
Evidence Brief: Video Telehealth for Primary Care and Mental Health Services

Supplemental Materials

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U.S. Department of Veterans Affairs

Veterans Health Administration
Health Services Research & Development Service

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APPENDIX A. SEARCH STRATEGIES

1. Database Searching Date Searched: 10/10/18	
Source:	Strategy:
MEDLINE	<p>Database: Ovid MEDLINE(R) and Epub Ahead of Print, In-Process & Other Non-Indexed Citations, Daily and Versions(R) <1946 to October 09, 2018> Search Strategy:</p> <p>-----</p> <ol style="list-style-type: none"> 1 exp Veterans/ (14447) 2 exp Hospitals, Veterans/ (6405) 3 exp Hospitals, Veterans/ (6405) 4 exp Veterans Health/ (1002) 5 exp "United States Department of Veterans Affairs"/ (7130) 6 veteran*.mp. (37614) 7 exp Iraq War, 2003-2011/ (2744) 8 exp Afghan Campaign 2001-/ (2520) 9 (Operation Enduring Freedom or Operation New Dawn or Operation Iraqi Freedom).mp. (1106) 10 or/1-9 (40152) 11 exp Telemedicine/ (23556) 12 (telehealth or telemedicine).mp. (23306) 13 exp Patient Care/ (874952) 14 exp Therapeutics/ (4218351) 15 exp Health Services/ (1959980) 16 exp Diagnosis/ (7970144) 17 exp Professional-Patient Relations/ (135317) 18 exp Health Services Accessibility/ (101459) 19 exp Health Behavior/ (285993) 20 or/11-19 (11219262) 21 exp *Telecommunications/ (53000) 22 exp *Computer Communication Networks/ (47727) 23 21 or 22 (96451) 24 20 and 23 (55212) 25 11 or 12 or 24 (61744) 26 10 and 25 (761) 27 limit 26 to english language (759) <p>*****</p>
Cochrane Database of Systematic Reviews	<p>Database: EBM Reviews - Cochrane Database of Systematic Reviews <2005 to October 03, 2018> Search Strategy:</p> <p>-----</p> <ol style="list-style-type: none"> 1 veteran*.mp. (202) 2 (telemedic\$ or telehealth\$ or teleradiol\$ or teledermat\$).mp. (122) 3 (tele-medic\$ or tele-heal\$ or tele-radiol\$ or tele-dermat\$).mp. (33) 4 (emedicine or ehealth or e-medicine or e-health).mp. (89) 5 2 or 3 or 4 (153) 6 1 and 5 (12) <p>*****</p>
PsycINFO	<p>Database: PsycINFO <1806 to October Week 1 2018> Search Strategy:</p> <p>-----</p>

	<ol style="list-style-type: none"> 1 exp Veterans/ (11819) 2 exp Hospitals, Veterans/ (0) 3 exp Hospitals, Veterans/ (0) 4 exp Veterans Health/ (0) 5 exp "United States Department of Veterans Affairs"/ (0) 6 veteran*.mp. (20867) 7 exp Iraq War, 2003-2011/ (0) 8 exp Afghan Campaign 2001-/ (0) 9 (Operation Enduring Freedom or Operation New Dawn or Operation Iraqi Freedom).mp. (853) 10 or/1-9 (21103) 11 exp Telemedicine/ (4502) 12 (telehealth or telemedicine).mp. (5023) 13 exp Patient Care/ (769) 14 exp Therapeutics/ (0) 15 exp Health Services/ (0) 16 exp Diagnosis/ (166361) 17 exp Professional-Patient Relations/ (0) 18 exp Health Services Accessibility/ (0) 19 exp Health Behavior/ (26888) 20 or/11-19 (198183) 21 exp *Telecommunications/ (13281) 22 exp *Computer Communication Networks/ (0) 23 21 or 22 (13281) 24 20 and 23 (582) 25 11 or 12 or 24 (5287) 26 10 and 25 (279) 27 limit 26 to english language (278) <p style="text-align: center;">*****</p>
<p>CCRCT</p>	<p>Database: EBM Reviews - Cochrane Central Register of Controlled Trials <September 2018> Search Strategy: -----</p> <ol style="list-style-type: none"> 1 exp Veterans/ (799) 2 exp Hospitals, Veterans/ (284) 3 exp Hospitals, Veterans/ (284) 4 exp Veterans Health/ (30) 5 exp "United States Department of Veterans Affairs"/ (274) 6 veteran*.mp. (4541) 7 exp Iraq War, 2003-2011/ (67) 8 exp Afghan Campaign 2001-/ (66) 9 (Operation Enduring Freedom or Operation New Dawn or Operation Iraqi Freedom).mp. (90) 10 or/1-9 (4577) 11 exp Telemedicine/ (1870) 12 (telehealth or telemedicine).mp. (3104) 13 exp Patient Care/ (37952) 14 exp Therapeutics/ (272564) 15 exp Health Services/ (81627) 16 exp Diagnosis/ (305134) 17 exp Professional-Patient Relations/ (2396) 18 exp Health Services Accessibility/ (870) 19 exp Health Behavior/ (14521) 20 or/11-19 (433838) 21 exp *Telecommunications/ (1352)



	<p>22 exp *Computer Communication Networks/ (0) 23 21 or 22 (1352) 24 20 and 23 (1306) 25 11 or 12 or 24 (3573) 26 10 and 25 (215) 27 limit 26 to english language (153)</p> <p>*****</p>
<p>HTA: Health Technology Assessments</p>	<p>Database: EBM Reviews - Health Technology Assessment <4th Quarter 2016> Search Strategy: ----- 1 exp Veterans/ (3) 2 exp Hospitals, Veterans/ (0) 3 exp Hospitals, Veterans/ (0) 4 exp Veterans Health/ (0) 5 exp "United States Department of Veterans Affairs"/ (3) 6 veteran*.mp. (24) 7 exp Iraq War, 2003-2011/ (0) 8 exp Afghan Campaign 2001-/ (0) 9 (Operation Enduring Freedom or Operation New Dawn or Operation Iraqi Freedom).mp. (0) 10 or/1-9 (24) 11 exp Telemedicine/ (124) 12 (telehealth or telemedicine).mp. (120) 13 exp Patient Care/ (449) 14 exp Therapeutics/ (3246) 15 exp Health Services/ (1874) 16 exp Diagnosis/ (3483) 17 exp Professional-Patient Relations/ (33) 18 exp Health Services Accessibility/ (36) 19 exp Health Behavior/ (56) 20 or/11-19 (6725) 21 exp *Telecommunications/ (0) 22 exp *Computer Communication Networks/ (0) 23 21 or 22 (0) 24 20 and 23 (0) 25 11 or 12 or 24 (132) 26 10 and 25 (1) 27 limit 26 to english language (1)</p> <p>*****</p>
<p>NICE (NHS Evidence)</p>	<p>Search: (telehealth or telecare or telemedicine or eHealth) and veteran</p>
<p>NLM</p>	<p>Search: (telehealth or telecare or telemedicine or eHealth) and veteran</p>

<p>2. Systematic reviews currently under development Date Searched: 10/10/18</p>	
<p>Source:</p>	<p>Strategy:</p>
<p>PROSPERO</p>	<p>Search: (telehealth or telecare or telemedicine or eHealth) and veteran</p>

3. Current Guidelines



Date Searched: 10/10/18	
Source:	Strategy:
VA/DoD Clinical Practice Guidelines	N/A
Guideline Central	Search: telehealth or telecare or telemedicine or eHealth

4. Grey Literature	
Date Searched: 10/10/18	
Source:	Strategy:
AHRQ	Search: (telehealth or telecare or telemedicine or eHealth) and veteran
CADTH	Search: (telehealth or telecare or telemedicine or eHealth) and veteran
ECRI Institute	Search: (telehealth or telecare or telemedicine or eHealth) and veteran
VA Products: VATAP, PBM, HSR&D publications, VA ART Database	A. http://www.hsr.d.research.va.gov/research/default.cfm B. http://www.research.va.gov/research_topics/ C. http://art.puget-sound.med.va.gov/default.cfm Search: telehealth; telecare; telemedicine; eHealth
American Telemedicine Association	Search: telehealth; telecare; telemedicine; eHealth
United States Department of Health & Human Services	Search: telehealth; telecare; telemedicine; eHealth
Healthcare Information and Management Systems Society (HIMSS)	Search: telehealth; telecare; telemedicine; eHealth
United States Office of the Assistant Secretary for Planning and Evaluation (ASPE)	Search: telehealth; telecare; telemedicine; eHealth
Personal Connected Health Alliance	Search: telehealth; telecare; telemedicine; eHealth
Centers for Medicare & Medicaid Services (CMS)	Search: telehealth; telecare; telemedicine; eHealth

The Office of the National Coordinator for Health Information Technology	Search: telehealth; telecare; telemedicine; eHealth
Wireless-Life Sciences Alliance	Search: telehealth; telecare; telemedicine; eHealth
United States Health Resources and Services Administration	Search: telehealth; telecare; telemedicine; eHealth
National Institute of Standards and Technology	Search: telehealth; telecare; telemedicine; eHealth
Markle Foundation	Search: telehealth; telecare; telemedicine; eHealth
National Center for Telehealth and Technology (T2)	Search: telehealth; telecare; telemedicine; eHealth
New York Academy of Medicine Library of Grey Literature	Search: telehealth; telecare; telemedicine; eHealth
California Healthcare Foundation	Search: telehealth; telecare; telemedicine; eHealth

5. Primary literature currently under development

Date Searched: 10/10/18

Source:	Strategy:
Clinicaltrials.gov	Search: telehealth; telecare; telemedicine; eHealth; mHealth; veteran
metaRegister of Controlled Trials (mRCT)	Search: telehealth; telecare; telemedicine; eHealth; mHealth; veteran
UK Clinical Trials Gateway	Search: telehealth; telecare; telemedicine; eHealth; mHealth; veteran
WHO International Clinical Trials Registry Platform	Search: telehealth; telecare; telemedicine; eHealth; mHealth; veteran

APPENDIX B. LIST OF EXCLUDED STUDIES

Exclude reasons: 1=Ineligible population, 2=Ineligible intervention, 3=Ineligible comparator, 4=Ineligible outcome, 5=Ineligible setting, 6=Ineligible study design, 7=Ineligible publication type, 8=Outdated or ineligible systematic review

