

Supplementary Online Content

Yonek J, Lee C-M, Harrison A, Mangurian C, Tolou-Shams M. Key components of effective pediatric integrated mental health care models: a systematic review. *JAMA Pediatr*. Published March 9, 2020. doi:10.1001/jamapediatrics.2020.0023

eTable 1. PubMed Search Strategy

eTable 2. Study Quality Assessment (Jadad Score)

eFigure 1. Six Levels of Collaboration/Integration (Core Descriptions)

eFigure 2. PRISMA Flow Diagram of Study Selection

eReferences

This supplementary material has been provided by the authors to give readers additional information about their work.

eTable 1. PubMed Search Strategy

| Term Categories | Search Terms | Results |
|------------------------------|--|----------------|
| Population Filter | Search "Adolescent"[Mesh] OR "Child"[Mesh] OR adolescen*[tiab] OR child*[tiab] | 2810447 |
| Mental Disorders in Children | Search "Mental Disorders Diagnosed in Childhood"[MeSH] OR "Mood Disorders"[MeSH] OR "Anxiety Disorders"[MeSH] OR depress*[tiab] OR anxiety*[tiab] OR "Attention Deficit Disorder with Hyperactivity" OR "attention deficit/hyperactivity"[tiab] OR "attention deficit hyperactivity" OR ADHD[tiab] OR conduct disorder*[tiab] OR "child psychiatry"[MeSH] | 627844 |
| Primary Care Setting | Search "Primary Health Care"[Mesh] OR "Physicians, Primary Care"[Mesh] OR "primary care"[tiab] OR "Internal Medicine"[Mesh] OR "internal medicine"[tiab] OR "General Practice"[Mesh] OR "general practice"[tiab] OR "General Practitioners"[Mesh] OR general practitioner*[tiab] OR "Family Practice"[Mesh] OR "family practice"[tiab] OR family practitioner*[tiab] OR "Pediatrics"[Mesh] OR pediatric*[tiab] OR "Pediatric Nursing"[Mesh] | 512163 |
| Integrated Care | Search "Delivery of Health Care, Integrated"[MeSH] OR integrate[tiab] OR integrated[tiab] OR integration[tiab] OR integrates[tiab] OR "Cooperative Behavior"[Mesh] OR "Combined Modality Therapy"[Mesh:NoExp] OR "Case management"[MeSH] OR case manage*[tiab] OR care manage*[tiab] OR "Disease Management"[Mesh:noexp] OR disease manage*[tiab] OR "Referral and Consultation"[Mesh] OR consult*[tiab] OR "Videoconferencing"[Mesh] OR videoconference*[tiab] OR "Telemedicine"[Mesh] OR telemedicine[tiab] OR telehealth[tiab] OR "Shared care"[tiab] OR "Collaborative care"[tiab] OR "Collaborative-care"[tiab] OR Collaborative manage*[tiab] OR Co-locat*[tiab] OR Co-manage*[tiab] | 633926 |

eTable 2. Study Quality Assessment (Jadad Score)

| | Asarnow et al., 2009 ¹ | Clarke et al., 2005 ² | Richardson et al., 2014 ³ | Epstein, et al., 2007 ⁴ | Kolko et al., 2010 ⁵ | Kolko et al., 2014 ⁶ | Lavigne et al., 2008 ⁷ | Myers et al., 2015 ⁸ | Perrin et al., 2014 ⁹ | Schilling et al., 2016 ¹⁰ | Silverstein et al., 2015 ¹¹ |
|--|-----------------------------------|----------------------------------|--------------------------------------|------------------------------------|---------------------------------|---------------------------------|-----------------------------------|---------------------------------|----------------------------------|--------------------------------------|--|
| Randomization | | | | | | | | | | | |
| Was the study described as randomized? (yes=1; no=0) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Was the method to generate the sequence of randomization described and was it appropriate? (yes=1; no=0) | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Blinding | | | | | | | | | | | |
| Was the study described as double-blind? (yes=1; no=0) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Was the method of double-blinding described and was it appropriate? (yes=1; no=0) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Withdrawals and Dropouts | | | | | | | | | | | |
| Were the number and reasons for withdrawal in each study condition stated? (yes=1; no=0) | 1 | 1 | 0 | 0 | 0 | 1 | 0 | ? | 1 | 1 | 1 |
| Total Points (0-5) | 3 | 3 | 2 | 2 | 2 | 3 | 2 | 2 | 3 | 3 | 3 |

