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.
Link to nomination

Recommendation:

This combined nomination met all selection criteria. While we found multiple recent systematic reviews on this topic, most of them synthesize evidence from outdated studies that may not reflect new or emerging knowledge. There is a sufficient volume of primary literature for a new evidence review. We recommend a scoping review to examine the existing evidence on behavioral health and primary care integration strategies, clarify key concepts related to implementation, and measurement of integration and to identify research gaps.

X Scoping review
□ Systematic review
□ Technical brief
□ Evidence map
□ Rapid review
□ Rapid response
□ Expanded topic brief

Key Findings

- Seven systematic reviews,[2-8] two narrative reviews,[9, 10] and 23 primary studies[11-33] 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 studies[11-33] also evaluated the effectiveness of different care integration strategies for children and adults (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 different patient subpopulations and care settings.
- 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 studies[43-46] additionally assessed outcome metrics recommended to evaluate and monitor the implementation and sustainability of care integration (KQ4).
- 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. They request a scoping review that would characterize the existing 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	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.) *Clinical focus/conditions:* 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	Different strategies for integrating behavioral health and primary care services, with strategies being defined as both program/model components and approaches to care integration.

	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
Comparator	Care as usual (e.g., non-integrated behavioral health and primary care services) or use of alternative care integration strategy or strategies
Outcomes	Outcomes of interest will include, but are not limited to the following: *Health outcomes:* • 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 *Patient satisfaction:* • Health related quality of life • Functional status (including social and adaptive functioning) • Satisfaction with care *Clinician satisfaction* • Clinician retention/burnout/turnover rates • Clinician quality of life • Clinician professional satisfaction *Care utilization and process outcomes:* • Rates of emergency care utilization for behavioral health crises • Total care utilization rates • Efficiency of clinician time use *Care access outcomes:* • 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 *Population/community health outcomes for clinic panels* • Preventive care measures • Proportion of patients that received recommended screening services • Proportion of patients that immunizations *Care cost outcomes:* • Cost per patient per year • Cost per service • Costs associated with care delays, fragmentation, poor coordination, redundancy, requested but not completed patient referrals *Harms* (e.g., unintended consequences, including misallocation of effort, delays in care etc.)
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

We reviewed approximately 1,000 titles and abstracts, composed of roughly 90 systematic reviews and 900 primary studies. A total of eleven reviews, including eight systematic reviews, one scoping and two narrative reviews and 37 unique primary studies cumulatively addressed KQs 1, 1a, 2 and 3-5 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. Furthermore, among the seven included systematic reviews only 32 of the 173 studies cumulatively included in these seven reviews were published within the past five years (2016 – 2021). For this reason, and because none of the identified reviews fully addressed either of this nomination's key questions (KQs), we searched for and reviewed both published and in-progress evidence reviews and primary studies.

A total of nine reviews[2-10] and twenty-three primary studies[11-33] addressed KQs 1 and 1a pertaining to the existing behavioral and primary care integration strategies for adults and children and adolescents. Four systematic[2-5] and one narrative review[9] 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 review[10] evaluated models of integrated care for adults with serious mental illness and cardiovascular risk factors.

Twelve trials[11-22], including three in-progress clinical trials[11-13], nine published randomized controlled trials (RCTs)[14-22] and one RCT protocol[23] evaluated additional care integration strategies. Three in-progress trials[11-13] and one published RCT[20] 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 members [14] and among adults from low income communities[18]. 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 RCT[21] assessed the effectiveness of integrated behavioral weight loss and depression management for adults with obesity and depression. Finally, one published RCT [22] and one RCT protocol[23] considered the effectiveness of integrated mental health and primary care services for adults with multiple co-occurring chronic medical and behavioral health conditions.

Three systematic reviews[6-8] and 10 primary studies[24-33], including three in-progress clinical trials[24-26] and seven published RCTs[27-33] examined the effectiveness of different models for integrating behavioral health and primary care for children and adolescents (KQ2). 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 trial[25] and one published RCT[30] examined collaborative care models for children with ADHD. The three remaining RCTs assessed integrated care for anxiety and depression[27, 29] and substance use[33] among children and adolescents.