#	Citation	Exclude reason
1.	Abraham C, Rosenthal DA. Merging home and health via contemporary care delivery: program management insights on a home telehealth project. <i>Computers, Informatics, Nursing</i> . 2008;26(5):273-281.	E2
2.	Acierno R, Gros DF, Ruggiero KJ, et al. Behavioral activation and therapeutic exposure for posttraumatic stress disorder: a noninferiority trial of treatment delivered in person versus home-based telehealth. <i>Depression & Anxiety</i> . 2016;33(5):415-423.	E4
3.	Acierno R, Knapp R, Tuerk P, et al. A non-inferiority trial of Prolonged Exposure for posttraumatic stress disorder: in person versus home-based telehealth. <i>Behaviour Research & Therapy</i> . 2017;89:57-65.	E4
4.	Acosta MC, Possemato K, Maisto SA, et al. Web-delivered CBT reduces heavy drinking in OEF-OIF veterans in primary care with symptomatic substance use and PTSD. <i>Behavior Therapy</i> . 2017;48(2):262-276.	E2
5.	Ahrendt AD, Kattelmann KK, Rector TS, Maddox DA. The effectiveness of telemedicine for weight management in the MOVE! Program. <i>Journal of Rural Health</i> . 2014;30(1):113-119.	E3
6.	Alrajab S, Smith TR, Owens M, Arenó JP, Caldito G. A home telemonitoring program reduced exacerbation and healthcare utilization rates in COPD patients with frequent exacerbations. <i>Telemedicine Journal & E-Health</i> . 2012;18(10):772-776.	E2
7.	Ana EJS, Martino S, Gebregziabher M. Impact of telehealth in-home-messaging devices on alcohol use in dually diagnosed veterans. <i>Drug and Alcohol Dependence</i> . 2015;156.	E7
8.	Anderson J, Godwin KM, Petersen NJ, Willson P, Kent TA. A pilot test of videoconferencing to improve access to a stroke risk-reduction programme for Veterans. <i>Journal of Telemedicine & Telecare</i> . 2013;19(3):153-159.	E3
9.	Andrews SM, Sperber NR, Gierisch JM, et al. Patient perceptions of a comprehensive telemedicine intervention to address persistent poorly controlled diabetes. <i>Patient Preference & Adherence</i> . 2017;11:469-478.	E2
10.	Arena J, Dennis N, Devineni T, Maclean R, Meador K. A pilot study of feasibility and efficacy of telemedicine-delivered psychophysiological treatment for vascular headache. <i>Telemedicine Journal & E-Health</i> . 2004;10(4):449-454.	E3
11.	Azevedo KJ, Weiss BJ, Webb K, Gimeno J, Cloitre M. Piloting specialized mental health care for rural women veterans using STAIR delivered via telehealth: implications for reducing health disparities. <i>Journal of Health Care for the Poor & Underserved</i> . 2016;27(4A):1-7.	E3
12.	Baldonado A, Rodriguez L, Renfro D, Sheridan SB, McElrath M, Chardos J. A home telehealth heart failure management program for veterans through care transitions. <i>Dimensions of Critical Care Nursing</i> . 2013;32(4):162-165.	E7
13.	Barnett TE, Chumbler NR, Vogel WB, Beyth RJ, Qin H, Kobb R. The effectiveness of a care coordination home telehealth program for veterans with diabetes mellitus: a 2-year follow-up. <i>American Journal of Managed Care</i> . 2006;12(8):467-474.	E2
14.	Barnett TE, Chumbler NR, Vogel WB, Beyth RJ, Ryan P, Figueroa S. The cost-utility of a care coordination/home telehealth programme for veterans with diabetes. <i>Journal of Telemedicine & Telecare</i> . 2007;13(6):318-321.	E2

15.	Barnwell SV, Juretic MA, Hoerster KD, Van de Plasch R, Felker BL. VA Puget Sound Telemental Health Service to rural veterans: a growing program. <i>Psychological Services</i> . 2012;9(2):209-211.	E7
16.	Baskin DS. Telemedicine and telemental health: Addressing the barriers to providing psychotherapy through video teleconferencing. <i>Dissertation Abstracts International: Section B: The Sciences and Engineering</i> . 2014;74(12-B(E)):No Pagination Specified.	E7
17.	Battaglia C, Peterson J, Whitfield E, et al. Integrating motivational interviewing into a home telehealth program for veterans with posttraumatic stress disorder who smoke: a randomized controlled trial. <i>Journal of Clinical Psychology</i> . 2016;72(3):194-206.	E2
18.	Bauer MS, Krawczyk L, Miller CJ, et al. Team- based telecare for bipolar disorder . <i>Telemedicine Journal & E-Health</i> . 2016;22(10):855-864.	E3
19.	Bendixen RM, Levy C, Lutz BJ, Horn KR, Chronister K, Mann WC. A telerehabilitation model for victims of polytrauma. <i>Rehabilitation Nursing Journal</i> . 2008;33(5):215-220.	E5
20.	Bendixen RM, Levy CE, Olive ES, Kobb RF, Mann WC. Cost effectiveness of a telerehabilitation program to support chronically ill and disabled elders in their homes. <i>Telemedicine Journal & E-Health</i> . 2009;15(1):31-38.	E5
21.	Beste LA, Glorioso TJ, Ho PM, et al. Telemedicine specialty support promotes hepatitis C treatment by primary care providers in the Department of Veterans Affairs. <i>American Journal of Medicine</i> . 2017;130(4):432-438.e433.	E5
22.	Beste LA, Mattox EA, Pichler R, et al. Primary care team members report greater individual benefits from long- versus short-term specialty telemedicine mentorship. <i>Telemedicine Journal & E-Health</i> . 2016;22(8):699-706.	E2
23.	Bittner AK, Wykstra SL, Yoshinaga PD, Li T. Telerehabilitation for people with low vision. <i>Cochrane Database of Systematic Reviews</i> . 2014(3).	E7
24.	Bounthavong M, Pruitt LD, Smolenski DJ, Gahm GA, Bansal A, Hansen RN. Economic evaluation of in-home telehealth compared to in-person treatment delivery for managing depression. <i>Value in Health</i> . 2016;19(3):A189.	E7
25.	Bowen ME, Bosworth HB, Roumie CL. Blood pressure control in a hypertension telemedicine intervention: does distance to primary care matter? <i>Journal of Clinical Hypertension</i> . 2013;15(10):723-730.	E2
26.	Brainerd L, Hawkins SY. Enrollment of veterans into a heart failure home telehealth program. <i>Home Health Care Management & Practice</i> . 2016;28(3):155-160.	E7
27.	Brooks E, Novins DK, Noe T, et al. Reaching rural communities with culturally appropriate care: a model for adapting remote monitoring to American Indian veterans with posttraumatic stress disorder. <i>Telemedicine Journal & E-Health</i> . 2013;19(4):272-277.	E3
28.	Brown N. Telemental health versus face-to-face treatment: An examination of Operation Enduring Freedom and Operation Iraqi Freedom veterans' preferences for mental health services. <i>Dissertation Abstracts International: Section B: The Sciences and Engineering</i> . 2018;79(4-B(E)):No Pagination Specified.	E7
29.	Bumgarner DJ, Polinsky EJ, Herman KG, et al. Mental health care for rural veterans: A systematic literature review, descriptive analysis, and future directions. <i>Journal of Rural Mental Health</i> . 2017;41(3):222-233.	E8
30.	Chandler HK, McAndrew LM, Ciccone DS. Telemedicine treatment for veterans with gulf war illness [abstract]. <i>Psychosomatic medicine</i> . 2013;[71st Annual Scientific Meeting of the American Psychosomatic Society; 2013 Mar 13-16; Miami, FL United States](3):A-108.	E7
31.	Chen TC, Christofferson DE, Hamlett-Berry K, et al. A tobacco cessation treatment model using telehealth: a pilot evaluation in Veterans. <i>Journal of Telemedicine & Telecare</i> . 2014;20(3):161-163.	E2
32.	Chumbler NR, Mann WC, Wu S, Schmid A, Kobb R. The association of home-	E4

	telehealth use and care coordination with improvement of functional and cognitive functioning in frail elderly men. <i>Telemedicine Journal & E-Health</i> . 2004;10(2):129-137.	
33.	Chumbler NR, Neugaard B, Kobb R, Ryan P, Qin H, Joo Y. Evaluation of a care coordination/home-telehealth program for veterans with diabetes: health services utilization and health-related quality of life. <i>Evaluation & the Health Professions</i> . 2005;28(4):464-478.	E3
34.	Chumbler NR, Neugaard B, Ryan P, Qin H, Joo Y. An observational study of veterans with diabetes receiving weekly or daily home telehealth monitoring. <i>Journal of Telemedicine & Telecare</i> . 2005;11(3):150-156.	E2
35.	Chumbler NR, Vogel WB, Garel M, Qin H, Kobb R, Ryan P. Health services utilization of a care coordination/home-telehealth program for veterans with diabetes: a matched-cohort study. <i>Journal of Ambulatory Care Management</i> . 2005;28(3):230-240.	E2
36.	Clapp JD, Kemp JJ, Cox KS, Tuerk PW. Patterns of change in response to prolonged exposure: implications for treatment outcome. <i>Depression & Anxiety</i> . 2016;33(9):807-815.	E2
37.	Coulton S, Coulton K. Promoting and sustaining independence in a community setting: Kent telehealth evaluative development pilot: a study into the management of people with long term conditions. <i>Kent County Council</i> . 2010.	E7
38.	Crowley MJ, Edelman D, McAndrew AT, et al. Effectiveness of a scalable telemedicine intervention for veterans with persistent poor diabetes control. <i>Diabetes</i> . 2015;64(5).	E7
39.	Crowley MJ, Edelman D, McAndrew AT, et al. Practical telemedicine for veterans with persistently poor diabetes control: a randomized pilot trial. <i>Telemedicine Journal & E-Health</i> . 2016;22(5):376-384.	E2
40.	Dang S, Gomez-Orozco CA, van Zuilen MH, Levis S. Providing dementia consultations to veterans using clinical video telehealth: results from a clinical demonstration project. <i>Telemedicine Journal & E-Health</i> . 2018;24(3):203-209.	E3
41.	Dang S, Sanchez A, Oropesa L, Roos BA, Florez H. Telehealth-assisted care coordination of older veterans with Type 2 diabetes lowers coronary heart disease risk despite clinical inertia. <i>Diabetes Technology & Therapeutics</i> . 2010;12(12):995-1001.	E2
42.	Darkins A, Kendall S, Edmonson E, Young M, Stressel P. Reduced cost and mortality using home telehealth to promote self-management of complex chronic conditions: a retrospective matched cohort study of 4,999 veteran patients. <i>Telemedicine Journal & E-Health</i> . 2015;21(1):70-76.	E2
43.	Desko L, Nazario M. Evaluation of a clinical video telehealth pain management clinic. <i>Journal of Pain & Palliative Care Pharmacotherapy</i> . 2014;28(4):359-366.	E3
44.	DeYoung N, Shenal BV. The reliability of the Montreal Cognitive Assessment using telehealth in a rural setting with veterans. <i>Journal of Telemedicine & Telecare</i> . 2018;1357633X17752030.	E2
45.	Dracup CAJ. The effect of a Care Coordination/Home Telehealth Program on veteran behavioral health patients and recidivism. <i>Dissertation Abstracts International Section A: Humanities and Social Sciences</i> . 2012;72(7-A):2375.	E7
46.	Dugas M. Individual differences in regulatory mode moderate the effectiveness of a pilot mHealth trial for diabetes management among older veterans. <i>Plos one</i> . 2018.	E1
48.	Elliott J, Chapman J, Clark DJ. Videoconferencing for a veteran's pain management follow-up clinic. <i>Pain Management Nursing</i> . 2007;8(1):35-46.	E3
49.	Fields B, Pathak P, McCloskey S, et al. Remote ambulatory management of veterans with obstructive sleep apnea. <i>Sleep</i> . 2014;37(31).	E5
50.	Flodgren G, Rachas A, Farmer AJ, Inzitari M, Shepperd S. Interactive telemedicine: effects on professional practice and health care outcomes. <i>Cochrane Database Syst Rev</i> . 2015(9):Cd002098.	E1
51.	Fortney JC, Maciejewski ML, Tripathi SP, Deen TL, Pyne JM. A budget impact analysis	E2



