of New Review/Absence of Duplication

We searched for high-quality, completed or in-process evidence reviews published in the last three years on November 29, 2021 on the questions of the nomination from these sources:

- AHRQ: Evidence reports and technology assessments
 - AHRQ Evidence Reports <https://www.ahrq.gov/research/findings/evidence-based-reports/index.html>
 - EHC Program <https://effectivehealthcare.ahrq.gov/>
 - US Preventive Services Task Force <https://www.uspreventiveservicestaskforce.org/>
 - AHRQ Technology Assessment Program <https://www.ahrq.gov/research/findings/ta/index.html>
- US Department of Veterans Affairs Products publications
 - Evidence Synthesis Program <https://www.hsrp.research.va.gov/publications/esp/>
 - VA/Department of Defense Evidence-Based Clinical Practice Guideline Program <https://www.healthquality.va.gov/>
- Cochrane Systematic Reviews <https://www.cochranelibrary.com/>
- University of York Centre for Reviews and Dissemination database <https://www.crd.york.ac.uk/CRDWeb/>
- PROSPERO Database (international prospective register of systematic reviews and protocols) <http://www.crd.york.ac.uk/prosperto/>
- PubMed <https://www.ncbi.nlm.nih.gov/pubmed/>
- Campbell Collaboration <http://www.campbellcollaboration.org/>
- McMaster Health System Evidence <https://www.healthsystemevidence.org/>
- UBC Centre for Health Services and Policy Research <http://chspr.ubc.ca/>
- Joanna Briggs Institute <http://joannabriggs.org/>

Impact of a New Evidence Review

The impact of a new evidence review was qualitatively assessed by analyzing the current standard of care, the existence of potential knowledge gaps, and practice variation. We considered whether it was possible for this review to influence the current state of practice through various dissemination pathways (practice recommendation, clinical guidelines, etc.).

Feasibility of New Evidence Review

We conducted a literature search in Medline, Cochrane Register of Controlled Trials, PsychInfo and ClinicalTrials.gov from November 30, 2016 through November 30, 2021. We retrieved a total of 1,835 citations and reviewed a sample of approximately 1000 titles and abstracts (comprised of 892 primary studies) for inclusion, and classified relevant studies by KQ and study design to estimate the size and scope of a potential evidence review.

MEDLINE ALL (Ovid) searched on November 30, 2021

1 *Primary Health Care/ or (primary adj3 care).ti. (80130)
2 *Behavioral Medicine/ or *Mental Disorders/ or *Psychiatric Rehabilitation/ or (addict* or ADHD or attention-deficit or anorexi* or ((anxiety or conduct or depressi* or disruptive or obsessive-compulsive or dissociative or impulse-control or somatic or eating or elimination or neurocognit* or neuro-cognit* or neurodevelopmental or neuro-developmental or paraphilia or personality or sleep-wake or trauma) adj2 disorder*) or bipolar or behavior* or bulimi* or "gender dysphori*" or mental* or psychiat* or psycho* or (substance adj3 abus*) or "sexual dysfunction").ti. (898447)
3 and/1-2 (6472)
4 limit 3 to english language (6043)
5 4 not ((exp animals/ not humans/) or (animal* or bovine or canine or cat or cats or cow or cows or dog or dogs or feline or pig or pigs or porcine or rat or rats or rattus).ti.) (6042)
6 limit 5 to yr="2018 -Current" (1419)
7 (meta-analysis or "systematic review").pt. or ((evidence or systematic) adj3 (review or synthesis)).ti,kf. (301242)
8 (((integrative or interpretive or "mixed method" or "mixed methods" or qualitative or realist or thematic) adj3 (synthes* or review*)) or ((framework or narrative) adj2 synthes*)).ti,ab,kf. (22303)
9 (mega-ethnograph* or megaethnograph* or meta-aggregat* or metaaggregat* or meta-ethnograph* or metaethnograph* or meta-interpret* or metainterpret* or meta-method* or metamethod* or meta-narrative* or metanarrative* or meta-study or metastudy or meta-synthe* or metasynthe* or meta-summary or metasummary or meta-triangulat* or metatriangulat*).ti,ab,kf. (2777)
10 ((qualitative adj2 (literature or paper or papers or research or study or studies)) and (synthes* or "systematic review" or "systematic reviews")).ti,ab,kf. (6525)
11 ((qualitative adj2 (literature or paper or papers or research or study or studies)) and ("literature search" or "literature searching" or "literature searches")).ti,ab,kf. (712)
12 ((qualitative adj2 (literature or paper or papers or research or study or studies)) and ("quality assessment" or "critical appraisal" or checklist*).ti,ab,kf. (1918)
13 (((mixed or integrative) adj2 (method* or research or study or studies)) and (synthes* or "systematic review" or "systematic reviews")).ti,ab,kf. (4343)
14 (((mixed or integrative) adj2 (method* or research or study or studies)) and ("literature search" or "literature searching" or "literature searches")).ti,ab,kf. (460)
15 (((mixed or integrative) adj2 (method* or research or study or studies)) and ("quality assessment" or "critical appraisal" or checklist*).ti,ab,kf. (1118)
16 (CERQUAL or CONQUAL or JBI-QARI or QualSys or "Mixed Methods Appraisal Tool" or MMAT).ti,ab,kf. (959)
17 (Noblit and Hare).ab. (80)
18 or/7-17 (316569)
19 and/6,18 (66)
20 limit 5 to yr="2016 -Current" (2075)
21 comparative study/ or exp evaluation studies/ or ("randomized controlled trial" or "controlled clinical trial").pt. or ((control* or random* or clinical) adj5 trial).ti,ab. (2750462)
22 and/20-21 (307)
23 exp Attitude/ or Focus Groups/ or Grounded Theory/ or "Interviews as Topic"/ or exp Qualitative Research/ (705085)
24 ("critical interpretive" or "critical race" or "critical realism" or "critical realist" or emic or etic or ethnograph* or ethnolog* or hermeneutic* or heuristic* or "grounded theory" or phenomenolog* or semiotic*).ti. (12785)

