Integrated Mental and Behavioral Health Care

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PREFACE

The VA Evidence Synthesis Program (ESP) was established in 2007 to conduct timely, rigorous, and independent systematic reviews to support VA clinicians, program leadership, and policymakers improve the health of Veterans. ESP reviews have been used to develop evidence-informed clinical policies, practice guidelines, and performance measures; to guide implementation of programs and services that improve Veterans' health and wellbeing; and to set the direction of research to close important evidence gaps. Four ESP Centers are located across the US. Centers are led by recognized experts in evidence synthesis, often with roles as practicing VA clinicians. The Coordinating Center, located in Portland, Oregon, manages program operations, ensures methodological consistency and quality of products, engages with stakeholders, and addresses urgent evidence synthesis needs.

Nominations of review topics are solicited several times each year and submitted via the ESP website. Topics are selected based on the availability of relevant evidence and the likelihood that a review on the topic would be feasible and have broad utility across the VA system. If selected, topics are refined with input from Operational Partners (below), ESP staff, and additional subject matter experts. Draft ESP reviews undergo external peer review to ensure they are methodologically sound, unbiased, and include all important evidence on the topic. Peer reviewers must disclose any relevant financial or non-financial conflicts of interest. In seeking broad expertise and perspectives during review development, conflicting viewpoints are common and often result in productive scientific discourse that improves the relevance and rigor of the review. The ESP works to balance divergent views and to manage or mitigate potential conflicts of interest.

ACKNOWLEDGMENTS

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Operational Partners

Operational partners are system-level stakeholders who help ensure relevance of the review topic to the VA, contribute to the development of and approve final project scope and timeframe for completion, provide feedback on the draft report, and provide consultation on strategies for dissemination of the report to the field and relevant groups.

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Key Informants

The ESP sought input from key informants with diverse experiences and perspectives relevant to the review topic. Key informants included:

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Disclosures

This report was prepared by the Evidence Synthesis Program Center located at the **VA Greater Los Angeles Healthcare System,** directed by Paul Shekelle, MD, PhD and Isomi Miake-Lye, PhD and funded by the Department of Veterans Affairs, Veterans Health Administration, Health Systems Research.

The findings and conclusions in this document are those of the author(s) who are responsible for its contents and do not necessarily represent the views of the Department of Veterans Affairs or the United States government. Therefore, no statement in this article should be construed as an official position of the Department of Veterans Affairs. The final research questions, methodology, and/or conclusions may not necessarily represent the views of contributing operational and content experts. No investigators have affiliations or financial involvement (*eg*, employment, consultancies, honoraria, stock ownership or options, expert testimony, grants or patents received or pending, or royalties) that conflict with material presented in the report.

Executive Summary

KEY FINDINGS

- There is insufficient evidence from the published literature to guide how best to integrate mental health care into specialty medical care.
- In the VA setting, the intervention with the most evidence to support its beneficial effect is a specialty-clinic modification of TIDES (Translating Initiatives in Depression into Effective Solutions).

A small proportion of Veterans account for nearly half of Veterans Affairs (VA) costs, most of which is hospitalization for medical (not mental health) conditions. But, almost half of such patients have a major mental health diagnosis. These mental health conditions, many of which are potentially treatable, are risk markers (and potentially risk factors) for future emergency visits and admissions for ambulatory care-sensitive conditions. Thus, better identification and treatment of mental health conditions can improve not just mental health but physical health as well. VA has led the way in integrating mental health into primary care and is now considering initiating efforts at doing so in outpatient specialty clinics as well. Thus, the VHA Office of Mental Health asked the Evidence Synthesis Program for a review of recently published studies of mental health integration into outpatient specialty care.

CURRENT REVIEW

This review searched Medline and PsycInfo for studies published in the last 10 years that assessed the integration of mental health care into adult specialty clinic care. We did not assess the inclusion of palliative care into oncology clinic, but otherwise had few constraints on study design or type of integration or outcome being measured. The level of integration was assessed by content experts using the Center for Integrated Health Solutions 6 levels of integration framework.

From 6,392 titles, we identified 16 relevant publications. One study was level 6 integration (full collaboration in a transformed/merged integration practice), 1 study was level 5 integration (close collaboration approaching an integrated practice), 2 studies were level 4 integration (close collaboration onsite with some system integration), 7 studies (in 9 publications) were level 3 integration (basic collaboration onsite), and 3 studies were level 2 integration (basic collaboration at a distance). Eight studies were randomized trials and 6 studies used nonrandomized designs, of which 4 were case series/pre-post studies. All studies but 1 had 1 or more domains at high risk of bias. Nine of the studies were performed in single clinic or practice locations, and 5 studies (in 7 publications) were multisite. Three studies were performed in VA settings, 4 studies were performed in the United Kingdom, and the rest were conducted at single US sites. Two studies described their intervention as being embedded in clinic care, 2 studies (in 4 publications) described their intervention as being based on TIDES, 4 studies described their intervention as collaborative care, 4 related studies from the United Kingdom variously described their intervention as collaborative care and integrated care, 1 study described its intervention as co-managed care, and the last study could not be classified with any of the others.

The strongest evidence of success in the VA setting were the 2 RCTs of TIDES-based interventions, one in a liver clinic and the other in an HIV clinic, which both found improvements in depression outcomes. Only 2 studies were of level 5 or 6 integration, and 1 of these was not relevant to VA while the other study included psychosocial collaborative care as part of a multicomponent intervention for

patients with acute cardiac issues, requiring hospital admission, and found some improvements in depression, anxiety, and fatigue relative to usual care. Beyond that, evidence was sparse given lack of studies for effective interventions in a VA setting.

CONCLUSIONS

The findings from this review are that: 1) there are no published studies relevant to VA of full collaboration in a transformed/integrated practice for integrating mental health into specialty clinics; 2) there are only 3 published studies of close collaboration approaching an integrated practice or close collaboration onsite with some system integration (in other words, anything greater than basic collaboration); and 3) the studies most relevant to VA (done in VA settings) had interventions based on TIDES, modified for specific diseases (liver disease and HIV). Both studies were randomized trials and both found improvements in intervention patients compared to usual care on depression outcomes.

Main Report

Evidence Synthesis Program

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ABBREVIATIONS TABLE

Abbreviation	Definition
AI	Artificial intelligence
CIHS	Center for Integrated Health Solutions
GAD	General anxiety disorder
GRADE	Grading of Recommendation, Assessment, Development and Evaluation
ICD	International Classification of Diseases
PCMHI	Primary care mental health integration
PHQ	Patient health questionnaire
ROBINS-I	Risk Of Bias In Non-randomised Studies - of Interventions
SMI	Serious mental illness
TIDES	Translating Initiatives in Depression into Effective Solutions
VA	Department of Veterans Affairs

BACKGROUND

The rationale for integrating mental health care with physical health care clinical sites has been persuasively laid out by Lisa Rubenstein, professor emerita of medicine and public health at University of California–Los Angeles (UCLA) and past recipient of the Department of Veterans Affairs (VA) Under Secretary for Health Award.[1] She notes that a small proportion of Veterans (5%) account for nearly half of VA costs, most of which is hospitalization for medical (not mental health) conditions. But, almost half of such patients have a mental health diagnosis. These mental health conditions, many of which are potentially treatable, are risk markers (and potentially risk factors) for future emergency visits and admissions for ambulatory care-sensitive conditions. Thus, better identification and treatment of mental health conditions not only has the potential to improve patients' physical and mental health, but may also reduce health care utilization.