	of telemedicine-based collaborative care for depression. <i>Medical Care</i> . 2011;49(9):872-880.	
52.	Fortney JC, Pyne JM, Kimbrell TA, et al. Telemedicine-based collaborative care for posttraumatic stress disorder: a randomized clinical trial. <i>JAMA Psychiatry</i> . 2015;72(1):58-67.	E2
53.	Franklin CL, Cuccurullo LA, Walton JL, Arseneau JR, Petersen NJ. Face to face but not in the same place: A pilot study of prolonged exposure therapy. <i>Journal of Trauma & Dissociation</i> . 2017;18(1):116-130.	E3
54.	Gabrielian S, Yuan A, Andersen RM, et al. Chronic disease management for recently homeless veterans: a clinical practice improvement program to apply home telehealth technology to a vulnerable population. <i>Medical Care</i> . 2013;51(3 Suppl 1):S44-51.	E2
55.	Garcia MM, Lindstrom KJ. Telebehavioral health: practical application in deployed and garrison settings. <i>US Army Medical Department Journal</i> . 2014:29-35.	E7
56.	Gehrman P, Bellamy S, Medvedeva E, et al. Telehealth delivery of group CBT-I is noninferior to in-person treatment in veterans with PTSD. <i>Sleep</i> . 2018;Conference: 32nd annual meeting of the associated professional sleep societies, SLEEP. 2018. United states 41(Supplement 1):A141-A142.	E7
57.	Gilmore AK, Davis MT, Grubaugh A, et al. "Do you expect me to receive PTSD care in a setting where most of the other patients remind me of the perpetrator?": Home-based telemedicine to address barriers to care unique to military sexual trauma and Veterans Affairs hospitals. <i>Contemporary Clinical Trials</i> . 2016;48:59-64.	E7
58.	Goetter EM, Bui E, Ojserkis RA, Zakarian RJ, Brendel RW, Simon NM. A systematic review of dropout from psychotherapy for posttraumatic stress disorder among Iraq and Afghanistan combat veterans. <i>Journal of Traumatic Stress</i> . 2015;28(5):401-409.	E4
59.	Goetter EM, Bui E, Ojserkis RA, Zakarian RJ, Brendel RW, Simon NM. "A systematic review of dropout from psychotherapy for posttraumatic stress disorder among Iraq and Afghanistan combat veterans": Erratum. <i>Journal of Traumatic Stress</i> . 2015;28(6):590.	E7
60.	Gould CE, Zapata AML, Bruce J, et al. Development of a video-delivered relaxation treatment of late-life anxiety for veterans. <i>International Psychogeriatrics</i> . 2017;29(10):1633-1645.	E2
61.	Gros DF, Yoder M, Tuerk PW, Lozano BE, Acierno R. Exposure therapy for PTSD delivered to veterans via telehealth: predictors of treatment completion and outcome and comparison to treatment delivered in person. <i>Behavior Therapy</i> . 2011;42(2):276-283.	E4
62.	Grubbs KM, Fortney JC, Dean T, Williams JS, Godleski L. A comparison of mental health diagnoses treated via interactive video and face to face in the veterans healthcare administration. <i>Telemedicine Journal & E-Health</i> . 2015;21(7):564-566.	E4
63.	Grubbs KM, Fortney JC, Kimbrell T, et al. Usual care for rural veterans with posttraumatic stress disorder. <i>Journal of Rural Health</i> . 2017;33(3):290-296.	E4
64.	Hill RD, Luptak MK, Rupper RW, et al. Review of Veterans Health Administration telemedicine interventions. <i>American Journal of Managed Care</i> . 2010;16(12 Suppl HIT):e302-310.	E8
65.	Hopp F, Woodbridge P, Subramanian U, Copeland L, Smith D, Lowery J. Outcomes associated with a home care telehealth intervention. <i>Telemedicine Journal & E-Health</i> . 2006;12(3):297-307.	E3
66.	Horton J. Improving self-management in patients with chronic conditions. <i>Dissertation Abstracts International: Section B: The Sciences and Engineering</i> . 2017;77(10-B(E)):No Pagination Specified.	E7
67.	Interian A, King AR, St Hill LM, Robinson CH, Damschroder LJ. Evaluating the implementation of home-based videoconferencing for providing mental health services. <i>Psychiatric Services</i> . 2018;69(1):69-75.	E4

68.	Ishani A, Christopher J, Palmer D, et al. Telehealth by an interprofessional team in patients with CKD: a randomized controlled trial. <i>American Journal of Kidney Diseases</i> . 2016;68(1):41-49.	E4
69.	Jaconis M, Santa Ana EJ, Killeen TK, Badour CL, Back SE. Concurrent treatment of PTSD and alcohol use disorder via telehealth in a female Iraq veteran. <i>American Journal on Addictions</i> . 2017;26(2):112-114.	E3
70.	Jia H, Chuang HC, Wu SS, Wang X, Chumbler NR. Long-term effect of home telehealth services on preventable hospitalization use. <i>Journal of Rehabilitation Research & Development</i> . 2009;46(5):557-566.	E2
71.	Jia H, Feng H, Wang X, Wu SS, Chumbler N. A longitudinal study of health service utilization for diabetes patients in a care coordination home-telehealth programme. <i>Journal of Telemedicine & Telecare</i> . 2011;17(3):123-126.	E2
72.	Joseph AM. Care coordination and telehealth technology in promoting self-management among chronically ill patients. <i>Telemedicine Journal & E-Health</i> . 2006;12(2):156-159.	E2
73.	Kehle SM, Greer N, Rutks I, Wilt T. Interventions to improve veterans' access to care: a systematic review of the literature. <i>Journal of General Internal Medicine</i> . 2011;26 Suppl 2:689-696.	E4
74.	Kincade K. Telemedicine supports primary-care delivery at outlying VA centers. <i>Telemedicine & Telehealth Networks</i> . 1998;4(2):8, 10-11.	E7
75.	Kirkizlar E, Serban N, Sisson JA, Swann JL, Barnes CS, Williams MD. Evaluation of telemedicine for screening of diabetic retinopathy in the Veterans Health Administration. <i>Ophthalmology</i> . 2013;120(12):2604-2610.	E5
76.	Klee A, Stacy M, Rosenheck R, Harkness L, Tsai J. Interest in technology-based therapies hampered by access: A survey of veterans with serious mental illnesses. <i>Psychiatric Rehabilitation Journal</i> . 2016;39(2):173-179.	E2
77.	Klobucar TF, Hibbs R, Jans P, Adams MR. Evaluating the effectiveness of an aggressive case management and home telehealth monitoring program for long-term control of A1C. <i>Professional Case Management</i> . 2012;17(2):51-58; quiz 59-60.	E2
78.	Krupnick JL, Green BL, Amdur R, et al. An Internet-based writing intervention for PTSD in veterans: A feasibility and pilot effectiveness trial. <i>Psychological Trauma</i> . 2017;9(4):461-470.	E2
79.	Leach M, Garcia G, Ganzer N. Implementation and evaluation of a pharmacist-run mental health treatment clinic via clinical video telehealth. <i>The Mental Health Clinician</i> . 2016;6(3):159-164.	E3
80.	Levy CE, Spooner H, Lee JB, Sonke J, Myers K, Snow E. Telehealth-based creative arts therapy: Transforming mental health and rehabilitation care for rural veterans. <i>The Arts in Psychotherapy</i> . 2018;57:20-26.	E3
81.	Lightstone AJ, Bailey S, Voros P. Collaborative music therapy via remote video technology to reduce a veteran's symptoms of severe, chronic PTSD. <i>Arts & Health</i> . 2015;7(2):123-136.	E3
82.	Lindsay JA, Kauth MR, Hudson S, et al. Implementation of video telehealth to improve access to evidence-based psychotherapy for posttraumatic stress disorder. <i>Telemedicine Journal & E-Health</i> . 2015;21(6):467-472.	E3
83.	Luxton DD, O'Brien K, Pruitt LD, Johnson K, Kramer G. Suicide risk management during clinical telepractice. <i>International Journal of Psychiatry in Medicine</i> . 2014;48(1):19-31.	E3
84.	Luxton DD, Pruitt LD, O'Brien K, Kramer G. An evaluation of the feasibility and safety of a home-based telemental health treatment for posttraumatic stress in the U.S. Military. <i>Telemedicine Journal and E-Health</i> . 2015;21(11):880-886.	E3
85.	Luxton DD, Pruitt LD, O'Brien K, et al. Design and methodology of a randomized clinical	E7