25 (((content or conversation or discourse or narrative or thematic) adj2 analy*) or ((cluster or purposive or theoretical) adj2 (sample* or sampling)) or "constant comparative" or descriptive or ethnonursing or ethno-nursing or (field adj1 (study or studies or work)) or fieldwork or "focus group" or "focus groups" or "key informant" or "key informants" or interview* or "mixed design" or "mixed methods" or qualitative or ((semi-structured or semistructured or unstructured or informal or in-depth or indepth or face-to-face or structured or guided) adj3 (discussion* or questionnaire*)) or survey* or thematic or triangulat*).ti. (282780)

26 (attitud* or barrier* or benefit* or context* or emotion* or facilitator* or experienc* or narratives or opinion* or perception* or perspective* or preference* or react* or theme or themes or value* or valuing or viewpoint* or view or views).ti. (1411908)

27 or/23-26 (2158087)

28 and/20,27 (622)

29 Case-control Studies/ or Cohort Studies/ or Interrupted Time Series Analysis/ or Longitudinal Studies/ or observational study.pt. or (before-after or case-control or cohort* or "interrupted time series" or longitudinal or observational).ti,ab. (1591350)

30 and/20,29 (254)

Cochrane Central Register of Controlled Trials (Ovid EBM Reviews) searched on November 30, 2021

1 Primary Health Care/ or (primary adj3 care).ti. (10307)

2 Behavioral Medicine/ or Mental Disorders/ or Psychiatric Rehabilitation/ or (addict* or ADHD or attention-deficit or anorexi* or ((anxiety or conduct or depressi* or disruptive or obsessive-compulsive or dissociative or impulse-control or somatic or eating or elimination or neurocognit* or neuro-cognit* or neurodevelopmental or neuro-developmental or paraphilia or personality or sleep-wake or trauma) adj2 disorder*) or bipolar or behavior* or bulimi* or "gender dysphori*" or mental* or psychiat* or psycho* or (substance adj3 abus*) or "sexual dysfunction*").ti. (79262)

3 and/1-2 (1045)

4 limit 3 to yr="2016 -Current" (422)

PsycINFO (Ovid) searched on November 30, 2021

1 *Primary Health Care/ or (primary adj3 care).ti. (19614)