Requiring patients to see different providers in different clinics for their mental and physical health conditions is a barrier to the successful treatment of either. Thus, there is an imperative for integrating mental health care and physical health care.

VA embarked on such mental health integration about 20 years ago, with the Primary Care-Mental Health Integration (PCMHI) initiative. This initiative built on 3 successful research projects: Translating Initiatives in Depression into Effective Solutions (TIDES), the Behavioral Health Laboratory model, and the White River Junction co-located mental health care model. The success of the PCMHI initiative now spurs integrating mental health care into certain specialty clinics, particularly in situations where the specialty clinic cares longitudinally for persons with chronic conditions (*eg*, ongoing care provided by Infectious Disease clinics to persons living with HIV).

Three older systematic reviews have dealt with some aspects of mental health integration into specialty clinics. Two reviews, with search end dates of 2014 and 2021, were specific to HIV clinic care.[2,3] The third review broadly covered specialty medical clinics and was also more broad in its intervention focus, including "models for treating depression."[4] The review had a search end date of 2013. All reviews concluded the evidence was limited, and additional research was needed.

Thus, the VHA Office of Mental Health asked the Evidence Synthesis Program (ESP) for a review of more recent published studies of mental health integration into outpatient specialty clinic care.

METHODS

REGISTRATION AND REVIEW

A draft version of this report was reviewed by external peer reviewers; their comments and author responses are located in the Appendix. We filed a review protocol with the ESP Coordinating Center.

KEY QUESTIONS AND ELIGIBILITY CRITERIA

The following key questions were the focus of this review:

Key Question 1	What approaches have been used to integrate mental or behavioral health care into specialty medical care settings?
Key Question 2	Does integration of mental or behavioral health care into specialty medical care settings improve patient-important outcomes or health service delivery outcomes?

Study eligibility criteria are shown in the table below.

Population	Adult patients in outpatient specialty medical care settings (oncology, neurology, sleep, infectious disease, cardiology, pulmonary, endocrinology, urology, hepatology, nephrology, and geriatric care) with co-occurring mental or behavioral health conditions/symptoms
Intervention	Approaches or models for integration of mental or behavioral health care into specialty care settings. Approaches should include 1 or more of the following components: co-location of behavioral health and medical specialty care services, active referral ("warm hand-off") between services, case/care management, screening and/or brief interventions for mental and behavioral health concerns within a specialty medical care setting. Approaches consisting only of passive referral (*eg*, provision of contact information for a behavioral health care provider) will be ineligible.
Comparator	Usual care (*ie*, specialty care without integrated mental or behavioral health services or with passive referrals only), alternative approaches
Outcomes	Patient-important and health service delivery outcomes (*eg*, mental health condition severity, health-related quality of life, satisfaction with care, access to behavioral health care, wait times, engagement/retention, successful referrals, staff workload, staff satisfaction)
Study Design	Any

SEARCHING AND SCREENING

To identify articles relevant to the key questions, a research librarian searched Medline and PsycInfo through 1/29/24 and 2/14/24, respectively, using terms for mental health, behavioral health, and patient care team (see Appendix for complete search strategies). Additional citations were identified from hand-searching reference lists and consultation with content experts.

We used the artificial intelligence function in DistillerSR to screen titles and abstracts from the search results. First, the lead author reviewed a sample of 760 titles and abstracts and selected 23 studies meeting all eligibility criteria. The AI function then used this information to estimate a likelihood of being eligible for each of the 3,652 search results. The lowest likelihood of eligibility for any of the 23 studies included by the lead author was 0.4 (on a scale from 0 to 1.0). More than 3,000 references were given a very low likelihood of eligibility (ranging from 0 to 0.1). The lead author manually reviewed a 10% random sample of these and found no eligible studies, which suggested that the screening

algorithm was accurately differentiating eligible and ineligible studies. In the last step, the lead author manually reviewed the studies assigned a likelihood of eligibility greater than 0.1 (k = 256) to identify included studies. Aside from the database searches, we manually screened a list of approximately 1,000 potentially relevant titles that had been identified for a related project by the operational partner. Abstracts and full text articles were reviewed for studies meeting the inclusion criteria. Studies from low and middle income countries were excluded due to the likely context sensitivity in the types of interventions proposed and the health care systems they are implemented in.

One change was made to the exclusion criteria after the review began: we did not include studies specifically about palliative care in oncology clinics (which often includes a mental health practitioner). With the operational partner's agreement, we judged this type of mental health integration to be outside the focus of this review. Lastly, while the specialty clinics named in the eligibility criteria above (oncology, neurology, sleep, *etc*) were of greatest interest to the operational partner, we did not exclude studies if the specialty clinic was not on the list (such as pain clinics).

DATA ABSTRACTION AND RISK OF BIAS ASSESSMENT

Abstracted data included study characteristics (design, sample size, setting), type of mental health being integrated, what specialty clinic it is being integrated into, level of integration according to the Center for Integrated Health Solutions (CIHS) framework[5] (see Table 1), results of the study, and elements needed to complete the Cochrane Risk of Bias[6] and Risk Of Bias In Non-randomised Studies - of Interventions (ROBINS-I) Risk of Bias[7] tools. We used single reviewer data extraction, performed by the lead author.

Table 1. Six Levels of Collaboration/Integration

Coordinated **Key Element: Communication**		**Co-Located** **Key Element: Physical Proximity**		**Integrated** **Key Element: Practice Change**	
LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5	LEVEL 6
Minimal Collaboration	Basic Collaboration at a Distance	Basic Collaboration Onsite	Close Collaboration Onsite with Some System Integration	Close Collaboration Approaching an Integrated Practice	Full Collaboration in a Transformed/Merged Integrated Practice

Notes. Adapted from the CIHS Standard Framework for Levels of Integrated Healthcare.[5]

SYNTHESIS

The data synthesis is narrative, with studies grouped into the level of integration, and then within that by study design and type of mental health/specialty clinic. Level of integration was determined by content experts with the operational partner reviewing highlighted descriptions of the intervention.