	trial of home-based telemental health treatment for U.S. military personnel and veterans with depression. <i>Contemporary Clinical Trials</i> . 2014;38(1):134-144.	
86.	Maieritsch KP, Smith TL, Hessinger JD, Ahearn EP, Eickhoff JC, Zhao Q. Randomized controlled equivalence trial comparing videoconference and in person delivery of cognitive processing therapy for PTSD. <i>Journal of Telemedicine & Telecare</i> . 2016;22(4):238-243.	E4
87.	Marton K, Kanas N. Telehealth modalities for group therapy: Comparisons to in-person group therapy. <i>International Journal of Group Psychotherapy</i> . 2016;66(1):145-150.	E7
88.	Menon AS, Kondapavalru P, Krishna P, et al. Evaluation of a portable low cost videophone system in the assessment of depressive symptoms and cognitive function in elderly medically ill veterans. <i>Journal of Nervous & Mental Disease</i> . 2001;189(6):399-401.	E4
89.	Merriel SW, Andrews V, Salisbury C. Telehealth interventions for primary prevention of cardiovascular disease: a systematic review and meta-analysis. <i>Preventive Medicine</i> . 2014;64:88-95.	E1
90.	Miller CJ, McInnes DK, Stolzmann K, Bauer MS. Interest in use of technology for healthcare among Veterans receiving treatment for mental health. <i>Telemedicine Journal & E-Health</i> . 2016;22(10):847-854.	E2
91.	Moeckli J, Stewart KR, Ono S, et al. Mixed-methods study of uptake of the Extension for Community Health Outcomes (ECHO) telemedicine model for rural Veterans With HIV. <i>Journal of Rural Health</i> . 2017;33(3):323-331.	E2
92.	Moo LR, Jafri Z, Morin PJ. Home-based video telehealth for veterans with dementia. <i>Federal Practitioner</i> . 2014;31(12):36-38.	E6
93.	Morland LA, Greene CJ, Grubbs K, et al. Therapist adherence to manualized cognitive-behavioral therapy for anger management delivered to veterans with PTSD via videoconferencing. <i>Journal of Clinical Psychology</i> . 2011;67(6):629-638.	E3
94.	Muir S, de Boer K, Meyer D, M. N. Barriers and facilitators of videoconferencing psychotherapy implementation in military health care environments: a systematic review.	E7
95.	Niles BL, Klunk-Gillis J, Ryngala DJ, Silberbogen AK, Paysnick A, Wolf EJ. Comparing mindfulness and psychoeducation treatments for combat-related PTSD using a telehealth approach. <i>Psychological Trauma</i> . 2012;4(5):538-547.	E7
96.	Owen R. Adapting and Implementing the Blended Collaborative Care Model in CBOCs. CRE 12-310.	E7
97.	Painter JT, Fortney JC, Austen MA, Pyne JM. Cost-Effectiveness of Telemedicine-Based Collaborative Care for Posttraumatic Stress Disorder. <i>Psychiatric Services</i> . 2017;68(11):1157-1163.	E2
98.	Parker S, Prince A, Thomas L, et al. Electronic, mobile and telehealth tools for vulnerable patients with chronic disease: a systematic review and realist synthesis. <i>BMJ Open</i> . 2018;8(8):e019192.	E1
99.	Porcari CE, Amdur RL, Koch EI, et al. Assessment of post-traumatic stress disorder in veterans by videoconferencing and by face-to-face methods. <i>Journal of Telemedicine & Telecare</i> . 2009;15(2):89-94.	E3
100.	Price M, Gros DF. Examination of prior experience with telehealth and comfort with telehealth technology as a moderator of treatment response for PTSD and depression in veterans. <i>International Journal of Psychiatry in Medicine</i> . 2014;48(1):57-67.	E3
101.	Pruitt LD, Vuletic S, Smolenski DJ, Wagner A, Luxton DD, Gahm GA. Predicting post treatment client satisfaction between behavioural activation for depression delivered either in-person or via home-based telehealth. <i>Journal of Telemedicine & Telecare</i> . 2018:1357633X18784103.	E4
102.	Pyne JM, Fortney JC, Tripathi SP, Maciejewski ML, Edlund MJ, Williams DK. Cost-	E2

	effectiveness analysis of a rural telemedicine collaborative care intervention for depression. <i>Archives of General Psychiatry</i> . 2010;67(8):812-821.	
103.	Riegler LJ, Neils-Strunjas J, Boyce S, Wade SL, Scheifele PM. Cognitive intervention results in web-based videophone treatment adherence and improved cognitive scores. <i>Medical Science Monitor</i> . 2013;19:269-275.	E2
104.	Rubin R. VA Using telemedicine to provide therapy to rural veterans with PTSD. <i>JAMA</i> . 2018;319(16):1648.	E7
105.	Russo JE, McCool RR, Davies L. VA telemedicine: an analysis of cost and time savings. <i>Telemedicine Journal & E-Health</i> . 2016;22(3):209-215.	E2
106.	Rutledge T, Skoyen JA, Wiese JA, Ober KM, Woods GN. A comparison of MOVE! versus TeleMOVE programs for weight loss in Veterans with obesity. <i>Obesity Research & Clinical Practice</i> . 2017;11(3):344-351.	E2
107.	Salisbury C, O'Cathain A, Thomas C, et al. Telehealth for patients at high risk of cardiovascular disease: pragmatic randomised controlled trial. <i>British Medical Journal</i> . 2016.	E1
108.	Samii A, Ryan-Dykes P, Tsukuda RA, Zink C, Franks R, Nichol WP. Telemedicine for delivery of health care in Parkinson's disease. <i>Journal of Telemedicine & Telecare</i> . 2006;12(1):16-18.	E5
109.	Shore JH, Brooks E, Anderson H, et al. Characteristics of telemental health service use by American Indian veterans. <i>Psychiatric Services</i> . 2012;63(2):179-181.	E3
110.	Shore JH, Manson SM. Telepsychiatric care of American Indian veterans with post-traumatic stress disorder: bridging gaps in geography, organizations, and culture. <i>Telemedicine Journal & E-Health</i> . 2004;10 Suppl 2:S-64-69.	E3
111.	Shore JH, Manson SM. The American Indian veteran and posttraumatic stress disorder: a telehealth assessment and formulation. <i>Culture, Medicine & Psychiatry</i> . 2004;28(2):231-243.	E3
112.	Shore P, Goranson A, Ward MF, Lu MW. Meeting veterans where they're @: a VA Home-Based Telemental Health (HBTMH) pilot program. <i>International Journal of Psychiatry in Medicine</i> . 2014;48(1):5-17.	E3
113.	Smith MW, Hill ML, Hopkins KL, Kiratli BJ, Cronkite RC. A modeled analysis of telehealth methods for treating pressure ulcers after spinal cord injury. <i>International Journal of Telemedicine & Applications</i> . 2012;2012:729492.	E5
114.	Smolenski DJ, Pruitt LD, Vuletic S, Luxton DD, Gahm G. Unobserved heterogeneity in response to treatment for depression through videoconference. <i>Psychiatric Rehabilitation Journal</i> . 2017;40(3):303-308.	E4
115.	Sorocco KH, Bratkovich KL, Wingo R, Qureshi SM, Mason PJ. Integrating care coordination home telehealth and home based primary care in rural Oklahoma: a pilot study. <i>Psychological Services</i> . 2013;10(3):350-352.	E7
116.	Srivastava A, Do JM, Sales VL, Ly S, Joseph J. Impact of patient-centred home telehealth programme on outcomes in heart failure. <i>Journal of Telemedicine & Telecare</i> . 2018:1357633X18775852.	E2
117.	Strachan M, Gros DF, Ruggiero KJ, Lejuez CW, Acierno R. An integrated approach to delivering exposure-based treatment for symptoms of PTSD and depression in OIF/OEF veterans: preliminary findings. <i>Behavior Therapy</i> . 2012;43(3):560-569.	E4
118.	Strachan M, Gros DF, Yuen E, Ruggiero KJ, Foa EB, Acierno R. Home-based telehealth to deliver evidence-based psychotherapy in veterans with PTSD. <i>Contemporary Clinical Trials</i> . 2012;33(2):402-409.	E7
119.	Tan G, Teo I, Srivastava D, et al. Improving access to care for women veterans suffering from chronic pain and depression associated with trauma. <i>Pain Medicine</i> . 2013;14(7):1010-1020.	E3
120.	Thorp SR, Fidler J, Moreno L, Floto E, Agha Z. Lessons learned from studies of	E7

	psychotherapy for posttraumatic stress disorder via video teleconferencing. <i>Psychological Services</i> . 2012;9(2):197-199.	
121.	Totten AM, Womack DM, Eden KB, et al. Telehealth: mapping the evidence for patient outcomes from systematic reviews. 2016.	E1
122.	Turner TH, Horner MD, Vankirk KK, Myrick H, Tuerk PW. A pilot trial of neuropsychological evaluations conducted via telemedicine in the Veterans Health Administration. <i>Telemedicine Journal & E-Health</i> . 2012;18(9):662-667.	E4
123.	Wakefield BJ, Holman JE, Ray A, et al. Effectiveness of home telehealth in comorbid diabetes and hypertension: a randomized, controlled trial. <i>Telemedicine Journal & E-Health</i> . 2011;17(4):254-261.	E2
124.	Wakefield BJ, Ward MM, Holman JE, et al. Evaluation of home telehealth following hospitalization for heart failure: a randomized trial. <i>Telemedicine Journal & E-Health</i> . 2008;14(8):753-761.	E3
125.	Whealin JM, Seibert-Hatalsky LA, Howell JW, Tsai J. E-mental health preferences of Veterans with and without probable posttraumatic stress disorder. <i>Journal of Rehabilitation Research & Development</i> . 2015;52(6):725-738.	E3
126.	Wong MY-S. Application of behavioral telehealth in the assessment of PTSD: Factors affecting patient and clinician satisfaction using videoteleconferencing (VTC) technology. <i>Dissertation Abstracts International: Section B: The Sciences and Engineering</i> . 2003;63(12-B):6111.	E7
127.	Wynn SD, Sherrod RA. Providing mental health care to veterans in rural areas: using telehealth in mobile clinics. <i>Journal of Psychosocial Nursing & Mental Health Services</i> . 2012;50(6):22-28.	E7
128.	Young LB, Foster L, Silander A, Wakefield BJ. Home telehealth: patient satisfaction, program functions, and challenges for the care coordinator. <i>Journal of Gerontological Nursing</i> . 2011;37(11):38-46.	E3