2 *Behavioral Medicine/ or exp *Mental Disorders/ or (addict* or ADHD or attention-deficit or anorexi* or ((anxiety or conduct or depressi* or disruptive or obsessive-compulsive or dissociative or impulse-control or somatic or eating or elimination or neurocognit* or neuro-cognit* or neurodevelopmental or neuro-developmental or paraphilia or personality or sleep-wake or trauma) adj2 disorder*) or bipolar or behavior* or bulimi* or "gender dysphori*" or mental* or psychiat* or psycho* or (substance adj3 abus*) or "sexual dysfunction*").ti. (1434014)

3 and/1-2 (8541)

4 limit 3 to english language (8133)

5 limit 4 to yr="2018 -Current" (1162)

6 limit 5 to ("0830 systematic review" or 1200 meta analysis or 1300 metasynthesis) (52)

7 5 and (metaanaly* or meta-analy* or ((evidence or systematic) adj3 (synthesis or review))).ti. (42)

8 (((("critical interpretive" or integrative or interpretative or "mixed methods" or "mixed studies" or qualitative or realist or thematic) and (review or synthesis)) or ((framework or narrative) adj2 synthesis) or mega-ethnograph* or megaethnograph* or metaaggregation or meta-aggregation or metaethnography or meta-ethnography or metainterpretive or meta-interpretive or meta-method* or metamethod* or metanarrative or meta-narrative or metastudy or meta-study or metasynthesis or meta-synthesis or metasummary or meta-summary or meta-triangulat* or metatriangulat*).ti,ab. (29030)

9 (((integrative or mixed or qualitative) adj2 (literature or paper or papers or research or study or studies)) and ("critical appraisal" or checklist* or "literature search" or "literature searching" or "literature searches" or "quality assessment" or syntheses* or "systematic review" or "systematic reviews")),ti,ab. (4782)
 10 (CERQUAL or CONQUAL or JBI-QARI or QualSys or "Mixed Methods Appraisal Tool" or MMAT).ti,ab. (229)
 11 (Noblit and Hare).ab. (39)
 12 or/6-11 (30288)
 13 and/5,12 (68)
 14 limit 4 to yr="2016 -Current" (1999)
 15 14 and ((control* or random* or clinical) adj5 trial).ti,ab. (210)
 16 limit 14 to 1600 qualitative study (278)
 17 limit 14 to "0450 longitudinal study" (165)
 18 14 and (before-after or case-control or cohort* or "interrupted time series" or longitudinal or observational).ti,ab. (210)
 19 or/17-18 (291)

ClinicalTrials.gov searched on November 30, 2021

[Link](#)

AREA[OverallStatus] EXPAND[Term] COVER[FullMatch] ("Recruiting" OR "Not yet recruiting" OR "Active, not recruiting" OR "Enrolling by invitation") AND AREA[TitleSearch] (EXPAND[Concept] "primary care" AND (addiction OR ADHD OR attention-deficit OR anorexia OR (anxiety OR conduct OR depression OR depressive OR disruptive OR obsessive-compulsive OR dissociative OR impulse-control OR somatic OR eating OR elimination OR neurocognitive OR neuro-cognitive OR neurodevelopmental OR neuro-developmental OR paraphilia OR personality OR sleep-wake OR trauma) AND disorder OR bipolar OR behavior or behavioral OR bulimia OR EXPAND[Concept] "gender dysphoria" OR mental OR mentally OR psychiatric OR psychological OR EXPAND[Concept] "substance abuse" OR EXPAND[Concept] "sexual dysfunction")) AND AREA[StudyFirstPostDate] EXPAND[Term] RANGE[11/30/2018, 11/30/2021] (40)

PROSPERO searched on November 30, 2021

("primary care" AND (addiction OR ADHD OR attention-deficit OR anorexia OR ((anxiety OR conduct OR depression OR depressive OR disruptive OR obsessive-compulsive OR dissociative OR impulse-control OR somatic OR eating OR elimination OR neurocognitive OR neuro-cognitive OR neurodevelopmental OR neuro-developmental OR paraphilia OR personality OR sleep-wake OR trauma) AND disorder) OR bipolar OR behavior or behavioral OR bulimia OR "gender dysphoria" OR mental OR mentally OR psychiatric OR psychological OR "substance abuse" OR "sexual dysfunction")):TI WHERE CD FROM 30/11/2018 TO 30/11/2021 (26)

Value

We assessed the nomination for value. We considered whether the clinical, consumer, or policymaking context had the potential to respond with evidence-based change; and if a partner organization would use this evidence review to influence practice.

