Electronic Results Addendum (ERA): Implementation Support Skills – Findings from a Systematic Integrative Review

Detailed Search Strategy

The following search strategies were used to identify publications for this review:

1. Systematic searches of nine electronic databases (ASSIA, CINAHL, Criminal Justice Abstracts, ERIC, Family and Society Studies Worldwide, Medline, PsycInfo, Scopus, and SocIndex) using a search string that combined the term "implementation" with terminology describing different support behaviors and specific implementation support role labels (S1 in Table ERA1). A key aim of this approach was to filter out literature that was not focused on active implementation support activities and instead centered on e.g. knowledge translation in general. Additionally, research-related search terms (S2 in Table ERA1) were used to limit searches to literature focused on the uptake of evidence, rather than the uptake of e.g. non-evidenced innovations. This search string was tailored to the requirements of the different databases. Table ERA1 displays the search string used with PsycInfo (OVID); all other search strings can be made available upon request to the author. Electronic databases were searched on February 26, 2019. No limitations were defined for publication dates.

Table ERA1: Search String Used with the PsycInfo/OVID Database

#	Searches
S1	(implement* adj3 support) OR (implement* adj3 coach*) OR (implement* adj3 speciali*) OR (implement* adj3 expert*) OR (implement* adj3 team) OR (implement* adj3 facilitat*) OR (implement* adj3 consult*) OR (implement* adj1 train) OR (implement* adj1 educat*) OR (implement* adj1 course) OR (knowledge adj3 broker*) OR (intermediar* adj3 organi$ation) OR purveyor* OR purveyour* OR (technical adj3 assist*).mp
S2	('research finding*' or 'research result*' or 'scientific knowledge' or 'scientific finding*' or 'evidence-informed practice' or 'evidence informed practice' or 'evidence-based practice' or 'evidence based practice' or 'research to practice' or 'research-to-practice' or 'knowledge to action' or 'knowledge-to-action' or 'science-based' or 'science based' OR 'research-based' OR 'research based' or 'science-informed' OR 'science informed or 'research-informed' or 'research informed' OR 'knowing-doing' OR 'knowing doing' OR 'science practice' OR 'science-practice').mp
S3	**S1 AND S2**

2. To ensure that potentially relevant publications commissioned by organizations active in the field of implementation support could be included in the review, searches of 42 different organizational websites were conducted. These websites were selected based on the research teams' knowledge about intermediary and other organizations with an interest in implementation. In searching their websites, the regular website search function and/or subsites clearly labeled as listing e.g. "resources," "publications," "research" or comparable materials were used. Searches of websites (listed in Table ERA2) were conducted between March 18 and April 30, 2019.

3. A targeted call for publications from experts known to the research team as working within the field of implementation support, e.g. as researchers, consultants or in similar roles, was conducted to identify publications under review or in press – and any other relevant article that might not be covered through other searches. Of the 22 experts contacted by email, 17 responded. E-mail exchanges took place in March, April and May 2019.

4. An open call for publications disseminated through a newsletter, a website and social media, all of which were administered by the European Implementation Collaborative (EIC). The newsletter was sent out on March 29, 2019 to 700+ recipients, who were invited to submit resources within four weeks. It was then followed up by multiple reminders posted through the EIC's twitter account.