APPENDIX C. EVIDENCE TABLES

DATA ABSTRACTION OF INCLUDED SYSTEMATIC REVIEWS

Author Year	Aims Search details Eligibility criteria	Numbers and designs of included studies applicable to present review; sample sizes	Patient characteristics from included studies applicable to present review	Intervention characteristics from included studies applicable to present review	Overall results (stratified by Key Question)
Turgoose 2018 ¹	<p>Teletherapy for Veterans with PTSD.</p> <p>CINAHL, PubMed, and PsycInfo databases plus searches in <i>Journal of Telehealth and Telecare</i> and <i>Journal of Telehealth and e-Health</i>. No information on search dates.</p> <p>Articles included if they reported on use of teletherapy (eg, videoconferencing, telephone) for PTSD with ex-service personnel and excluded if they reported on online-only interventions.</p>	<p>Out of 41 included studies, sample size ranged from 1-600 participants. 28 studies had experimental designs, 8 were non-experimental (surveys, or study descriptions only), 3 were single case studies, 1 was qualitative, 1 was a retrospective cost analysis, and 1 was a secondary data analysis.</p> <p>13 studies looked at attrition, drop-out and attendance rates. Authors did not report the number of studies that looked at patient satisfaction.</p>	<p>40 studies were conducted in US Veterans and 1 in Canadian Veterans. In most studies, participants had limited access to treatment due to living in remote or rural areas.</p>	<p>In most cases, participants received specific equipment and software from the VHA. In 3 cases, participants used Skype or another videoconferencing application available on a smartphone. In 23 studies, participants traveled to local clinics for appointments. In 6 studies, participants received treatment in group settings.</p> <p>Interventions included: -Prolonged exposure (15 studies) -Cognitive processing therapy (8) -Cognitive behavioral therapy (5) -Behavioral activation (3) -Eye-movement desensitization and reprocessing (1) -Anger management (2) -Mindfulness (1) -General coping and psychoeducation interventions (2)</p> <p>Follow-up duration not reported, but authors found that reductions in PTSD symptoms were present at 3 and 6 months after treatment for all but 1 study examining effectiveness.</p>	<p>KQ1: "No studies found significant differences in attrition between tele-therapy and in-person treatments, with one finding that those receiving tele-therapy attended significantly more sessions. There were no differences in the number of sessions attended before dropout occurred, except for one study which suggested that those receiving tele-therapy attended more sessions before dropping out of treatment."</p> <p>"No studies found any significant differences in satisfaction and acceptability between tele-therapy and in-person treatment groups, with most reporting high levels of satisfaction with both."</p>

Abbreviations: PTSD = post-traumatic stress disorder; VHA= Veterans Health Administration



DATA ABSTRACTION OF INCLUDED PRIMARY STUDIES

Data Abstraction of Observational Studies

Author Year	Study Design Sample Size Location	Patient Characteristics	Intervention vs Comparator Follow-Up	Setting	Overall Results (Stratified by Key Question)
Litwack 2014 ²	Within-subject crossover study N=30 New England	Trauma-exposed Veterans IE criteria: English-speaking Age (mean): 53 years Sex: 90% male Race: 79% white Rurality: NR	Participants completed PTSD diagnostic assessment both in person and via video. Assessments were administered 2 weeks apart by a doctoral-level clinician.	Video location: VA Medical Center In-person location: VA Medical Center	KQ1: Veterans reported high levels of satisfaction with both video and in-person diagnostic assessment including: (a) "how comfortable they felt with the clinician," $t(28)=-.95, P=.35$ (b) "how comfortable they felt with the interview material," $t(28)=.00, P=1.00$ (c) "the convenience of the assessment," $t(28)=1.31, P=.20$
Shore 2007a, ³ Shore 2007b, ⁴ Shore 2008 ⁵	Within-subject crossover study N=53 Colorado	Rural Vietnam-era American Indians IE criteria: None Age (mean): 54 years Sex: 100% male Race: 100% American Indian Rurality: 100% rural	Participants completed mental health diagnostic assessment both in person and via video. Assessments were administered less than 2 weeks apart (average 10.8 days) by a psychiatrist.	Video location: Community Tribal Veterans Center In-person location: Private office in community	KQ1: There were no significant differences between patients' overall mean satisfaction between video and in-person groups (4.59 vs 4.68, $P=NR$). KQ2: It is cheaper to assess mental health through telehealth than in-person (\$20,199 at established telehealth clinic vs \$24,474 at new clinic vs \$33,841 at in-person clinic based on high salary costs).

Author Year	Study Design Sample Size Location	Patient Characteristics	Intervention vs Comparator Follow-Up	Setting	Overall Results (Stratified by Key Question)
Shores 2004 ⁶	Prospective Cohort N=16 Seattle, WA	Veterans residing at either of two Washington State Veterans' Homes. IE Criteria: ≥60 years and screened positive for dementia using the 7-Minute Screen Age (mean): 78 years Sex: 94% male Race: NR Rurality: NR	Video vs in-person examination for dementia conducted by different geriatric psychiatrists. Average time between the telehealth and in-person examination was 8.2 days.	Video location: Veterans' Home using a VCON Armada Cruiser 384 videoconference system In-person location: NR	KQ1: Telehealth patient survey (mean ± SD): (a) I understand what the health care provider told me as well as if it had been in person (4.5 ± 0.06) (b) The telehealth visit was private enough for me to ask the questions I wanted to (4.7 ± 0.5) (c) The telehealth technology saved me time (4.8 ± 0.4) (d) I would choose to have a telehealth visit again (4.8 ± 0.4) (e) I would rather use telehealth than travel to the clinic (4.8 ± 0.6)
Tuerk 2010 ⁷	Prospective cohort N=47 Southeast, US	Veterans diagnosed with combat-related PTSD Age: mean 39.0 Sex: 94% male Race: 64% white IE criteria: Diagnosis of combat-related PTSD via DSM-IV Rurality: 26% (Telehealth option was only made available for patients living in rural areas)	Video vs in-person prolonged exposure treatment for 8 to 15 weekly 90-minute sessions. Delivered by clinical psychologists.	Video: CBOC using a Tanburg 1000 MXP In-person: VAMC	KQ1: Treatment completion (telehealth vs in-person): 75% vs 83% Sessions attended by completers (mean ± SD): 10.0 ± 6.3 vs 10.1 ± 3.8

Abbreviations: IE = Inclusion/Exclusion criteria; PTSD = post-traumatic stress disorder; VA = Veterans Affairs; NR= not reported; DSM-IV = Diagnostic and Statistical Manual of Mental Disorders 4; VAMC = Veterans Affairs Medical Center; SD = standard deviation



Data Abstraction of RCTs

Author Year N	Study Design Sample Size Location	Patient Characteristics	Intervention vs Comparator Follow-Up	Setting	Overall Results (Stratified by Key Question)
Egede 2015, ⁸ Egede 2016, ⁹ Egede 2017, ¹⁰ Egede 2018 ¹¹	RCT N=241 South Carolina	Elderly Veterans with depression Age (mean): 63.9 years Sex: 97.5% male Race: 59.3% white IE criteria: DSM-IV criteria for major depressive disorder and stabilization of antidepressant medication for ≥ 4 weeks Rurality: NR	Video vs in-person individualized psychotherapy for 8 weeks (60-minute session once per week). Therapists were Master's-level counselors with at least 5 years of clinical experience. Follow-up: 12 months.	Video location: In-home videophone operating via standard telephone service In-person location: VA medical center	<p>KQ1: Satisfaction (CPOSS): No significant difference at any time</p> <p>KQ2: Healthcare Utilization Costs: (telehealth vs. in-person) \$687.91 vs \$1,359.49</p> <p>ICEEs at 12-months: (positive number favors telehealth) Mean: 5,892.34 Median: -787.85</p> <p>KQ3: QoL (SF-36): No significant difference at 12 months QALYs: No significant difference at 12 months</p> <p>% Difference in treatment response at 12 months (Telemedical minus in-person) BDI: 1.05% (90% CI -8.30 to 10.41) GDS: 1.66% (90% CI -7.20 to 10.52) SCID: -3.68% (90% CI -15.53 to 8.16)</p>



Author Year N	Study Design Sample Size Location	Patient Characteristics	Intervention vs Comparator Follow-Up	Setting	Overall Results (Stratified by Key Question)
Glassman 2017, ¹² Morland 2014, ¹³ Morland 2015 ¹⁴	Secondary analysis of 2 RCTs N=251 Hawaii	Male Veterans with PTSD and female Veterans and civilians with PTSD IE criteria: Diagnosis of PTSD; stable medication regimen; no active psychosis, severe cognitive impairment, homicidal or suicidal ideation, substance abuse, or organic psychological condition Age (mean): 50.8 years Sex: 50% male Race: 59% white Rurality: 100%	Video vs in-person group (men) or individual (women) cognitive processing therapy (Twelve 90-minute sessions over 6 weeks) delivered by pairs of doctoral-level therapists/social worker. Follow-up: 6 months	Video location: Local VA clinic or vet center used Tanberg 880 model health care system video teleconferencing equipment. Research assistant sat in room and intervened in cases of technological difficulties or clinical emergencies. In-person location: VAMC	KQ1: Men in video and in-person groups had similar ratings of satisfaction on Charleston Psychiatric Outpatient Satisfaction Scale-VA (mean \pm SD): 66.7 \pm 11.6 vs 63.9 \pm 10.7, $P=.36$ Proportion of treatment completers (10/12 sessions) did not differ between telehealth and in-person groups: 76.2% vs 79.4%, $P=NR$ Women in video group had lower rates of satisfaction than in-person: 66.5 vs 70.8, $P=.03$ KQ3: There was no effect of treatment modality on QOL over the treatment and follow-up period for men and women ($P>.33$)