Only four[2-4, 6] of the nine reviews and all 23 primary studies[11-33] 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 different integration strategies within the context of given patient populations, care settings, and other contexts, none of these publications explicitly examined how the effectiveness of different strategies may vary across these variables (KQ2a).

For KQ3, two systematic[8, 51] and one scoping[35] review and nine primary studies[11, 32, 36-42], including five observational studies[36-40] 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 studies[43-46] 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] • Recruiting – 1[11] • 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] • 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] • Recruiting – 1[11] • 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] • 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] • Recruiting – 1[11] • 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] • Recruiting – 3[24, 26]
KQ 2a: Variation in effectiveness by patient population, setting, and other contexts	**Total KQ2a reviews**: 0	**Total KQ2a studies**: 0
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 address the nominators' questions. Because of the breadth of the topic, diversity of the reviews, and the fact that the nominators' questions focus not on whether care integration is beneficial, but rather seek to identify which aspects of different integration strategies are best to adapt within different clinical and practice contexts, we recommend a scoping, rather than a systematic review.

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 by providing access to relevant resources for 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 features 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 provides pertinent information on evidence-based approaches to behavioral health integration and offers online training on the topic 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) featuring information on evidence-based integrated primary and behavioral service models and provides 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 about behavioral health integration. https://integrationacademy.ahrq.gov/

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Persons using assistive technology may not be able to fully access information in this report. For assistance contact EPC@ahrq.hhs.gov.

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.hsrd.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/prospero/
- PubMed https://www.ncbi.nlm.nih.gov/pubmed/
- Campbell Collaboration http://www.campbellcollaboration.org/
- McMaster Health System Evidence https://www.healthsystemsevidence.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

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 synthes* 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	
5. Effectively utilizes existing research and knowledge by considering: - Adequacy (type and volume) of research for conducting a systematic review	Based on review of approximately 1,000 citations, we identified the following primary literature for each of the KQs: KQ1, 1a, and 2: 23 primary studies[11-33]

- Newly available evidence (particularly for updates or new technologies)	KQ2a: No primary studies KQ3: 9 primary studies[11, 32, 36-42] KQ4: 4 primary studies[43-46] KQ5: 2 primary studies[43, 47] ClinicalTrials.gov: 7[11-13, 24-26] (included in the count above). 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.
6. Value	
6a. The proposed topic exists within a clinical, consumer, or policy-making context that is amenable to evidence-based change	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. Intermountain Health has investments in integrating behavioral health and primary care, and this evidence review will inform future efforts.
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.

Appendix C. Topic Nomination

0963 Collaborative Care Models for Child Psychiatry

A topic nomination was submitted on the EHC website:
This nomination was submitted on October 4, 2021 (as a part of "pre-work" session during AHRQ Fall 2021 LHS meeting). This nomination form was completed based on information provided by the nominating physician, Dr. Lisa Giles, during the November 1, 2021 AHRQ EPC call discussion of the nominated topic.

==Learning Health Systems Topic Suggestion== *(required)*

1. What is the decision or change you are facing or struggling with where a summary of the evidence would be helpful?
Collaborative care models are the future of child psychiatry. Evidence-based literature on new models of collaborative care for pediatric psychiatry is expanding, but there is no single source where this evidence is effectively summarized for use by health systems. An evidence report on this topic would help Children's Hospital of Intermountain Healthcare identify integrated care models that would help it successfully meet the behavioral health needs of its pediatric patients. Historically, Intermountain Healthcare has been a leader in adapting innovative strategies for integrated mental health care. However, lately it has been more difficult to keep abreast of the rapid developments of new evidence in this area.

   An evidence review on this topic would help Intermountain Healthcare identify new evidence-based models of integrated mental health care for pediatric patients and to develop a strategic plan for implementing care models that would best meet the organization's needs.

2. Why are you struggling with this issue?
   Evidence literature is replete with a large variety of collaborative care models for pediatric care. Health systems across the nation have been adapting different models of collaborative mental health care (the Advancing Integrated Mental Health Solutions (AIMS) model adopted by the Seattle Children's Hospital is just one example) however, there is limited guidance on how to identify which care models may best fit the unique needs of individual healthcare organizations.

   An evidence review examining a broad spectrum of integrated care models for child psychiatry that could be effectively integrated as a part of healthcare systems and their affiliated community-based primary care networks would help Intermountain Healthcare more easily identify which models may be most suitable for implementation within its own practice.