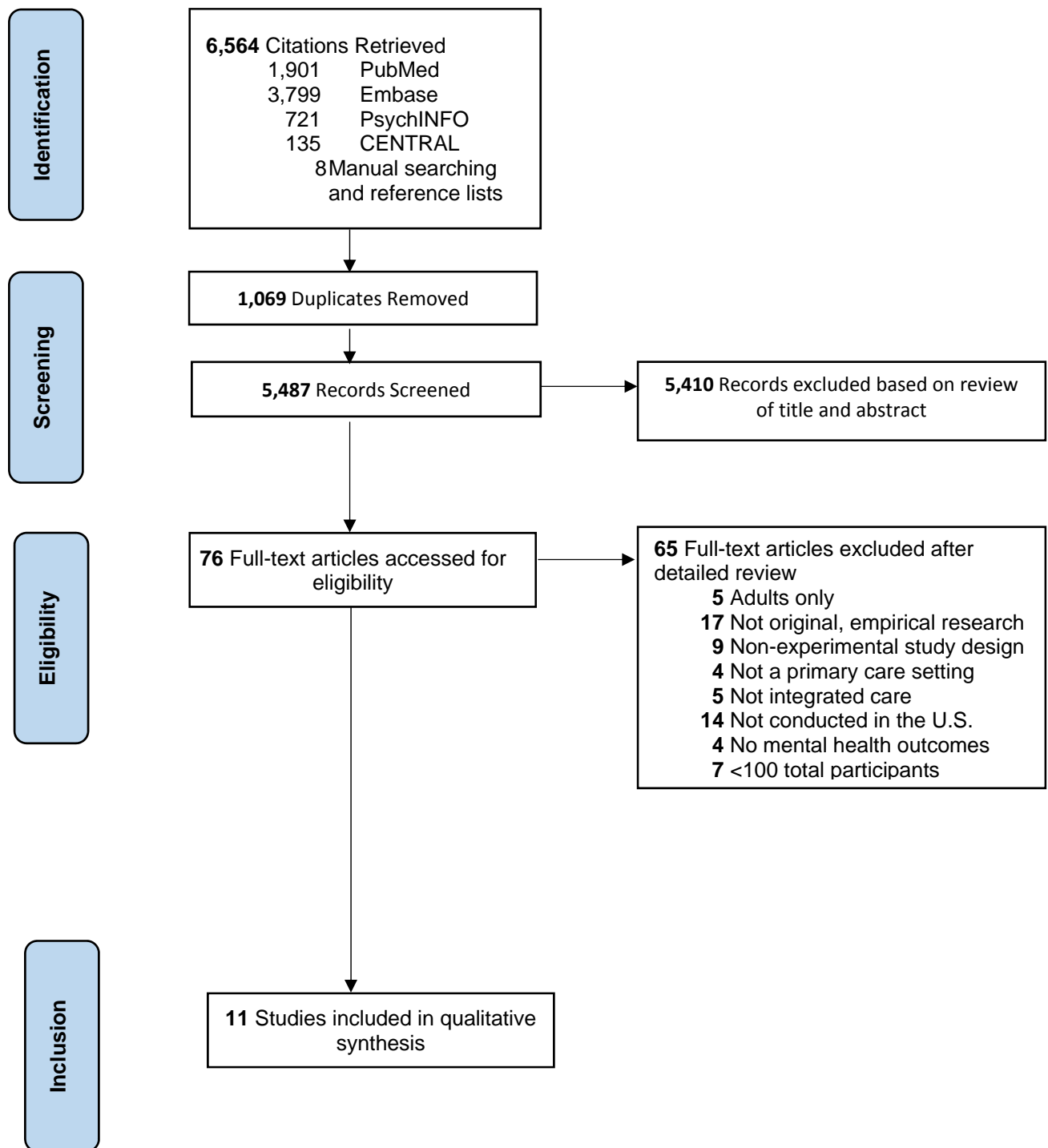
The Jadad score ranges from 0 to 5 points. Higher scores indicate higher quality.^{12,13}