Author Year N	Study Design Sample Size Location	Patient Characteristics	Intervention vs Comparator Follow-Up	Setting	Overall Results (Stratified by Key Question)
Greene 2010 ¹⁵ , Morland 2010 ¹⁶ , Morland 2013 ¹⁷	RCT N=125 Hawaii	Male rural combat Veterans. IE criteria: PTSD and anger problems; stable medication for 2 months; no active psychotic disorder, homicidal/suicidal ideation, cognitive impairment or substance dependence. Age (mean): 55 years Sex: 100% male Race: 33% white Rurality: 100% rural	Video teleconferencing vs in person-delivered group anger management therapy (12-session manual-based CBT intervention delivered by doctoral-level therapists). Follow-up: 6 months.	Video location: Veterans met at local VA, therapist teleconferenced in In-person location: Veterans and therapist met at local VA	<p>KQ1: No significant differences in number of sessions attended between groups (mean \pm SD): 10.3 \pm 2.5, $P=.29$. Did not differ based on sub-group analyses.</p> <p>No significant differences in satisfaction with care between groups as measured with Charleston Psychiatric Outpatient Satisfaction Scale (mean \pm SD): 62.5/80 \pm 13.1, $P=.94$. Did not differ based on sub-group analyses of island.</p> <p>KQ2: Unadjusted mean costs were significantly lower for telehealth (\$79, CI \$73-84) than in-person (\$792, CI \$727-856) delivery ($P=.01$).</p>

Author Year N	Study Design Sample Size Location	Patient Characteristics	Intervention vs Comparator Follow-Up	Setting	Overall Results (Stratified by Key Question)
Herbert 2017 ¹⁸	RCT N=128 San Diego, CA	Veterans with chronic pain IE Criteria: Moderate/severe chronic pain for >6 months, no serious or unstable medical or psychiatric condition, no SI. Age (mean): average 52 years Sex: 82% male Race: 47% white Rurality: NR	Video vs in person 8-week ACT delivered by graduate-level therapists. Follow-up: 6 months.	Video location: VA site of their choice (La Jolla Medical Center, Mission Valley Outpatient Clinic, or the Oceanside, Escondido, or Chula Vista CBOCs). In-person location: La Jolla Medical Center	<p>KQ1: No differences in mean satisfaction in video vs in-person groups as measured by CSQ: 4.40 vs 4.47, $P=.53$</p> <p>KQ3: Measured as mean difference (telehealth minus in-person) in change (95% CI): BPI Severity: -.06 (-.72 to .60) SF12-MCS: -1.72 (-6.13 to 2.7) SF12-PCS: -2.2 (-5.46 to 1.07) CPAQ: 3.45 (-3.13 to 10.03) MPI: .31 (.02–.60) PHQ-9: 1.22 (-.88 to 3.32) PSS-20: -4.01 (-11.01 to 3.00) PSQ: -.14 (-1.69 to 1.42)</p>

Author Year N	Study Design Sample Size Location	Patient Characteristics	Intervention vs Comparator Follow-Up	Setting	Overall Results (Stratified by Key Question)
Luxton 2016, ¹⁹ Bounthavong 2018 ²⁰	RCT N=121 Oregon and Washington	Military personnel and Veterans with depression Age (mean): 35.15 years Sex: 82% male Race: 70% white IE criteria: Met diagnostic criteria for minor depressive disorder or major depressive disorder, as determined by the SCID-I/P. If taking psychoactive medications, has maintained a stable regimen for a minimum of 30 days prior to study entry. Excluding those currently undergoing psychotherapy for depression or suicidal ideation. Rurality: NR	Video vs in-person BATD treatment for 50-60-min sessions every week for 8 weeks. Follow-up: 12 weeks.	Video: In-home, Dell M6500 laptop computer and Tandberg Precision HD Webcam In-person: In-office	<p>KQ1: CSQ: b= -.53 (95% CI -2.11 to 1.05)</p> <p>KQ2: Total direct cost per patient (telehealth vs in-person): Scenario 1 (technology provided by patients): \$309.31 vs \$406.44 Scenario 2 (technology provided by government): \$1,160.87 vs \$406.44</p> <p>ICER (negative number favors telehealth): Scenario 1: -\$158,506 Scenario 2: \$14,434,503</p> <p>KQ3: NR, but slightly lower mean improvements on hopelessness and depression scales</p>

Author Year N	Study Design Sample Size Location	Patient Characteristics	Intervention vs Comparator Follow-Up	Setting	Overall Results (Stratified by Key Question)
Ruskin 2004 ²¹	RCT N=119 Maryland	<p>Veterans with MH disorder (MDD, dysthymic disorder, adjustment disorder, mood disorder due to medical condition, or depressive disorder not otherwise specified)</p> <p>IE criteria: No bipolar disorder, schizophrenia, or substance use or dependence in past year Age (mean): 50 years Sex: 88% male Race: 61% white Rurality: NR</p>	<p>Video vs in person antidepressant medication management, psychoeducation, and brief supportive counseling (eight 20-minute visits with a psychiatrist). Follow-up: 6 months.</p>	<p>Video location: VA Medical Center or CBOC using personal computer-based videoconferencing equipment</p> <p>In-person location: VAMC or CBOC</p>	<p>KQ1: No significant difference between groups in number of visits (telehealth vs. in-person): 6.5 vs 6.5</p> <p>No significant difference between groups in patient satisfaction at visit 4, 6, or 8</p> <p>Psychiatrist satisfaction greater for patients seen in person than by video (t=-2.2, df=79, P<.05)</p> <p>KQ2: Per-session institutional costs were \$86.16 for telehealth vs \$63.25 in-person (t=3.2, P<.001). However, costs were equal if psychiatrist traveled ≤22 miles and less if they traveled >22 miles.</p> <p>Groups had equal utilization of VHA care (t=.7, P=NS).</p> <p>KQ3: No significant difference between telehealth vs in-person groups in response to treatment (50% improvement on Hamilton depression scale): 49% vs. 43%, χ²=0.4, df=1, P=NS</p> <p>No significant difference</p>

Author Year N	Study Design Sample Size Location	Patient Characteristics	Intervention vs Comparator Follow-Up	Setting	Overall Results (Stratified by Key Question)
					between telehealth vs in-person groups in remission (score of 7 or less on Hamilton depression scale). 39% vs 35%, $\chi^2=0.2$, $df=1$, $P=NS$

Author Year N	Study Design Sample Size Location	Patient Characteristics	Intervention vs Comparator Follow-Up	Setting	Overall Results (Stratified by Key Question)
Yuen 2015 ²²	RCT N=52 Southeast US	Veterans with PTSD IE criteria: Diagnosis of PTSD, stable medication regimen, no alcohol or substance disorder or dependence, no active psychotic disorder or severe suicidal ideation Age (mean): 44 years Sex: 98% male Race: 54% white Rurality: NR	Video vs in-person prolonged exposure therapy administered by Master's-level therapist (eight to twelve 90-minute sessions). Follow-up: 13 weeks	Video location: home-based videoconferencing equipment via tablet or computer that used Jabber, Facetime, or Skype software In-person location: NR	<p>KQ1: 100% of program completers in both groups reported being satisfied or very satisfied with treatment</p> <p>76.5% of telehealth vs 90.5% of in-person completers were very comfortable or comfortable when communicating with the therapist ($\chi^2(3)=3.98$, $P=.26$).</p> <p>76.9% of telehealth vs 95% of in-person completers rated communication with the therapist as excellent or very good ($\chi^2(3)=2.77$, $P=.43$).</p> <p>23.1% of telehealth vs 14.3% of in-person completers were unlikely to use services again ($\chi^2(4)=3.72$, $P=.45$).</p> <p>KQ3: No differences in post-treatment rates of PTSD diagnoses between telehealth and in-person groups: 46% vs 40% no longer had diagnosis of PTSD, 27% vs 30% had subclinical symptoms, 27% vs 30% had diagnosis, $\chi^2(2)=0.62$, $P=.73$</p>

Author Year N	Study Design Sample Size Location	Patient Characteristics	Intervention vs Comparator Follow-Up	Setting	Overall Results (Stratified by Key Question)
Ziemba 2014 ²³	RCT N=18 Georgia	OEF/OIF Veterans with PTSD IE criteria: Diagnosis of PTSD or suspicion of PTSD, stable medication regimen Age: NR Sex: 90% male Race: 79% black Rurality: NR	Video vs in-person cognitive behavioral therapy delivered by a licensed clinical therapist (10 sessions). Follow-up: 15 weeks	Video location: Civilian community clinic In-person location: Civilian community clinic	<p>KQ1: Overall satisfaction scores were similar between telehealth and in-person groups: 98.1% vs 92.1%, $P>.05$</p> <p>KQ3: Both telehealth and in-person groups improved on physical health (SF-36 physical health) 4.4% vs 4.5% improvement ($P=NR$) and mental health (SF-36 mental health) 45.8% vs 37.9% improvement ($P=NR$).</p>

Abbreviations: IE = Inclusion/Exclusion criteria; RCT = randomized clinical trial; PTSD = post-traumatic stress disorder; VA = Veterans Affairs; NR = not reported; DSM-IV = Diagnostic and Statistical Manual of Mental Disorders 4; VAMC = Veterans Affairs Medical Center; CPOSS = Charleston Psychiatric Outpatient Satisfaction Scale; ICER = incremental cost-effectiveness ratio; QoL = Quality of Life; SF-36 = 36-item Short Form; QALY = Quality-adjusted Life Year; BDI = Beck Depression Inventory; GDS = Geriatric Depression Scale; SCID = Structured Clinical Interview for DSM-IV; CBT = Cognitive Behavioral Therapy; ACT = Acceptance and Commitment Therapy; BATD = Behavioral Activation Treatment for Depression; CSQ = Client Satisfaction Questionnaire; MH = mental health; MDD = major depressive disorder; CBOC = Community Based Outpatient Clinics; NS = not significant; OEF/OIF = Operation Enduring Freedom/Operation Iraqi Freedom

*Included primary studies in which data abstraction was not performed because relevant information was already reported in Turgoose 2018¹; Frueh 2007a²⁴; Frueh 2007b²⁵; Gros 2018²⁶; Hernandez-Tejada 2014²⁷; Morland 2004²⁸; Morland 2011²⁹; Wierwille 2016³⁰

QUALITY ASSESSMENT OF INCLUDED SYSTEMATIC REVIEWS

Author Year	Study eligibility criteria (high, unclear, low)	Identification and selection of studies (high, unclear, low)	Data collection and study appraisal (high, unclear, low)	Synthesis and findings (high, unclear, low)	Overall risk of bias (high, unclear, low)
Turgoose 2018 ¹	Low No limitations on comparators or outcomes. No information on whether protocol was created, but criteria are open-ended so there is limited potential for bias.	Low Search strategy is appropriate and no limits on date. Limited to English-language full-text articles. No grey literature or reference searches.	Unclear No description of data abstraction process and authors only report main findings with no effect sizes or <i>P</i> -values. Only info on included study design is that 15/18 of experimental studies had control group.	Unclear Narrative analysis appropriate for goal of "lessons learned" - however, QA assessments could have been incorporated into the findings.	Unclear For the goal of providing "lessons learned", the study selection and narrative analyses were appropriate. However, authors did not provide key pieces of information on processes (<i>ie</i> , Was a protocol created?; How was data extraction completed?), and did not incorporate QA findings into synthesis.

