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# Integrated Mental and Behavioral Health Care

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September 2024

**VA**



**U.S. Department of Veterans Affairs**

Veterans Health Administration  
*Health Systems Research*

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# *Appendix*

## SEARCH STRATEGIES

Search Date: 1/29/2024	Search Statement
<b>MEDLINE</b>	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 behavior?ral health or ((mental or psychiatric) adj3 (diagnos* or disease* or disorder* or illness*)) or anxiet* or depress* or psychiatr* or psycholog*).ti,ab.
<b>01/01/2014-01/29/2024</b>	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 endocrinolog* 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 behavior?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 behavior?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")
	<b>Total 3677</b>

Search Date: 2/14/2024	Search Statement
<p><b>PsycInfo</b>  01/01/2014-02/14/2024</p>	<p>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 behavior?ral health or ((mental or psychiatric) adj3 (diagnos* or disease* or disorder* or illness*)) or anxiet* or depress* or psychiatr* or psycholog*).ti,ab..</p>
	<p>2 Cardiology/ or Endocrinology/ or exp Geriatrics/ or Gerontology/ or exp Neurology/ or Neurologists/ or Oncology/ or (angiolog* or cardiolog* or endocrinolog* 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.</p>
	<p>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 behavior?ral) adj3 (assessment* or inventor* or measure* or scale* or screen*)) or brief intervention*).ti,ab.</p>
	<p>4 and/1-3</p>
	<p>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.</p>
	<p>6 4 not 5</p>
	<p>7 Limit 7 to last 10 years ("2014 -Current")</p>
<p><b>Total</b>     <b>1787</b></p>	



## 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. <i>The Milbank quarterly</i> , 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. <i>Medical care</i> , 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. <i>Psychiatric services (Washington, D.C.)</i> , 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. <i>Journal of the Academy of Consultation-Liaison Psychiatry</i> , 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. <i>JAMA psychiatry</i> , 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. <i>Families, systems &amp; health : the journal of collaborative family healthcare</i> , 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. <i>Journal of primary care &amp; community health</i> , 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. <i>Journal of primary care &amp; community health</i> , 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. <i>Journal of general internal medicine</i> , 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. <i>Medical care</i> , 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. <i>JAMA network open</i> , 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. <i>Psychiatric services (Washington, D.C.)</i> , 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. <i>Journal of the American Board of Family Medicine : JABFM</i> , 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. <i>Journal of general internal medicine</i> , 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. <i>Annals of family medicine</i> , 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. <i>Psycho-Oncology</i> , 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. <i>Professional Psychology: Research and Practice</i> , 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. <i>Psychiatric services (Washington, D.C.)</i> , 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. <i>Journal of the American Board of Family Medicine : JABFM</i> , 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. <i>The Cochrane database of systematic reviews</i> , 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. <i>Journal of the Academy of Consultation-Liaison Psychiatry</i> , 2022. 63(1): p. 71-85.	Not Integrated Mental Health Care
Chen, S., et al., Integrated Care Pathways for Schizophrenia: A Scoping Review. <i>Administration and policy in mental health</i> , 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. <i>International journal of integrated care</i> , 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 <sup>16</sup>	Low risk	Unclear risk	High risk	High risk	Low risk	Low risk
Painter, 2015 <sup>17</sup> ; Pyne, 2011 <sup>18</sup>	Low risk	Low risk	High risk	High risk	Low risk	Low risk
Carney, 2016 <sup>12</sup>	Low risk	Low risk	High risk	High risk	Low risk	Low risk
Bekelman, 2018 <sup>9</sup>	Low risk	Low risk	High risk	High risk	Low risk	Low risk
Huffman, 2014 <sup>14</sup>	Low risk	Low risk	High risk	High risk	Low risk	Low risk
Strong, 2008 <sup>23</sup>	Low risk	Low risk	High risk	High risk	Low risk	Low risk
Sharp, 2014 <sup>22</sup>	Low risk	Low risk	High risk	High risk	Low risk	Low risk
Walker, 2014 <sup>19</sup>	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 <sup>10</sup>	Low	Unclear	Low	Low	Low	Unclear	Low
English, 2020 <sup>8</sup>	High	High	Low	Unclear	Unclear	Unclear	Unclear
Flicek, 2022 <sup>13</sup>	High	High	Low	Low	Low	High	Low
Walker, 2022 <sup>20</sup>	High	Unclear	Low	Unclear	Unclear	Unclear	Low
Davis, 2023 <sup>21</sup>	Unclear	High	Low	Unclear	Low	High	Low
Irwin, 2019 <sup>11</sup>	Unclear	High	Low	Low	Low	Low	Low





## PEER REVIEW COMMENTS AND RESPONSES

Comment #	Reviewer #	Comment	Author Response
<i>Are the objectives, scope, and methods for this review clearly described?</i>			
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.
<i>Is there any indication of bias in our synthesis of the evidence?</i>			
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.
<i>Are there any published or unpublished studies that we may have overlooked?</i>			
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, <a href="https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2783455">https://jamanetwork.com/journals/jamainternalmedicine/fullarticle/2783455</a> Here's another non-US study, <a href="https://jamanetwork.com/journals/jama/fullarticle/2769466">https://jamanetwork.com/journals/jama/fullarticle/2769466</a>	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
16	4	No	<p>- 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</p> <p>- 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.</p> <p>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.</p> <p>Thank you.</p>



Comment #	Reviewer #	Comment	Author Response
17	5	No	Thank you.
18	6	No	Thank you.
<i>Additional suggestions or comments can be provided below.</i>			
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	<p>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.</p> <p>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.</p> <p>Second, while Level 1 &amp; 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 &amp; 2 Integration. It is worth noting that few systems have achieved Level 6 integration, even within primary care. Excluded Level 1 &amp; 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 &amp; 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</p>	<p>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.</p>



Comment #	Reviewer #	Comment	Author Response
		<p>this limitation is outside of the study scope, then at least some Discussion is warranted.</p> <p>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”?</p>	<p>The coordinating center review wanted this sentence entirely eliminated so the comment is moot.</p>
22	4	<p>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.</p>	<p>We have added more text about TIDES. These have been added to the revised version.</p>
23	5	<p>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.</p>	<p>“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.</p>
24	6	<p>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.</p> <p>Page 8, line 17, clarify what is being considered a "major" MH diagnosis (or remove the word major to leave this statement broad.</p>	<p>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.</p>

Comment #	Reviewer #	Comment	Author Response
		<p>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.</p>	<p>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.</p> <p>This change was made.</p>