eFigure 1. Six Levels of Collaboration/Integration (Core Descriptions)

| COORDINATED KEY ELEMENT: COMMUNICATION | | CO-LOCATED KEY ELEMENT: PHYSICAL PROXIMITY | | INTEGRATED KEY ELEMENT: PRACTICE CHANGE | |
|---|---|---|---|--|--|
| 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 |
| Behavioral health, primary care and other healthcare providers work: | | | | | |
| In separate facilities, where they: | In separate facilities, where they: | In same facility not necessarily same offices, where they: | In same space within the same facility, where they: | In same space within the same facility (some shared space), where they: | In same space within the same facility, sharing all practice space, where they: |
| <ul style="list-style-type: none"> » Have separate systems » Communicate about cases only rarely and under compelling circumstances » Communicate, driven by provider need » May never meet in person » Have limited understanding of each other's roles | <ul style="list-style-type: none"> » Have separate systems » Communicate periodically about shared patients » Communicate, driven by specific patient issues » May meet as part of larger community » Appreciate each other's roles as resources | <ul style="list-style-type: none"> » Have separate systems » Communicate regularly about shared patients, by phone or e-mail » Collaborate, driven by need for each other's services and more reliable referral » Meet occasionally to discuss cases due to close proximity » Feel part of a larger yet ill-defined team | <ul style="list-style-type: none"> » Share some systems, like scheduling or medical records » Communicate in person as needed » Collaborate, driven by need for consultation and coordinated plans for difficult patients » Have regular face-to-face interactions about some patients » Have a basic understanding of roles and culture | <ul style="list-style-type: none"> » Actively seek system solutions together or develop work-a-rounds » Communicate frequently in person » Collaborate, driven by desire to be a member of the care team » Have regular team meetings to discuss overall patient care and specific patient issues » Have an in-depth understanding of roles and culture | <ul style="list-style-type: none"> » Have resolved most or all system issues, functioning as one integrated system » Communicate consistently at the system, team and individual levels » Collaborate, driven by shared concept of team care » Have formal and informal meetings to support integrated model of care » Have roles and cultures that blur or blend |

Source: Heath B, Wise Romero P, and Reynolds K. *A Review and Proposed Standard Framework for Levels of Integrated Healthcare*. Washington, DC: SAMHSA-HRSA Center for Integrated Health Solutions; March 2013. Accessed from: www.integration.samhsa.gov/resource/standard-framework-for-levels-of-integrated-healthcare