QUALITY ASSESSMENT OF INCLUDED PRIMARY STUDIES

Quality Assessment of Observational Studies

Author Year	Risk of selection bias? (high, unclear, low)	Risk of performance bias? (high, medium, low)	Risk of attrition bias? (high, medium, low)	Risk of detection bias? (high, medium, low)	Overall risk of bias (high, unclear, low)
Litwack 2014 ²	High Participants were recruited from two different groups (an internal participant recruitment database or from group psychotherapy from a local clinic). Those in psychotherapy likely already have a diagnosis so these are not new cases.	High No control for people currently in treatment vs those not in treatment.	Low Only 1/30 participants were excluded from analysis and all participants completed all assessments.	Unclear Unknown if telehealth or in-person assessments were blinded to results.	High
Shore 2007a ³ , Shore 2007b ⁴ , Shore 2008 ⁵	Unclear Randomization procedure not described, but groups similar at baseline.	Unclear Crossover study design. The time interval between assessments could have introduced symptom changes affecting the reliability.	Low Attrition was 12%, did not differ between groups.	Unclear Cannot mask patients or care providers. Unclear if outcome assessors masked.	Unclear

Author Year	Risk of selection bias? (high, unclear, low)	Risk of performance bias? (high, medium, low)	Risk of attrition bias? (high, medium, low)	Risk of detection bias? (high, medium, low)	Overall risk of bias (high, unclear, low)
Shores 2004 ⁶	Unclear All patients in Veteran home care meeting criteria. Patients randomized to which diagnoses to get first, but demographics between groups not presented.	Low No other diagnoses or interventions ongoing.	Low All patients received both examinations.	Low Clinicians blinded to clinical examination score and other diagnosis.	Unclear
Tuerk 2010 ⁷	High Only patients in rural areas were offered placement in the telehealth group. Selection was determined by patient preference.	Unclear Not reported	Unclear 10% of in-person group lost to follow-up, attrition not reported for video group.	Unclear Not able to blind to assessment modality.	High

Quality Assessment of RCTs

Author Year	Risk of selection bias? (high, unclear, low)	Risk of performance bias? (high, medium, low)	Risk of attrition bias? (high, medium, low)	Risk of detection bias? (high, medium, low)	Overall risk of bias (high, unclear, low)
Egede 2015, ⁸ Egede 2016, ⁹ Egede 2017, ¹⁰ Egede 2018 ¹¹	Low Computerized randomization with allocation concealment.	Low 90% fidelity by providers, and 80% of patients completed all sessions.	Low 15-17% attrition, imputed missing data, and no differences in outcomes between missing vs not missing.	Low Cannot mask patients or care providers. Outcome assessors masked.	Low
Glassman 2017, ¹² Morland 2014, ¹³ Morland 2015 ¹⁴	Unclear Block randomization by war era for men, unclear how women were randomized. No significant differences between groups at baseline.	Unclear 75%-79% attended 10/12 sessions.	Unclear Attrition was 28%-33% at 6 months, did not differ between groups.	Low Cannot mask patients or care providers. Outcome assessors masked.	Unclear



Author Year	Risk of selection bias? (high, unclear, low)	Risk of performance bias? (high, medium, low)	Risk of attrition bias? (high, medium, low)	Risk of detection bias? (high, medium, low)	Overall risk of bias (high, unclear, low)
Greene 2010, ¹⁵ Morland 2010, ¹⁶ Morland 2013 ¹⁷	Unclear Randomization procedure not described, allocation concealed.	Low 90% completion rate.	Unclear 11-20% attrition at 3 months, 20-33% attrition at 6 months. ITT analysis conducted.	Unclear Cannot mask patients or care providers. Outcome assessors not delivering care at that facility, but unclear if masked.	Unclear
Herbert 2017 ¹⁸	Low Randomization by study statistician, allocation concealed. No significant group demographic differences at baseline.	Unclear Adherence not reported.	Unclear 28% attrition in telehealth vs 14% in-person. ITT analysis conducted.	Low Cannot mask patients or care providers. Outcome assessors masked.	Unclear
Luxton 2016, ¹⁹ Bounthavong 2018 ²⁰	Low Computer randomization, unclear allocation concealment, no differences in baseline characteristics.	Unclear 50-85% completed treatment, no differences in completion between intervention groups.	Unclear No differences between groups, ITT analysis, total attrition 32%.	Low Cannot mask patients or care providers. Outcome assessors masked.	Unclear
Ruskin 2004 ²¹	Unclear Utilized a block randomization procedure based on age and depression severity. No significant differences between groups at baseline.	Low One participant crossed over from the telehealth to the control group due to technical difficulties.	Unclear Attrition from 27% to 30% between groups. Time x group effects analysis that used last observation carried forward.	Unclear Cannot mask patients or care providers. Unclear if outcome assessors masked.	Unclear
Yuen 2015 ²²	Unclear Block randomization procedure based on race. No significant differences between groups at baseline.	Unclear Not reported	Unclear Attrition was 30%, did not significantly differ between groups. Missing data for 2% to 19% depending on outcome, but no differences between participants missing vs not missing data.	Unclear Cannot mask patients or care providers. Unclear if outcome assessors masked.	Unclear

Author Year	Risk of selection bias? (high, unclear, low)	Risk of performance bias? (high, medium, low)	Risk of attrition bias? (high, medium, low)	Risk of detection bias? (high, medium, low)	Overall risk of bias (high, unclear, low)
Ziamba 2014 ²³	Unclear Computerized randomization, but unclear if allocation was concealed.	Unclear 72% completed all assessments in the specified time frame.	Unclear Not reported.	Low Cannot mask patients or care providers. Outcome assessors masked.	Unclear

*Included primary studies in which quality assessment was not performed because relevant information was already reported in Turgoose 2018¹; Frueh 2007a²⁴; Frueh 2007b²⁵; Gros 2018²⁶; Hernandez-Tejada 2014²⁷; Morland 2004²⁸; Morland 2011²⁹; Wierwille 2016³⁰

APPENDIX D. ONGOING STUDIES

Principle Investigator	Identifier	Title	Description	Status/Timeframe
Alejandro Interian, PhD VA New Jersey Health Care System	NCT02475954	Telehealth Cognitive Behavioral Therapy for Depression in Parkinson's Disease (PD)	The proposed study will be the first to explore a novel and innovative, PD-informed psychotherapy package for depressed Veterans with PD and their Caregivers, delivered through video-to-home telehealth.	Status: Recruiting Estimated Completion Date: June 30, 2020
Amanda K. Gilmore Department of Psychiatry and Behavioral Sciences, Medical University of South Carolina	W81XWH-14-1-0264	"Do you expect me to receive post-traumatic stress disorder (PTSD) care in a setting where most of the other patients remind me of the perpetrator?": Home-based telehealth to address barriers to care unique to military sexual trauma and VA hospitals	A Department of Defense-funded project designed to compare the feasibility and efficacy of delivering prolonged exposure (PE) for PTSD in-person versus via home-based telehealth for female Veterans with military sexual trauma.	Status: NR Estimated Completion Date: NR
Leslie Morland, Psy.D. VA San Diego Healthcare System	NCT03110302	In-Home Exposure Therapy for Veterans With (PTSD)	The main study goal is to compare PE conducted in three different ways: (1) PE that is office-based (OB; Veterans come to a VA clinic and meet with a therapist via telehealth, using videoconferencing technology), (2) PE delivered via home-based telehealth (HBT; Veterans stay at home and meet with the therapist via telehealth, using videoconferencing technology), and (3) PE delivered in home, in person (IHIP; the therapist goes to the Veterans' homes to provide the psychotherapy).	Status: Not recruiting Estimated Completion Date: June 2017 (No results posted)
Marc I. Rosen, MD VA Connecticut Healthcare System West Haven Campus	NCT03566459	Medication-Assisted Treatment (MAT) for Opioid Use Disorders (OUDs)	The program involves increasing prescribing rates of MAT for OUD in community based outpatient clinics using telehealth.	Status: Recruiting Estimated Completion Date: March 31, 2019

Principle Investigator	Identifier	Title	Description	Status/Timeframe
Richard R. Owen, MD Central Arkansas Veterans Healthcare System	NCT02713217	Implementing a Blended Care Model That Integrates Mental Healthcare and Primary Care Using Telehealth and Care Management for Patients With Depression or Alcohol Use Disorder in Small Primary Care Clinics (Tele-PCMHI)	The goal of this proposed project is to implement a "blended" combination of integrated care models that have been adapted for smaller CBOCs using telehealth technologies, and evaluate the acceptability and effectiveness of the blended, telehealth-based, integrated care model.	Status: Invitation only Estimated Completion Date: February 1, 2021
Samuel Muir Swinburne University of Technology	CRD42018107103	Barriers and facilitators of videoconferencing psychotherapy implementation in military health care environments: a systematic review	The main objective of this review is to synthesize existing research investigating factors identified by practitioners and staff that affect the capacity of military health care providers to implement videoconferencing psychotherapy (VCP) services. All research designs will be eligible for inclusion. However, studies must include the perspectives, experiences, or attitudes of mental health practitioners involved in VCP implementation efforts.	Status: In-progress Estimated Completion Date: October 31, 2018 (No results posted)