Appendix B. Selection Criteria Assessment

Selection Criteria	Assessment
1. Appropriateness	
1a. Does the nomination represent a health care drug, intervention, device, technology, or health care system/setting available (or soon to be available) in the US?	Yes. Developing and implementing effective models of integrated care is critical to effectively address the treatment needs of millions of Americans with behavioral health conditions.
1b. Is the nomination a request for an evidence report?	Yes. This nomination is a request for a scoping review summarizing the existing evidence regarding integrated care models
1c. Is the focus on effectiveness or comparative effectiveness?	Yes. Two research questions of the proposed review concern the effectiveness of different integrated care models and how their effectiveness may vary across different patient populations and care settings.
1d. Is the nomination focus supported by a logic model or biologic plausibility? Is it consistent or coherent with what is known about the topic?	Yes. Several integrated care models have been shown effective for improving clinical, and healthcare utilization and cost outcomes in people with behavioral health conditions.
2. Importance	
2a. Represents a significant disease burden; large proportion of the population	Yes. Approximately 57 million Americans experienced mental illness and 17 million had co-occurring substance use disorders in 2020. ¹
2b. Is of high public interest; affects health care decision making, outcomes, or costs for a large proportion of the US population or for a vulnerable population	Yes. Mental illness and substance use disorders are associated with significant morbidity and mortality. ¹
2c. Incorporates issues around both clinical benefits and potential clinical harms	Yes.
2d. Represents high costs due to common use, high unit costs, or high associated costs to consumers, to patients, to health care systems, or to payers	Yes. Behavioral health conditions costs the U.S. economy an estimated \$193 billion in lost earnings each year. ¹
3. Desirability of a New Evidence Review/Absence of Duplication	
3. A recent high-quality systematic review or other evidence review is not available on this topic	We identified multiple systematic reviews and scoping reviews that collectively address parts but not all of 4 of the 5 nomination questions.
4. Impact of a New Evidence Review	
4a. Is the standard of care unclear (guidelines not available or guidelines inconsistent, indicating an information gap that may be addressed by a new evidence review)?	Yes. While different strategies for integrating behavioral health and primary care have been developed and demonstrated effective in clinical trials, none of the published reviews on the subject provide a comprehensive overview of the existing strategies or compare their effectiveness across different patient populations and care settings.
4b. Is there practice variation (guideline inconsistent with current practice, indicating a potential implementation gap and not best addressed by a new evidence review)?	Yes. Uncertainly exists as to which integration strategies are most appropriate within different clinical and practice contexts.
5. Primary Research	

<p>5. Effectively utilizes existing research and knowledge by considering:</p> <ul style="list-style-type: none"> - Adequacy (type and volume) of research for conducting a systematic review - Newly available evidence (particularly for updates or new technologies) 	<p>Based on review of approximately 1,000 citations, we identified the following primary literature for each of the KQs:</p> <p>KQ1, 1a, and 2: 23 primary studies¹¹⁻³³ KQ2a: No primary studies KQ3: 9 primary studies^{11, 32, 36-42} KQ4: 4 primary studies⁴³⁻⁴⁶ KQ5: 2 primary studies^{43, 47}</p> <p>ClinicalTrials.gov: 7^{11-13, 24-26} (included in the count above).</p> <p>Based on the above yield from reviewing approximately one half of the literature search findings, we estimate the size of the proposed review to be large.</p>
6. Value	
6a. The proposed topic exists within a clinical, consumer, or policy-making context that is amenable to evidence-based change	<p>Yes, the AHRQ Academy for Integrating Behavioral Health and Primary Care is interested in developing a scoping review characterizing the existing integrated care interventions for children and adults and their effectiveness in different patient populations and care settings. Findings from this review would help inform implementation of evidence-based care integration strategies by health systems and individual practices.</p> <p>Intermountain Health has investments in integrating behavioral health and primary care, and this evidence review will inform future efforts.</p>
6b. Identified partner who will use the systematic review to influence practice (such as a guideline or recommendation)	Yes, as above.

Abbreviations: AHRQ=Agency for Healthcare Research and Quality; KQ=key question; US=United States.