eFigure 2. PRISMA Flow Diagram of Study Selection



eReferences

1. Asarnow, J. R., Jaycox, L. H., Tang, L., Duan, N., LaBorde, A. P., Zeledon, L. R., ... Wells, K. B. (2009). Long-term benefits of short-term quality improvement interventions for depressed youths in primary care. *Am J Psychiatry*, *166*(9), 1002–1010. doi:10.1176/appi.ajp.2009.08121909
2. Clarke, G., Debar, L., Lynch, F., Powell, J., Gale, J., O'Connor, E., ... Hertert, S. (2005). A randomized effectiveness trial of brief cognitive-behavioral therapy for depressed adolescents receiving antidepressant medication. *J Am Acad Child Adolesc Psychiatry*, *44*(9), 888–898. doi:10.1016/S08980-8567(09)62194-8
3. Richardson, L. P., Ludman, E., McCauley, E., Lindenbaum, J., Larison, C., Zhou, C., ... Katon, W. (2014). Collaborative care for adolescents with depression in primary care: a randomized clinical trial. *Jama*, *312*(8), 809–816. doi:10.1001/jama.2014.9259
4. Epstein, J. N., Rabiner, D., Johnson, D. E., Fitzgerald, D. P., Chrisman, A., Erkanli, A., ... Conners, C. K. (2007). Improving attention-deficit/hyperactivity disorder treatment outcomes through use of a collaborative consultation treatment service by community-based pediatricians: a cluster randomized trial. *Arch Pediatr Adolesc Med*, *161*(9), 835–840. doi:10.1001/archpedi.161.9.835
5. Kolko, D. J., Campo, J., Kilbourne, A. M., Hart, J., Sakolsky, D., & Wisniewski, S. (2014). Collaborative care outcomes for pediatric behavioral health problems: a cluster randomized trial. *Pediatrics*, *133*(4), e981-92. doi:10.1542/peds.2013-2516
6. Kolko, D. J., Campo, J. V., Kelleher, K., & Cheng, Y. (2010). Improving access to care and clinical outcome for pediatric behavioral problems: a randomized trial of a nurse-administered intervention in primary care. *J Dev Behav Pediatr*, *31*(5), 393–404. doi:10.1097/DBP.0b013e3181dff307
7. Lavigne, J. V., Lebaillly, S. A., Gouze, K. R., Cicchetti, C., Pochyly, J., Arend, R., ... Binns, H. J. (2008). Treating oppositional defiant disorder in primary care: a comparison of three models. *J Pediatr Psychol*, *33*(5), 449–461. doi:10.1093/jpepsy/jsm074
8. Myers, K., Vander Stoep, A., Zhou, C., McCarty, C. A., & Katon, W. (2015). Effectiveness of a telehealth service delivery model for treating attention-deficit/hyperactivity disorder: a community-based randomized controlled trial. *J Am Acad Child Adolesc Psychiatry*, *54*(4), 263–274. doi:10.1016/j.jaac.2015.01.009
9. Perrin, E. C., Sheldrick, R. C., McMenemy, J. M., Henson, B. S., & Carter, A. S. (2014). Improving parenting skills for families of young children in pediatric settings: a randomized clinical trial. *JAMA Pediatr*, *168*(1), 16–24. doi:10.1001/jamapediatrics.2013.2919
10. Schilling, S., French, B., Berkowitz, S. J., Dougherty, S. L., Scribano, P. V., & Wood, J. N. (2017). Child-Adult Relationship Enhancement in Primary Care (PriCARE): A Randomized Trial of a Parent Training for Child Behavior Problems. *Acad Pediatr*, *17*(1), 53–60. doi:10.1016/j.acap.2016.06.009
11. Silverstein, M., Hironaka, L. K., Walter, H. J., Feinberg, E., Sandler, J., Pellicer, M., ... Cabral, H. (2015). Collaborative care for children with ADHD symptoms: a randomized

comparative effectiveness trial. *Pediatrics*, 135(4), e858-67. doi:10.1542/peds.2014-3221

12. Halpern SH, Douglas MJ, eds. Appendix: Jadad scale for reporting randomized controlled trials. In: *Evidence-Based Obstetric Anesthesia*. Hoboken, NJ: Blackwell Publishing Ltd; 2007:237-238. doi:10.1002/9780470988343.app1
13. Jadad AR, Moore RA, Carroll D, et al. Assessing the quality of reports of randomized clinical trials: is blinding necessary? *Control Clin Trials*. 1996;17(1):1-12. <http://www.ncbi.nlm.nih.gov/pubmed/8721797>.
14. Heath B, Wise Romero P, Reynolds KA. *A Review and Proposed Standard Framework for Levels of Integrated Healthcare*. Washington, DC: SAMHSA-HRSA Center for Integrated Health Solutions; March 2013. <https://www.integration.samhsa.gov/resource/standard-framework-for-levels-of-integrated-healthcare>