3. What do you want to see changed? How will you know that your issue is improving orhas been addressed?
   Children's Hospital of Intermountain Healthcare would like to identify which evidence-based collaborative care models for child psychiatry (or core components of these models) could be effectively implemented as a part of its health system to better address the needs of its pediatric patients.

4. When do you need the evidence report?
   There is no specific timeline for the report. Intermountain Healthcare wants to develop a strategic plan for implementing an integrated mental health care model for child psychiatry within the next few years.

5. What will you do with the evidence report?
   As above, Intermountain Healthcare would like to use findings from this potential evidence review to identify collaborative care models for child psychiatry that could be effectively integrated within its health system.

   ==Supporting Document== *(optional)*
   Upload Document: Martini R, Hilt R, Marx L, et al. Best principles for integration of child psychiatry into the pediatric health home. Guidelines from the American Academy of Child and Adolescent Psychiatry (2012)
   https://www.aacap.org/App_Themes/AACAP/docs/clinical_practice_center/systems_of_care/best_principles_for_integration_of_child_psychiatry_into_the_pediatric_health_home_2012.pdf Title or short description: This reference provides guidelines for best practices for integration of child and adolescent mental health and pediatric primary care services
   Comments or notes about this file: The above reference was provided by Dr. Giles

   ==(Optional) About You== *(fill in all available information)*
   What is your role or perspective? Physician
   If you are you making a suggestion on behalf of an organization, please state the name of the organization: Intermountain Healthcare
   May we contact you if we have questions about your nomination? Yes
   First and Last Name: Lisa Giles, MD
   Title: Associate Professor of Pediatrics and Psychiatry, University of Utah School of Medicine and Medical Director of Consultation, Crisis, and Community Behavioral Health Services at Primary Children's Hospital, Intermountain Healthcare
   Email Address: lisa.giles@hsc.utah.edu

   The results of this submission may be viewed at: *(N/A for non-webform topics)*

0964 Strategies for Integrating Behavioral Health and Primary Care

This topic was submitted by email on Friday, October 29, 2021 at 4:30 pm EST

1. What is the decision or change you are facing or struggling with where a summary of the evidence would be helpful?

As evidence of the benefits of integrated care becomes more widely known, increasing numbers of primary care practices and health systems are trying to integrate behavioral health and primary care in their own practices, and are looking for guidance on where to start, what aspects are most important for their own context, and how to pay for it. What are the different strategies for integrating behavioral health (including management of SUD) into primary care and what information and evidence is available to help clinicians and practices choose among them and then monitor implementation and performance? Are there developmental pathways through a sequence of steps that have proved to be effective?

2. Why are you struggling with this issue?

AHRQ created the Academy for Integrating Behavioral Health and Primary Care (the Academy) in 2010 to respond to the recognized need for a national resource and coordinating center for those interested in behavioral health and primary care integration. One of the first projects the Academy undertook was the Lexicon for Behavioral Health and Primary Care Integration (the Lexicon), a set of concepts and definitions developed by experts to provide a practical definition for behavioral health integration as implemented in practice settings. The Lexicon starts by defining Integrated Behavioral Health and Primary Care as "*The care that results from a practice team of primary care and behavioral health clinicians, working together with patients and families, using a systematic and cost-effective approach to provide patient-centered care for a defined population. This care may address mental health and substance abuse conditions, health behaviors (including their contribution to chronic medical illnesses), life stressors and crises, stress-related physical symptoms, and ineffective patterns of health care utilization.*" It then defines the different aspects of integration, such as what an "explicit, unified, and shared care plan" should include, and parameters for describing different configurations of care.

This systematic set of definitions enable clear communication and action among clinicians, care systems, health plans, payers, researchers, policymakers, business modelers, and patients working for effective, widespread implementation on a meaningful scale and is still and still the most frequently accessed page on the website. However, as the field of integration has evolved, the questions have moved from defining integrated care to how to choose among different strategies for integration and how to know whether integration is being done well. Models such as the Collaborative Care Model (CCM) and SBIRT have attracted the most attention, but a wide range of other approaches, including adapted CCM, co-location and telehealth are in use. At the same time, the ongoing Substance Use Disorder (SUD) crisis has spurred the development of a whole new set of approaches for how to integrate SUD management into other behavioral health treatment and primary care. Therefore, the Academy proposes an EPC scoping review of different strategies (defined as both program components and approaches to implementation) for integration of behavioral health, including SUD treatment, in primary care.