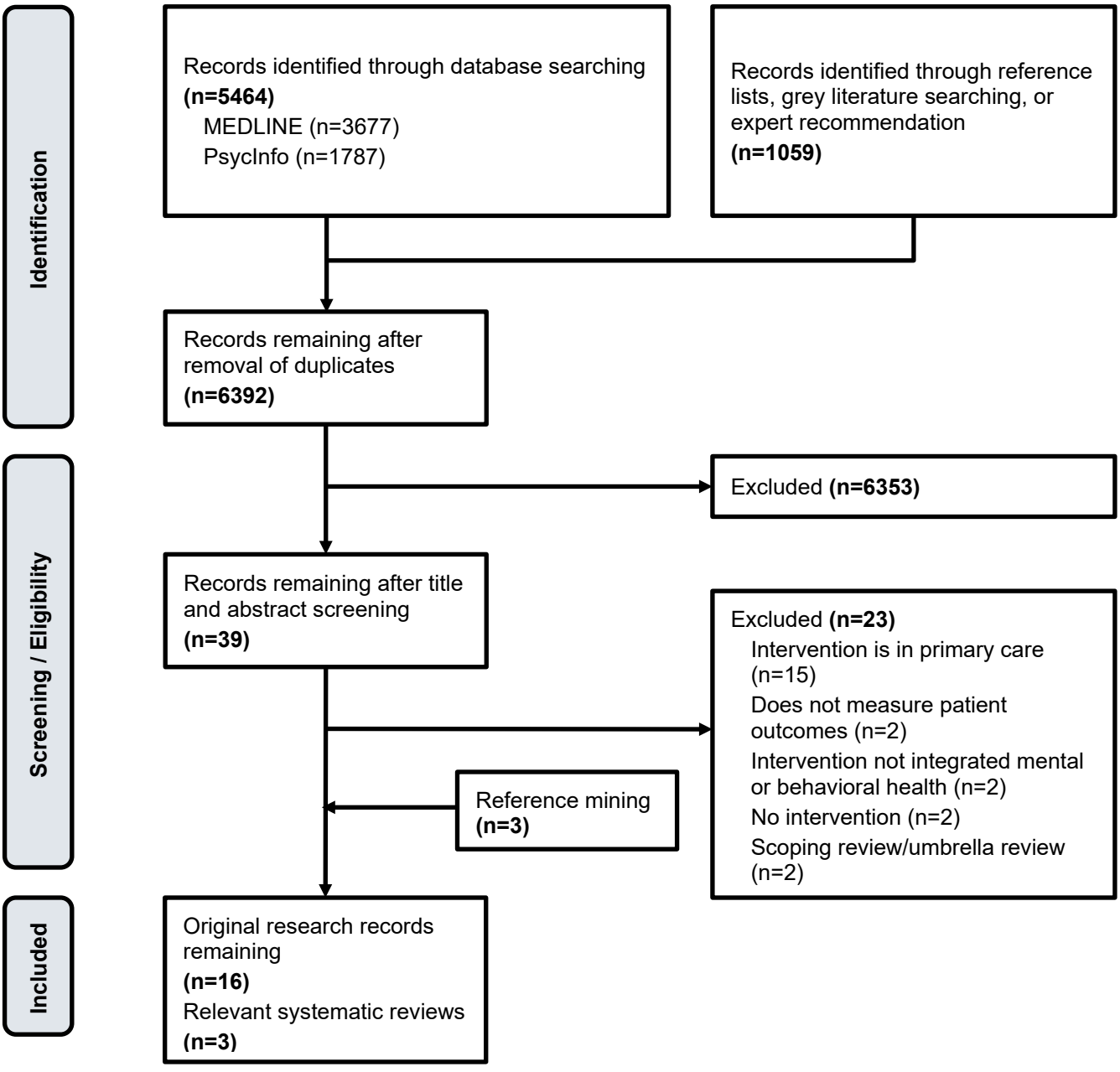
Strength of Evidence

The evidence base for integration at levels 4, 5, and 6 (in other words, all studies over level 3, which is basic collaboration onsite) consisted of only 4 studies, only 1 of which was a randomized trial, and all of which were in different clinical settings. Thus, there was insufficient evidence to formally assess the strength of evidence for each outcome across studies, and rather we discuss some general themes from the included studies without a formal strength of evidence assessment as done by GRADE.

RESULTS

LITERATURE FLOW DIAGRAM

The literature flow diagram summarizes the results of the study selection process. A full list of excluded studies is provided in the Appendix.



OVERVIEW OF INCLUDED STUDIES

Our search identified 6,392 potentially relevant articles after deduplication and title and abstract screening. Of these, 14 primary studies (in 16 publications) met eligibility criteria. Characteristics of included studies are shown in Table 1. One study was level 6 integration (full collaboration in a transformed/merged integration practice),[8] 1 study was level 5 integration (close collaboration approaching an integrated practice),[9] 2 studies were level 4 integration (close collaboration onsite with some system integration),[10,11] 7 studies (in 9 publications) were level 3 integration (basic collaboration onsite),[12-20] and 3 studies were level 2 integration (basic collaboration at a distance).[19,21,22] Eight studies were randomized trials[9,12,14-19,22,23] and 6 studies used nonrandomized designs,[8,10,11,13,20,21] of which 4 were case series/pre-post studies.[8,11,13,21] Because these studies are impossible to blind, all randomized studies were judged to be at high risk of bias in at least 1 domain, while 3 of the 6 nonrandomized studies were judged to be at high risk of bias due to possible confounding.[8,13,20] Nine of the studies were performed in single clinic or practice locations, and 5 studies (in 7 publications) were multisite. Three studies were performed in VA settings,[9,15-18] 4 studies were performed in the United Kingdom,[19,20,22,23] and the rest at single US sites.

Approaches That Have Been Used and Outcomes of Integration of Mental or Behavioral Health Into Specialty Care

The narrative that follows refers to Table 2 and presents the results of studies that have sought to integrate mental or behavioral health into specialty outpatient care, according to how the authors described the integration and our assessment of the degree of integration (according to the CIHS Levels of Integration).[5]

Described as Embedded

Two studies were described by the authors as embedded. One study we judged to be level 4 integration, and embedded mental health services into a pain management clinic.[10] This was a controlled before-and-after study of 453 patients who attended at least 3 appointments with a clinical psychologist in either an individual or group setting. Patients were attending the pain medicine clinic at a large academic urban teaching hospital and had been evaluated by a pain specialist physician. The comparison group consisted of 8,383 patients attending the same clinic who did not attend at least 3 clinical psychologist appointments. Propensity scoring on age, sex, race, body mass index, International Classification of Diseases (ICD)-10 diagnoses, insurance status, Charlson comorbidity index, tobacco, alcohol or illicit drug use, and categories of medications was used with an inverse probability weighting method to assess the effect of the mental health services. Intervention patients improved more than comparison patients in a few standardized outcomes at 3 or 6 months, namely a measure of the change for the most recent treatment and also the patient's overall impression of change. Many other measures improved equally in both groups, such as average pain intensity, pain interference and pain behavior, and a few outcome measures improved more in the control group (global physical health, anxiety, and neuropathic pain).

We identified a second study described by the authors as embedded, which we judged to be level 6 integration.[8] This involved the inclusion of a behavioral health provider into a women's health and perinatal care clinic. The study reported that 91% of patients preferred behavioral health be integrated into women's health care, and 73.9% thought that integrated behavioral health greatly improved the perinatal experience. The context of this study, and the methodologic limitations of it (no sample size

reported, no pre-intervention data reported, no control group per se) make it of limited usefulness to VA.