APPENDIX E. PEER REVIEW COMMENT TABLE

Comment #	Reviewer #	Comment	Author Response
<i>Are the objectives, scope, and methods for this review clearly described?</i>			
1	1	Yes	None
2	2	Yes	None
<i>Is there any indication of bias in our synthesis of the evidence?</i>			
3	1	No	None
4	2	No	None
<i>Are there any <u>published</u> or <u>unpublished</u> studies that we may have overlooked?</i>			
5	1	No	None
6	2	No	None
<i>Additional suggestions or comments can be provided below. If applicable, please indicate the page and line numbers from the draft report.</i>			
7	1	Overall the report is good and clear. The comments below are mostly minor suggestions.	None.
8	1	Executive Summary Key Points: While I know you want to keep the key points short, I would suggest writing out MDD the first time as it is now as well known of an abbreviation as PTSD.	Wrote out “Major Depressive Disorder” and “Post-traumatic Stress Disorder” in Key Findings.
9	1	The last bullet is not clear. I would suggest revising the end of the sentence by replacing “use “ with impact ...as well as a lack. of information on the impact of video in both mental health and primary care on important access outcomes, including wait times, frequency of use, and provider productivity.	Changed the last bullet of the Key Points to say “...as well as a lack of information on the impact of video in both mental health and primary care...”
10	1	Executive Summary Text p. 1 line 48. Suggest Among the 30 included article rather than ‘our’.	Changed p. 1, line 48 to “Among the 30 included articles...”
11	1	Lines 52-53: I suggest saying how many articles address Dx and pain. You can say fewer and put the numbers in (), but there is no reason to be specific in the first part of the paragraph and vague in the rest.	Changed p. 1, lines 52-53 to “Five articles examined diagnosis...and one examined treatment of chronic pain.”
12	1	p. 2 line 8-9. Is it the access outcomes that are direct or the examination? Saying ‘that directly examined access outcomes such as...might read better, but you may want to keep it depending on your	Changed p. 2, line 8-9 to “...that directly examined the access outcomes of interest...”

		meaning.	
13	1	Table 1 and Overall structure Given that there is little or no evidence on access outcomes, would it be possible to separate KQ1 in to 1a process and 1b access? This would make it clearer that the SOEs are for Process and there is a lack of evidence for Access. When they are combined in the table this is not evident	<i>Table 1 and overall structure: Added a sentence to each condition/intervention row under KQ1 to indicate no studies examined access outcomes.</i>
14	1	Table 1 The wording of the statement varies...some say on outcomes (On quality of life), some 'in-terms of' (in terms of quality of life). It would help to make them the same...so the reader is not looking for a reason for the difference.	<i>Table 1: Changed "in terms of" to "on."</i>
15	1	Full Text In the sentence that opens each section, it might be helpful to we identified # articles either reporting the results of or about # studies. Using 'of' does not read as well.	<i>Full text: In each section, deleted the phrases about the number of articles.</i>
16	1	p. 4 line 19, suggest changing 'those 'to Veterans so it is clear it is the Veterans not the services or efforts in rural locations.	<i>P. 4, line 19: Changed to "...particularly for Veterans living in rural and remote locations..."</i>
17	2	None at this time.	<i>None</i>

REFERENCES

1. Turgoose D, Ashwick R, Murphy D. Systematic review of lessons learned from delivering tele-therapy to veterans with post-traumatic stress disorder. *J Telemed Telecare*. 2018;24(9):575-585.
2. Litwack SD, Jackson CE, Chen M, et al. Validation of the use of video teleconferencing technology in the assessment of PTSD. *Psychol Serv*. 2014;11(3):290-294.
3. Shore JH, Savin D, Orton H, Beals J, Manson SM. Diagnostic reliability of telepsychiatry in American Indian veterans. *Am J Psychiatry*. 2007;164(1):115-118.
4. Shore JH, Brooks E, Savin DM, Manson SM, Libby AM. An economic evaluation of telehealth data collection with rural populations. *Psychiatr Serv*. 2007;58(6):830-835.
5. Shore JH, Brooks E, Savin D, Orton H, Grigsby J, Manson SM. Acceptability of telepsychiatry in American Indians. *Telemed J E Health*. 2008;14(5):461-466.
6. Shores MM, Ryan-Dykes P, Williams RM, et al. Identifying undiagnosed dementia in residential care veterans: comparing telemedicine to in-person clinical examination. *Int J Geriatr Psychiatry*. 2004;19(2):101-108.
7. Tuerk PW, Yoder M, Ruggiero KJ, Gros DF, Acierno R. A pilot study of prolonged exposure therapy for posttraumatic stress disorder delivered via telehealth technology. *J Trauma Stress*. 2010;23(1):116-123.
8. Egede LE, Acierno R, Knapp RG, et al. Psychotherapy for depression in older veterans via telemedicine: a randomised, open-label, non-inferiority trial. *Lancet Psychiatry*. 2015;2(8):693-701.
9. Egede LE, Acierno R, Knapp RG, Walker RJ, Payne EH, Frueh BC. Psychotherapy for depression in older veterans via telemedicine: effect on quality of life, satisfaction, treatment credibility, and service delivery perception. *J Clin Psychiatry*. 2016;77(12):1704-1711.
10. Egede LE, Gebregziabher M, Walker RJ, Payne EH, Acierno R, Frueh BC. Trajectory of cost overtime after psychotherapy for depression in older Veterans via telemedicine. *J Affect Disord*. 2017;207:157-162.
11. Egede LE, Dismuke CE, Walker RJ, Acierno R, Frueh BC. Cost-effectiveness of behavioral activation for depression in older adult veterans: in-person care versus telehealth. *J Clin Psychiatry*. 2018;79(5):28.
12. Glassman LH, Mackintosh MA, Talkovsky A, et al. Quality of life following treatment for PTSD: comparison of videoconferencing and in-person modalities. *J Telemed Telecare*. 2017.
13. Morland LA, Mackintosh MA, Greene CJ, et al. Cognitive processing therapy for posttraumatic stress disorder delivered to rural veterans via telemental health: a randomized noninferiority clinical trial. *J Clin Psychiatry*. 2014;75(5):470-476.
14. Morland LA, Mackintosh MA, Rosen CS, et al. Telemedicine versus in-person delivery of cognitive processing therapy for women with posttraumatic stress disorder: a randomized noninferiority trial. *Depress Anxiety*. 2015;32(11):811-820.
15. Greene CJ, Morland LA, Macdonald A, Frueh BC, Grubbs KM, Rosen CS. How does tele-mental health affect group therapy process? Secondary analysis of a noninferiority trial. *J Consult Clin Psychol*. 2010;78(5):746-750.
16. Morland LA, Greene CJ, Rosen CS, et al. Telemedicine for anger management therapy in a rural population of combat veterans with posttraumatic stress disorder: a randomized noninferiority trial. *J Clin Psychiatry*. 2010;71(7):855-863.

17. Morland LA, Raab M, Mackintosh MA, et al. Telemedicine: a cost-reducing means of delivering psychotherapy to rural combat veterans with PTSD. *Telemed J E Health*. 2013;19(10):754-759.
18. Herbert MS, Afari N, Liu L, et al. Telehealth versus in-person acceptance and commitment therapy for chronic pain: a randomized noninferiority trial. *J Pain*. 2017;18(2):200-211.
19. Luxton DD, Pruitt LD, Wagner A, Smolenski DJ, Jenkins-Guarnieri MA, Gahm G. Home-based telebehavioral health for U.S. military personnel and veterans with depression: A randomized controlled trial. *J Consult Clin Psychol*. 2016;84(11):923-934.
20. Bounthavong M, Pruitt LD, Smolenski DJ, Gahm GA, Bansal A, Hansen RN. Economic evaluation of home-based telebehavioural health care compared to in-person treatment delivery for depression. *J Telemed Telecare*. 2018;24(2):84-92.
21. Ruskin PE, Silver-Aylaiian M, Kling MA, et al. Treatment outcomes in depression: comparison of remote treatment through telepsychiatry to in-person treatment. *Am J Psychiatry*. 2004;161(8):1471-1476.
22. Yuen EK, Gros DF, Price M, et al. Randomized controlled trial of home-based telehealth versus in-person prolonged exposure for combat-related PTSD in veterans: preliminary results. *J Clin Psychol*. 2015;71(6):500-512.
23. Ziemba SJ, Bradley NS, Landry LA, Roth CH, Porter LS, Cuyler RN. Posttraumatic stress disorder treatment for Operation Enduring Freedom/Operation Iraqi Freedom combat veterans through a civilian community-based telemedicine network. *Telemed J E Health*. 2014;20(5):446-450.
24. Frueh BC, Monnier J, Yim E, Grubaugh AL, Hamner MB, Knapp RG. A randomized trial of telepsychiatry for post-traumatic stress disorder. *J Telemed Telecare*. 2007;13(3):142-147.
25. Frueh BC, Monnier J, Grubaugh AL, Elhai JD, Yim E, Knapp R. Therapist adherence and competence with manualized cognitive-behavioral therapy for PTSD delivered via videoconferencing technology. *Behav Modif*. 2007;31(6):856-866.
26. Gros DF, Lancaster CL, Lopez CM, Acierno R. Treatment satisfaction of home-based telehealth versus in-person delivery of prolonged exposure for combat-related PTSD in veterans. *J Telemed Telecare*. 2018;24(1):51-55.
27. Hernandez-Tejada MA, Zoller JS, Ruggiero KJ, Kazley AS, Acierno R. Early treatment withdrawal from evidence-based psychotherapy for PTSD: telemedicine and in-person parameters. *Int J Psychiatry Med*. 2014;48(1):33-55.
28. Morland LA, Pierce K, Wong MY. Telemedicine and coping skills groups for Pacific Island veterans with post-traumatic stress disorder: a pilot study. *J Telemed Telecare*. 2004;10(5):286-289.
29. Morland LA, Hynes AK, Mackintosh MA, Resick PA, Chard KM. Group cognitive processing therapy delivered to veterans via telehealth: a pilot cohort. *J Trauma Stress*. 2011;24(4):465-469.
30. Wierwille JL, Pukay-Martin ND, Chard KM, Klump MC. Effectiveness of PTSD telehealth treatment in a VA clinical sample. *Psychol Serv*. 2016;13(4):373-379.