The Academy proposes a scoping review rather than a systematic review for two reasons. First, the decisional dilemma is not whether integration is beneficial, but rather which aspects are best to adopt when, where, and how. Second, the available studies are heavily skewed towards one specific model (the Collaborative Care Model) despite the wide spectrum of strategies employed in practice. Thus, a systematic review approach would likely lead to the conclusion that there is strong evidence for Collaborative Care Model and nothing else, and would lack enough detail about the different strategies in use to support development of the intended guide. If this topic goes forward, the Academy can help develop a more formal conceptual framework for categorizing the important elements to abstract for an integration strategy.

Potential Key Questions:

1) What are the available strategies for integrating behavioral health, including management of SUD, into primary care settings?
    a. How do they vary by clinical focus, setting, core components, mechanism of integration, business models, and resources required?
    b. How do they define/redefine care team roles in the office practice, and what trainings are required?
2) What evidence is available on effectiveness of these strategies in terms of feasibility, implementation measures, patient outcomes, practitioner burden, costs, and sustainability?
    a. Which strategies have evidence of effectiveness for which patients (i.e. CVD and depression, maternal health, SUD/PPD, whole person care), settings, and contexts (include payment models as context)?
3) What are the best metrics for monitoring and evaluating integration? Should metrics be different as an integration strategy matures? How often should metrics be measured?
4) What are the barriers to implementing and sustaining integrated strategies and how can they be overcome? What are the facilitators that implementors should capitalize on? Are there synergies among specific strategies?

A preliminary list of outcomes could include:

- Individual or family clinical outcomes (symptom or disease outcomes; functional status, quality of life)
- Population health or community health improvement for your clinic panel
- Public health or prevention measures
- Access: time to first "touch"—getting started with the problem
- Patient experience. Ease of quickly creating a relationship with the patient in context of trusted PC
- Available physician appointment time; better focused use of provider time.
- Reduced total cost of care—costs of delays, fragmentation, poor coordination, redundancy, failed referrals
- Clinician satisfaction—joy of practice; comfort and confidence with BH dimension of practice—*less quitting*.
- Care team skill, spirit, and function—higher functioning teams with intrinsic satisfaction of being in one

- Improved health equity / health disparities**:** Help burdened populations get what they need; *social justice*.
- Improved clinician education—better point-of-service learning experiences for a generationof clinicians
- Routinely good implementation with reach and fidelity, such as measured via RE-AIM

This topic was proposed by the National Integration Advisory Council (NIAC), which wants to develop a guide to help practices and health systems select the strategy for integrating behavioralhealth that best matches their needs and context. The NIAC is a group of experts in Primary Care, Behavioral health, Health care finance, Medical education, Patient advocacy, Health care for diverse populations, and Health care policy that advises the Academy. As the end users of the report, they could also serve on the TEP. The guide itself would be disseminated through theAcademy website and Academy dissemination activities and partnerships with other HHS agencies.

3. What do you want to see changed? How will you know that your issue is improving or hasbeen addressed?
If the Academy is able to produce a guide based on the scoping review, we hope to see moreprimary care practices offer evidence-based integrated behavioral health, and more patients receiving high quality treatment for their physical and mental health needs. Eventually we would like to be able to link this to improved patient outcomes.

4. When do you need the evidence report?
The sooner the better. The end of 2022 would be ideal, but we can still use it if that deadline is not feasible.

5. What will you do with the evidence report?
The Academy, with the support of the NIAC, would use this review to develop a guide to help practices and health systems select strategies for integrating behavioral health that best matches their needs and context. The guide would describe the different options, highlight what the evidence says, describe the advantages and disadvantages of each for different goals and practicesettings, and offer metrics for monitoring implementation and success. This could be used by clinic administrators and clinician champions, health systems (including grant writing staff), and FQHCs; CMS and HRSA may potentially be interested. The Academy would then also develop aresource list to support implementation.