Described as Based on TIDES

We identified 2 studies, in 4 publications, performed in VA settings: 1 study in liver clinics[15,16] and the other study in HIV clinics.[17,18] Both interventions were modeled after the successful TIDES intervention to improve depression outcomes in primary care.[1] TIDES is a multimodal model for collaborative care between primary care and mental health for identification and treatment of depression. It includes interactions between the primary care clinician, a mental health specialist, and a care manager, all of whom interact with each other. The care manager supports the primary care clinician by interacting directly with the patient for periodic assessments, education, and time-limited follow-up (meaning 6 months after detection) and reviews their panel of patients with the mental health specialist weekly. The model includes decision support, patient self-management support, community resources, and clinical information systems to promote informed, active patients. Basic design features of TIDES include systematic screening for depression via an EHR clinical reminder, initial assessment, and proactive follow-up, with mental health supervision of the care manager, and can be completely carried out by telephone. There is a heavy emphasis on patient education and activation.

Both specialty care TIDES modifications involved an offsite depression care management team who interacted with the onsite specialist clinicians, this interaction happening solely by notes in the electronic health record. The depression care management team also communicated with the patient by telephone. Both interventions were judged to be level 3 integration. Like the parent TIDES intervention, both of these disease-specific modifications of TIDES found that intervention patients improved on a number of depression outcomes.

Described as Collaborative Care

We identified 4 studies described as collaborative care One of these was performed in part in a VA setting. [9] Three of the studies were judged to be level 3 integration[12-14] and 1 study was judged to be level 5 integration.[9] This 2-arm, multisite randomized clinical trial was conducted in 3 settings in Colorado: an academic medical center, a Veterans Affairs system, and a safety-net health system. The intervention was aimed at patients with heart failure and depression. Patients did not have to be enrolled in cardiology clinic to be eligible, but 75% of patients did see a cardiologist. The intervention had 3 components: assessment of symptoms by a nurse; a social worker who provided structured psychosocial care, and a multidisciplinary team (including a social worker) reviewing care and making suggestions for tests and medications. The 3 symptoms targeted were pain, breathlessness, and fatigue and depression. Usual care patients received care at the discretion of their clinicians. Enrolled patients were mostly male, with a mean age of about 65 years, and about one-third had depression. Among 158 patients randomized to the intervention, there were no statistically significant differences compared to 159 usual care patients in 6 month outcomes on a disease-specific measure of health-related quality of life, but depressive symptoms on the PHQ-9 modestly improved; 3 month (but not 6 month) outcomes anxiety on the General Anxiety Disorder (GAD)-7 also were somewhat better.

Two more studies assessed off-site collaborative depression care (similar to but not the same as in TIDES) for patients attending an urban academic teaching hospital cardiology clinic,[12] and off-site depression and anxiety collaborative care for patients initially identified during an inpatient urban academic teaching hospital admission for an acute cardiac illness (arrythmia = 29%, heart failure =

22%, myocardial infarction = 24%, unstable angina = 26%) but then followed as outpatients by telephone every 6 weeks,[14]. The first of these RCTs did not find beneficial effects, but the second RCT reported statistically significant improvements in some measures of mental health and depression.

The fourth study was observational and used off-site collaborative care for patients with anxiety or depression and inflammatory bowel disease.[13] This small study ($N = 19$) found that specialists agreed the collaborative care was "a highly beneficial resource" for providers and patients in the specialty clinic. Clinical outcomes were not statistically significantly different between pre- and post-measurements.

Variously Described as Collaborative Care, Then Integrated Care

We identified 4 studies, all related, for which the intervention was described as collaborative and later integrated care.[19,20,22,23] All studies were set in the United Kingdom, 3 of them in regional cancer centers in Scotland and the fourth a mixed-methods study of implementation in the Oxford cancer center. Two of these studies were judged to be level 2 integration and the other 2 studies were judged to be level 3 integration. All studies involved integrating depression care into primary care and oncology clinic care. The first study, an RCT, used onsite and offsite depression care management delivered by a nurse to patients attending a regional cancer center in Scotland. It found sustained improvements in depression symptoms at 3, 6, and 12 months. Two follow-on studies were RCTs, one described as integrated collaborative depression care and the other as onsite and offsite depression care, and both also found improvements in a number of measures of mental health (depression, anxiety) but also physical symptoms such as fatigue and pain, as well as health-related quality of life.[19,22] The fourth study used mixed methods to assess the implementation at an Oxford University cancer center of offsite and onsite collaborative care for depression[20] (related to the intervention used in Scotland, above) and found that specialists agreed the collaborative care was a good thing to have in the specialty clinic.

Comanagement Program

We identified 1 study described as a co-management program. It was a small ($N = 22$) case series with pre-post measures of adding an addiction care team to an academic urban safety net hospital clinic for stimulant-induced cardiomyopathy.[21] This study's design and small size make it of limited usefulness to VA.

Miscellaneous

We identified 1 study that we could not classify with any of the others. It assessed an intervention to assess and treat serious mental illness (schizophrenia, bipolar disorder, severe major depression) in an oncology clinic.[11] The study was a small case series of 25 patients (of 33 eligible) who completed assessments at all time points. The study was conducted in a large academic teaching hospital. The intervention consisted or early tracking and identification of clinic patients with serious mental illness (SMI); person-centered assessment and care; multidisciplinary team-based care; and increased access to a psychiatrist. Enrolled patients completed a number of questionnaires up to 20 weeks. There was no control group per se. Clinician ratings of improvement, namely the clinical global impression-severity component and the Brief Psychiatric Rating Scale, and patient assessments of health (such as Patient Health Questionnaire [PHQ]-9) did not improve. This study's small size and lack of a usual care control group limits its usefulness to VA.

Table 2. Characteristics of Included Studies

Name, Year, ID	Study Design, Sample Size	Setting	What's the Intervention or What's Being Integrated	What Is It Being Integrated Into	Level of Collaboration/ Integration[a]	Outcomes Assessed
Described as Embedded						
Gillman, 2020[10]	Controlled before and after Embedded MH *N* = 451 Standard care *N*= 8383	One academic medical center (Pitt)	Embedded mental health services	Pain clinic	4	Mixed results on14 measures from PROMIS, with one some better in the MH group and others better in the standard care group.
English, 2020[8]	Case series with pre/post measures *N* = not stated	One community care clinic	Doctor of Behavioral Health	Midwife center for birth and wellness	6	74% of women said having integrated behavioral health greatly improved the perinatal experience.
Based on TIDES						
Kanwal, 2016[15] Kanwal, 2018[16]	RCT *N* = 242	Four VA liver clinics	Offsite collaborative depression care	Liver clinic	3	Remission of depression at 12 months: 19.3% in intervention group, vs 7% in standard care group (p = 0.004); starting antiviral therapy 9.7% in intervention group vs 5.5% in standard care group (p = not significant).
Painter, 2015[17] Pyne, 2011[18]	RCT *N* = 249	Three VA HIV clinics	Offsite HIV depression care team	HIV clinics	3	Response rate for depression at 6 months in intervention vs control was 33.3% vs 17.5% (p = 0.004); no difference at 12 months. Intervention patients also had greater improvements in HIV symptom severity but no differences in health-related QoL, medication prescribing or adherence. Modeling estimated with 96% probability that the incremental cost-effectiveness ratio was less than $20,000/quality-adjusted life year.

Name, Year, ID	Study Design, Sample Size	Setting	What's the Intervention or What's Being Integrated	What Is It Being Integrated Into	Level of Collaboration/ Integration[a]	Outcomes Assessed
Described as Collaborative Care						
Carney, 2016[12]	RCT *N* = 201	One academic medical center (Wash U)	Collaborative depression care	Cardiology clinic	3	No statistically significant differences between groups in depression scales, QoL, hospitalization, mortality, satisfaction.
Bekelman, 2018[9]	RCT *N* = 314	Three health systems: VA, urban safety net, academic health center	Psychosocial collaborative care	Usual care, which could be primary care + cardiology (77% of patients had cardiology)	5	No statistically significant difference between groups in disease-specific QoL. Depression symptoms, fatigue, and anxiety improved somewhat more in the intervention group.
Flicek, 2022[13]	Case series with pre/post measures *N* = 19	One academic medical center (UNC)	Offsite collaborative care for behavioral health problems (anxiety and depression)	Academic center adult inflammatory bowel disease clinic	3	No statistically significant differences between pre- and post-measurement of anxiety and depression outcomes. Gastroenterology providers all highly agreed that the collaborative care program was a beneficial resource.
Huffman, 2014[14]	RCT *N* = 183	One academic health center	Collaborative depression and anxiety care	Inpatient team + possibly primary care	3	Statistically significant improvement in the collaborative care patients compared to usual care in mental health quality of life, depressive symptoms, overall health-related quality of life, and general functioning. No difference in readmissions.
Variously described as Collaborative Care, then integrated care						
Strong, 2008[23]	RCT *N* = 200	One regional Scotland cancer center	Onsite or offsite one-on-one depression care delivered by trained nurses	Primary care and oncologist clinic care	3	Depression symptoms on the SCL-20 at 3, 6, and 12 months improved more in the intervention patients than usual care patients; modeling estimated that the intervention cost about $16,000/quality-adjusted life year.
Sharpe, 2014[22]	RCT *N* = 500	Three Scotland cancer centers	Integrated collaborative depression care	Primary care and oncologist clinic care	2	Depression treatment response (50% reduction in SCL-20) was achieved by 62% of intervention

Name, Year, ID	Study Design, Sample Size	Setting	What's the Intervention or What's Being Integrated	What Is It Being Integrated Into	Level of Collaboration/ Integration[a]	Outcomes Assessed
						patients and 17% of usual care patients, and intervention patients also had better outcomes on depression remission, anxiety, pain, fatigue, and several quality of life scale scores.
Walker, 2014[19]	RCT *N* = 142	Three Scotland cancer centers	Onsite or offsite one-on-one depression care delivered by nurses	Primary care and oncologist clinic care	2	Depression symptoms on the SCL-20 at 12 to 32 weeks improved more in intervention patients than usual care patients, as did measures of anxiety, perceived quality of care, and several scale scores on cancer QoL.
Walker, 2022[20] (based on Sharpe, 2014)	Mixed methods, post-only results *N* = 51 health professionals *N* = 32 patients	Oxford Cancer Center, part of the Oxford England hospitals	Offsite and onsite collaborative care for depression	Hospital-based cancer clinics, primary care	3	Patients and clinicians felt that screening for depression helped, that it was good to see a depression expert and good to have the program as part of cancer care, and that it relieved oncology clinicians of responsibility for managing depression.
Comanagement Program						
Davis, 2023[21]	Case series with pre/post measures *N* = 22	Academic, urban safety net hospital	Addiction-care team	Cardiology and (possibly) primary care	2	At the end of the 12-week program all patients were on guideline-recommended care, 3 had stopped using stimulants, acute care decreased 53% compared to pre-intervention use, and clinic no-show rate decreased.

Name, Year, ID	Study Design, Sample Size	Setting	What's the Intervention or What's Being Integrated	What Is It Being Integrated Into	Level of Collaboration/ Integration[a]	Outcomes Assessed
Miscellaneous						
Irwin, 2019[11]	Case series with pre/post measures *N* = 25	One academic medical center (MGH)	Collaborative care for SMI mental health	Oncology clinic	4	Improvements in 2 clinician assessments, the Brief Psychiatric Rating Scale and the Clinical Global Impression-Severity; no difference in 2 patient-reported measures, the patient health questionnaire and the Functional Assessment of Cancer Therapy-General.

Notes. [a]Levels of the CIHS Standard Framework for Levels of Integrated Healthcare.[5] Level 1: Minimal Collaboration; Level 2: Basic Collaboration at a Distance; Level 3: Basic Collaboration Onsite; Level 4: Close Collaboration Onsite with Some System Integration; Level 5: Close Collaboration Approaching an Integrated Practice; Level 6: Full Collaboration in a Transformed/Merged Integrated Practice.

Abbreviations. QoL=quality of life.

DISCUSSION

The key findings from this review are that: 1) there are no published studies relevant to VA of full collaboration in a transformed/integrated practice for integrating mental health into specialty clinics; 2) there are only 3 published studies of close collaboration approaching an integrated practice or close collaboration onsite with some system integration (in other words, anything greater than basic collaboration); the study most relevant to VA was a multicomponent intervention that in addition to psychosocial care included a multidisciplinary team of heart failure clinicians who provided advice on laboratory tests and medications. One of 3 sites where the intervention was implemented was VA. There were no statistically significant effects of the intervention on disease-specific quality of life, but symptoms of depression and anxiety were better in the intervention patients compared to usual care; 3) there is a larger number of studies of basic collaboration, the studies most relevant to VA (done in VA settings) had interventions based on TIDES, modified for specific diseases (liver disease and HIV). Both studies were randomized trials and both found improvements in intervention patients compared to usual care on depression outcomes.

Limitations

The limitations of any systematic review can be put into 2 categories: limitations in the source material and limitations of the review process. Limitations in the source material include: relatively few studies, in fact none relevant to VA of full collaboration; methodologic limitations of the included studies (about half the included studies were observational in design, and some of these were missing key data like sample size and valid comparison groups); almost all studies were focused on depression, thus there is even less known about other mental health disorders. Lastly, there is always the possibility that relevant studies were never found because they were never published, because they did not achieve the results their proponents had hoped to find. This publication bias is difficult to disprove, and if present would tend to make the overall results more positive than they actually are.

Limitations of the review process always include the possibility that we did not identify all relevant studies. For example, we did not search for collaborative care by condition, as such a search would have been prohibitively large, and therefore might have missed studies that enrolled patients by condition rather than clinic but whose non-mental health care was delivered by a relevant outpatient specialty clinic. We did search the 2 databases most likely to contain studies of this type, namely Medline and PsycInfo, and furthermore our yield was reviewed by several experts, none of whom identified important missing studies that met our inclusion criteria. Also, we did not use 2 reviewers for screening titles, we used the DistillerSR AI function as the second title screener. There is a chance that this might have overlooked some relevant studies with low predicted probability of being included, but we did some validity checks on this plus, as above, several experts who reviewed the yield did not identify any important missing studies. We also did not use 2 reviewers for data extraction; although data were checked for accuracy, there is always the possibility of data extraction errors. Lastly, we could not assess the certainty of evidence for each outcome by intervention, because there were too few studies of specific intervention outcomes to justify such an assessment.

FUTURE RESEARCH

Future research may wish to explore expanding out the successful TIDES model to other specialty clinics (only tested in HIV clinic and liver clinic to date); or the PCMHI model. Determining which specialty care clinics are most likely to benefit patients from mental health integration is also needed.

There is a need for research and evaluation of the integration of co-located collaborative care into outpatient specialty medical programs, since this is part of the required integrated care approach in primary care. Lastly, specialty providers may need targeted educational training on appropriate co-management of mental health conditions.

CONCLUSIONS

There is insufficient evidence from the published literature to guide how best to integrate mental health care into specialty care. In the VA setting, the intervention with the most evidence to support its beneficial effect is a specialty-clinic modification of TIDES.

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Appendix

SEARCH STRATEGIES

Search Date: 1/29/2024		Search Statement
MEDLINE **01/01/2014-01/29/2024**	1	Mental Health/ or exp Mental Health Services/ or Mental Disorders/ or Anxiety/ or exp Anxiety Disorders/ or Depression/ or exp Depressive Disorders/ or Psychiatrists/ or exp Psychiatry/ or Psychology/ or (mental health or behavio?ral health or ((mental or psychiatric) adj3 (diagnos* or disease* or disorder* or illness*)) or anxiet* or depress* or psychiatr* or psycholog*).ti,ab.
	2	Cardiology/ or Cardiologists/ or Cardiology Service, Hospital/ or Endocrinology/ or Endocrinologists/ or Gastroenterology/ or Gastroenterologists/ or Geriatrics/ or Geriatricians/ or Infectious Disease Medicine/ or exp Medical Oncology/ or Nephrology/ or Nephrologists/ or Neurology/ or Neurologists/ or Oncology Service, Hospital/ or Pulmonary Medicine/ or Pulmonologists/ or Sleep Medicine Specialty/ or Urology/ or Urologists/ or Urology Department, Hospital/ or (angiolog* or cardiolog* or endcrinolog* or gastroenterolog* or geriatr* or gerontolog* or hepatolog* or infectious disease or nephrolog* or neurolog* or oncolog* or pneumolog* or pneumonolog* or proctolog* or pulmonolog* or urolog* or ((cardiac or cardiovascular or metabolism or pulmonary or respiratory or sleep or vascular) adj3 (medicine or service* or special*)) or ((hiv or specialty) adj3 (care or clinic* or health* or setting* or service*))).ti,ab.
	3	Case Manager/ or Cooperative Behavior/ or Patient Care Team/ or (((care or case) adj1 manage*) or ((collaborat* or cooperat* or embed* or integrat* or interdisciplinary or multidisciplinary) adj5 (among* or approach* or between or care or department* or model* or polic* or procedur* or program* or service* or team* or unit* or within)) or co-locat* or colocat* or co-manag* or comanag* or shared care or patient care team* or active referral* or (warm adj1 (handoff* or hand-off* or handover* or hand-over* or signover* or sign-over*)) or ((mental or behavio?ral) adj3 (assessment* or inventor* or measure* or scale* or screen*)) or brief intervention*).ti,ab.
	4	and 1/3
	5	Case Manager/ or Cooperative Behavior/ or Patient Care Team/ or (((care or case) adj1 manage*) or ((collaborat* or cooperat* or embed* or integrat* or interdisciplinary or multidisciplinary) adj5 (among* or approach* or between or care or department* or model* or polic* or procedur* or program* or service* or team* or unit* or within)) or co-locat* or colocat* or co-manag* or comanag* or shared care or patient care team* or active referral* or (warm adj1 (handoff* or hand-off* or handover* or hand-over* or signover* or sign-over*)) or ((mental or behavio?ral) adj3 (assessment* or inventor* or measure* or scale* or screen*)) or brief intervention*).ti,ab.
	6	4 not 5
	7	limit 6 to last 10 years (limit 6 to yr="2014 -Current")
		Total **3677**

Search Date: 2/14/2024		Search Statement
PsycInfo **01/01/2014-02/14/2024**	1	Mental Health/ or exp Mental Health Services/ or Mental Disorders/ or exp Counseling/ or Anxiety/ or exp Anxiety Disorders/ or Depression/ or exp Affective Disorders/ or Psychiatrists/ or Psychologists/ or Psychotherapists/ or exp Psychiatry/ or Psychology/ or (mental health or behavio?ral health or ((mental or psychiatric) adj3 (diagnos* or disease* or disorder* or illness*)) or anxiet* or depress* or psychiatr* or psycholog*).ti,ab..
	2	Cardiology/ or Endocrinology/ or exp Geriatrics/ or Gerontology/ or exp Neurology/ or Neurologists/ or Oncology/ or (angiolog* or cardiolog* or endcrinolog* or gastroenterolog* or geriatr* or gerontolog* or hepatolog* or infectious disease or nephrolog* or neurolog* or oncolog* or pneumolog* or pneumonolog* or proctolog* or pulmonolog* or urolog* or ((cardiac or cardiovascular or metabolism or pulmonary or respiratory or sleep or vascular) adj3 (medicine or service* or special*)) or ((hiv or specialty) adj3 (care or clinic* or health* or setting* or service*))).ti,ab.
	3	Case Management/ or Integrative Services/ or Interdisciplinary Treatment Approach/ or (((care or case) adj1 manage*) or ((collaborat* or cooperat* or embed* or integrat* or interdisciplinary or multidisciplinary) adj5 (among* or approach* or between or care or department* or model* or polic* or procedur* or program* or service* or team* or unit* or within)) or co-locat* or colocat* or co-manag* or comanag* or shared care or patient care team* or active referral* or (warm adj1 (handoff* or hand-off* or handover* or hand-over* or signover* or sign-over*)) or ((mental or behavio?ral) adj3 (assessment* or inventor* or measure* or scale* or screen*)) or brief intervention*).ti,ab.
	4	and/1-3
	5	exp Pediatrics/ or exp Child Development/ or exp Adolescent Development/ or Child Psychiatry/ or Adolescent Psychiatry/ or Child Psychology/ or Adolescent Psychology/ or Puberty/ or (infant* or child* or stepchild* or step-child* or kid or kids or girl or girls or boy or boys or teen* or youth* or youngster* or adolescent* or adolescence or preschool* or pre-school* or kindergarten* or school* or juvenile* or minors or p?ediatric* or PICU).ti,ab.
	6	4 not 5
	7	Limit 7 to last 10 years ("2014 -Current")
		Total **1787**

STUDIES EXCLUDED DURING FULL-TEXT SCREENING

Citation	Exclude Reason
Beil, H., et al., Behavioral Health Integration With Primary Care: Implementation Experience and Impacts From the State Innovation Model Round 1 States. The Milbank quarterly, 2019. 97(2): p. 543-582.	Intervention is in Primary Care
Belsher, B.E., et al., Mental Health Utilization Patterns During a Stepped, Collaborative Care Effectiveness Trial for PTSD and Depression in the Military Health System. Medical care, 2016. 54(7): p. 706-13.	Intervention is in Primary Care
Bohnert, K.M., et al., Same-Day Integrated Mental Health Care and PTSD Diagnosis and Treatment Among VHA Primary Care Patients With Positive PTSD Screens. Psychiatric services (Washington, D.C.), 2016. 67(1): p. 94-100.	Intervention is in Primary Care
Cerimele, J.M., et al., Effectiveness of Collaborative Care and Colocated Specialty Care for Bipolar Disorder in Primary Care: A Secondary Analysis of a Randomized Clinical Trial. Journal of the Academy of Consultation-Liaison Psychiatry, 2023. 64(4): p. 349-356.	Intervention is in Primary Care
Fortney, J.C., et al., Comparison of Teleintegrated Care and Telereferral Care for Treating Complex Psychiatric Disorders in Primary Care: A Pragmatic Randomized Comparative Effectiveness Trial. JAMA psychiatry, 2021. 78(11): p. 1189-1199.	Intervention is in Primary Care
Funderburk, J.S., et al., Behavioral medicine interventions for adult primary care settings: A review. Families, systems & health : the journal of collaborative family healthcare, 2018. 36(3): p. 368-399.	Intervention is in Primary Care
Haderlein, T.P., et al., Association Between Virtual Care Use and Same-Day Primary Care Access in VA Primary Care-Mental Health Integration. Journal of primary care & community health, 2022. 13: p. 21501319221091430.	Intervention is in Primary Care
Haderlein, T.P., et al., Effects of Virtual Care and Same-Day Access to Integrated Care on Specialty Mental Health Engagement in the Veterans Health Administration. Journal of primary care & community health, 2023. 14: p. 21501319231159311.	Intervention is in Primary Care
Kirchner, J.E., et al., Outcomes of a partnered facilitation strategy to implement primary care-mental health. Journal of general internal medicine, 2014. 29 Suppl 4: p. 904-12.	Intervention is in Primary Care
Leung, L.B., et al., High Quality of Care Persists With Shifting Depression Services From VA Specialty to Integrated Primary Care. Medical care, 2019. 57(8): p. 654-658.	Intervention is in Primary Care
Leung, L.B., et al., Association of Veterans Affairs Primary Care Mental Health Integration With Care Access Among Men and Women Veterans. JAMA network open, 2020. 3(10): p. e2020955.	Intervention is in Primary Care
Leung, L.B., et al., Primary Care-Mental Health Integration in the VA: Shifting Mental Health Services for Common Mental Illnesses to Primary Care. Psychiatric services (Washington, D.C.), 2018. 69(4): p. 403-409.	Intervention is in Primary Care
Leung, L.B., et al., Changing Patterns of Mental Health Care Use: The Role of Integrated Mental Health Services in Veteran Affairs Primary Care. Journal of the American Board of Family Medicine : JABFM, 2018. 31(1): p. 38-48.	Intervention is in Primary Care
Possemato, K., et al., A Randomized Clinical Trial of Clinician-Supported PTSD Coach in VA Primary Care Patients. Journal of general internal medicine, 2023. 38(Suppl 3): p. 905-912.	Intervention is in Primary Care

Citation	Exclude Reason
Wolk, C.B., et al., Addressing Common Challenges in the Implementation of Collaborative Care for Mental Health: The Penn Integrated Care Program. Annals of family medicine, 2021. 19(2): p. 148-156.	Intervention is in Primary Care
Aburizik, A., et al., Responding to distress in cancer care: Increasing access to psycho oncology services through integrated collaborative care. Psycho-Oncology, 2023. 32(11): p. 1675-1683.	Does not Measure Patient Outcomes
Stelmokas, J., et al., Integration of neuropsychological assessment and intervention services into a specialty geriatric medicine clinic. Professional Psychology: Research and Practice, 2022. 53(5): p. 483-493.	Does not Measure Patient Outcomes
Marcotte, L.M., et al., Provision of Collaborative Care Model and General Behavioral Health Integration Services in Medicare. Psychiatric services (Washington, D.C.), 2021. 72(7): p. 822-825.	No Intervention
Puac-Polanco, V., et al., Treatment Differences in Primary and Specialty Settings in Veterans with Major Depression. Journal of the American Board of Family Medicine : JABFM, 2021. 34(2): p. 268-290.	No Intervention
Sadler, E., et al., Case management for integrated care of older people with frailty in community settings. The Cochrane database of systematic reviews, 2023. 5: p. CD013088.	Not Integrated Mental Health Care
Whitfield, J., et al., Remote Collaborative Care With Off-Site Behavioral Health Care Managers: A Systematic Review of Clinical Trials. Journal of the Academy of Consultation-Liaison Psychiatry, 2022. 63(1): p. 71-85.	Not Integrated Mental Health Care
Chen, S., et al., Integrated Care Pathways for Schizophrenia: A Scoping Review. Administration and policy in mental health, 2016. 43(5): p. 760-767.	Study Design (Scoping Review/Umbrella Review)
Rawlinson, C., et al., An Overview of Reviews on Interprofessional Collaboration in Primary Care: Barriers and Facilitators. International journal of integrated care, 2021. 21(2): p. 32.	Study Design (Scoping Review/Umbrella Review)

RISK OF BIAS ASSESSMENTS

RANDOMIZED CONTROLLED TRIALS (ROB-2)

Author Year	Random	Allocation Concealment	Blinding Participants	Blinding Outcome Assessment	Selective Reporting	Attrition
Kanwal, 2018[16]	Low risk	Unclear risk	High risk	High risk	Low risk	Low risk
Painter, 2015[17]; Pyne, 2011[18]	Low risk	Low risk	High risk	High risk	Low risk	Low risk
Carney, 2016[12]	Low risk	Low risk	High risk	High risk	Low risk	Low risk
Bekelman, 2018[9]	Low risk	Low risk	High risk	High risk	Low risk	Low risk
Huffman, 2014[14]	Low risk	Low risk	High risk	High risk	Low risk	Low risk
Strong, 2008[23]	Low risk	Low risk	High risk	High risk	Low risk	Low risk
Sharp, 2014[22]	Low risk	Low risk	High risk	High risk	Low risk	Low risk
Walker, 2014[19]	Low risk	Low risk	High risk	High risk	Low risk	Low risk

NONRANDOMIZED COMPARISON STUDIES (ROBINS-I)

Author Year	Bias Due to Confounding	Selection Bias	Bias in Classification of Interventions	Bias Due to Departures From Intended Interventions	Bias Due to Measurement of Outcomes	Bias Due to Missing Data	Bias in the Selection of Reported Results
Gillman, 2020[10]	Low	Unclear	Low	Low	Low	Unclear	Low
English, 2020[8]	High	High	Low	Unclear	Unclear	Unclear	Unclear
Flicek, 2022[13]	High	High	Low	Low	Low	High	Low
Walker, 2022[20]	High	Unclear	Low	Unclear	Unclear	Unclear	Low
Davis, 2023[21]	Unclear	High	Low	Unclear	Low	High	Low
Irwin, 2019[11]	Unclear	High	Low	Low	Low	Low	Low

PEER REVIEW COMMENTS AND RESPONSES

Comment #	Reviewer #	Comment	Author Response
Are the objectives, scope, and methods for this review clearly described?			
1	1	Yes	Thank you.
2	2	Yes	Thank you.
3	3	Yes	Thank you.
4	4	Yes	Thank you.
5	5	Yes	Thank you.
6	6	Yes	Thank you.
Is there any indication of bias in our synthesis of the evidence?			
7	1	Yes - Potential risk of bias: Use of Key Informants only from one VA site, which implements the approach to collaborative care management identified in the paper.	If there were potential knowledgeable key informants at sites other than the Operational Partner and GLA, we weren't aware of them. That may be our oversight.
8	2	No	Thank you.
9	3	No	Thank you.
10	4	No	Thank you.
11	5	No	Thank you.
12	6	No	Thank you.
Are there any published or unpublished studies that we may have overlooked?			
13	1	No	Thank you.
14	2	No	Thank you.
15	3	Yes - It is unclear if you accounted for all interventions that occurred across both primary and specialty care settings, including post-hospital discharge. Some studies may have been overlooked. For example, https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2783455 Here's another non-US study, https://jamanetwork.com/journals/jama/fullarticle/2769466	This article was not identified in our search according to the ESP CC research librarian because "it did not include any of our terms from line 2", those being the clinics VA specified as being of interest. Indeed, this article was not indexed for any type of specialty clinic, rather it was indexed by a condition

Comment #	Reviewer #	Comment	Author Response
			- heart failure. To have captured this we would have needed to search for studies by included condition. We have added as a limitation that we may have missed some studies by not searching on condition, but a search on conditions, meaning all conditions like heart failure, HIV, diabetes, liver disease etc. etc. just to see if some targeted condition also was specific to one of our clinics of interest would likely have been prohibitively large. And its not clear to me this study should be included - patients were not identified from the specialty clinic (they were inpatients) and as opposed to the included article by Bekelman which is also about heart failure and depression this study by Rollman makes no mention about any cardiology clinic care for these patients, while in the study by Bekelman it is reported that 77% of patients were seen by a cardiologist. Thus we feel the study by Bekelman does qualify as a study of mental health care and cardiology clinic care, while the study by Rollman does not. Studies from LMIC were excluded due to the belief that context is important both in intervention design but also effectiveness. This has been made more clear in the Methods.
16	4	No	Thank you.

Comment #	Reviewer #	Comment	Author Response
17	5	No	Thank you.
18	6	No	Thank you.
Additional suggestions or comments can be provided below.			
19	1	Under "Future Research," in addition to Collaborative Care Management, please also consider commenting on the need for research and evaluation of the integration of Co-located Collaborative Care into outpatient specialty medical programs given this is part of the required integrated care approach (in primary care) used within VHA and of interest to the operational partners.	We have added this to the Future Research section.
20	2		
21	3	The Evidence Synthesis Program responded to the VHA Office of Mental Health and provided a strong review of recently published studies of mental health integration into outpatient specialty care. I propose two points for further clarification. First, the review appears to narrowly focus on integrated care interventions that occur in specialty care settings. This is critique re: “Population: Adult patients in outpatient specialty medical care settings (oncology, neurology, sleep, infectious disease, cardiology, pulmonary, endocrinology, urology, hepatology, nephrology, and geriatric care) with co-occurring mental or behavioral health conditions/symptoms.” This leaves readers wondering about collaborative care programs and related interventions that recruit patients with comorbid physical and mental health conditions without distinction across primary and specialty care setting. The review may be missing some interventions that occur across both primary and specialty care settings, including post-hospital discharge. A search for collaborative care or integrated care to treat co-occurring physical and mental health conditions will likely have much higher yield. Second, while Level 1 & 2 integration interventions were strategically excluded, could the authors comment in the Discussion on how the results may differ if these were not excluded? It would be nice understand how many of the 6253 studies excluded were excluded due to being Level 1 & 2 Integration. It is worth noting that few systems have achieved Level 6 integration, even within primary care. Excluded Level 1 & 2 integration studies may likely be of higher scientific quality as well. Given the small number of studies meeting eligibility criteria (Level 3+), I wonder if more useful information would have been derived by including Level 1 & 2 studies to attempt at addressing the first study limitation: “Limitations in the source material include: relatively few studies, in fact none relevant to VA of full collaboration.” If addressing	These are valid points but would have required an expanded, scope, which is not something we can change at this point. It raises the same point as above: is the target here people with a condition, irrespective of enrolment in a particular primary care or specialty clinic, or is the target people attending certain specialty clinics? Our charge was the latter, but the former is also a worthy subject.

Comment #	Reviewer #	Comment	Author Response
		this limitation is outside of the study scope, then at least some Discussion is warranted. Minor point: While I do not necessarily disagree this statement ("most experienced systematic review experts in the world"), perhaps it can be tempered as "an experienced systematic review expert with XX number of years of experience"?	The coordinating center review wanted this sentence entirely eliminated so the comment is moot.
22	4	Review appears thorough and comprehensive. The report would benefit from an explanation of what the TIDES model is, what PC-MHI means, where it fits into the CIHS levels of care, and would it would mean to offer transformed/integrated practice. I think it would be helpful to include a schematic or adaptation of the CIHS six levels of integration framework into the report so that readers have the same mental map.	We have added more text about TIDES. These have been added to the revised version.
23	5	Given that pain clinics often have pain psychologists embedded in the clinic, I am curious why pain clinics were not part of the search terms. Since one of the included studies was in a pain clinic, clearly this was not an exclusion. The authors may want to consider in the discussion doing a separate review of the role of behavioral health in pain clinical settings. I do however recognize that goes beyond the scope of this review.	"Pain clinics" weren't an exclusion in the review but neither were they identified as an outpatient specialty medical clinic of particular importance (as were oncology, neurology, sleep, infectious disease, etc.) and thus we did not include pain clinic as a specific search term. So this might have resulted in the search not finding some relevant pain clinic studies.
24	6	In the "key findings," recommend adding the word "medical" between specialty and care at the end of the first bullet point (page 8, line 7) - this may help with clarity for readers. Consider including this specifier throughout the paper, as appropriate. Page 8, line 17, clarify what is being considered a "major" MH diagnosis (or remove the word major to leave this statement broad.	This change was made. We made the change in the Key findings but don't think we can make the change throughout since one of the identified clinics of interest (Urology) is a surgical specialty clinic and not a medical specialty clinic.

Comment #	Reviewer #	Comment	Author Response
		Page 8, line 22, VA is not only considering initiating efforts but has already begun (via small scale demonstration projects in pain management and oncology). Recommend removing the word considering.	This phrase “major mental health diagnosis” is pulled directly from the source, which didn’t specify it further. But in the reference cited for that statement, there is a statement that almost half of high utilizers had a mental health diagnosis, again without further definition. I think to be safe we should just get rid of the “major” part of this. This change was made.