5. Reference checks of all included studies identified through the above strategies.
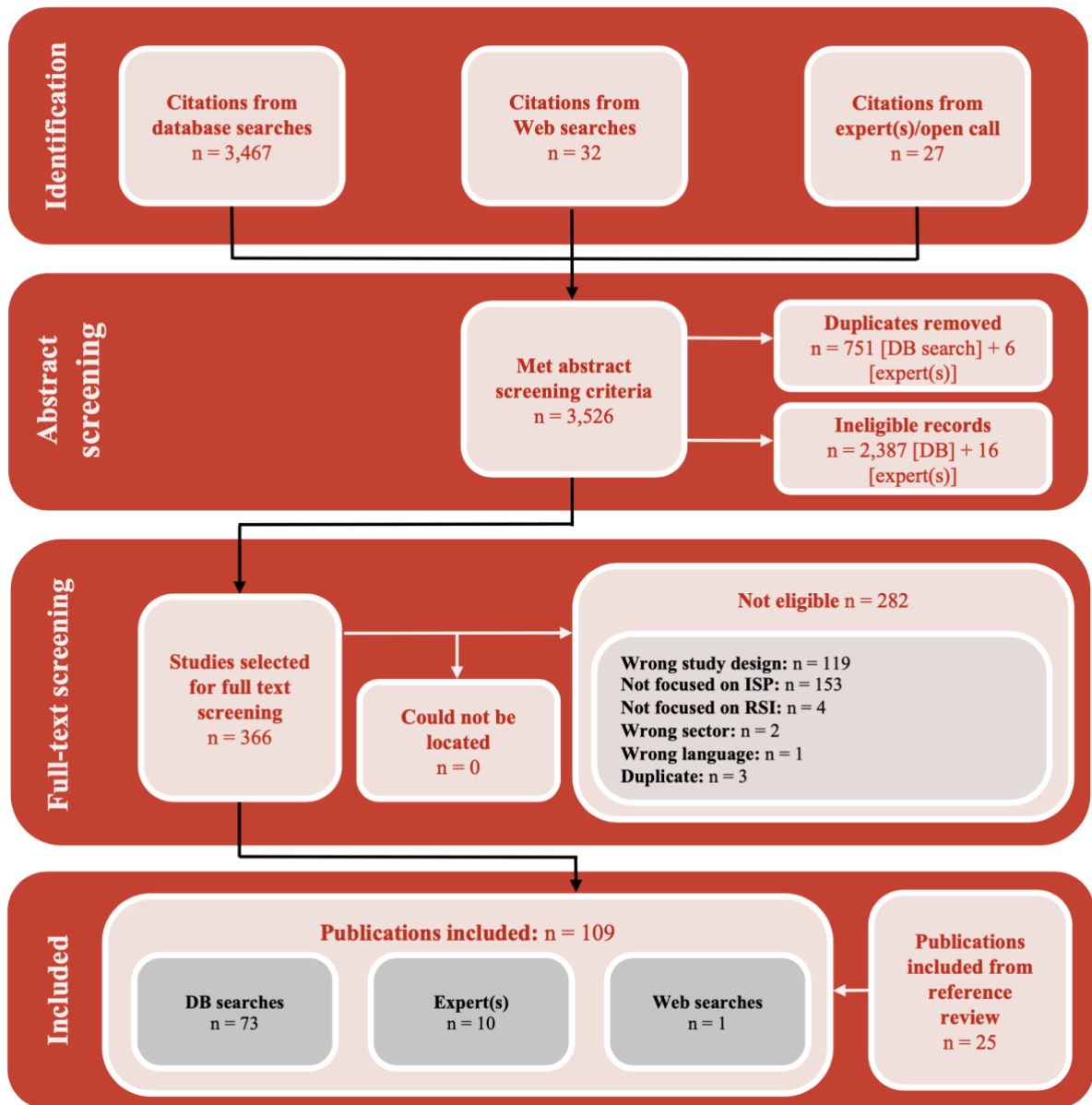
Table ERA2: Websites Searched for Grey Literature

#	Organization (hyperlinked)	Date searched
1	Agency for Healthcare Research and Quality (U.S.)	*18.3.2019*
2	Alliance for Useful Evidence (U.K.)	*18.3.2019*
3	The Annapolis Coalition (U.S.)	*30.4.2019*
4	The Annie E. Casey Foundation (U.S.)	*19.3.2019*
5	The Bridgespan Group (U.S.)	*19.3.2019*
6	The Center for Implementation- Dissemination of Evidence-Based Practices Among States (IDEAS – U.S.)	*10.4.2019*
7	Centre for Effective Services (IRL)	*19.3.2019*
8	Centre for Evidence & Implementation (AUS)	*19.3.2019*
9	Child & Family Evidence Based Practice Consortium (U.S.)	*19.3.2019*
10	The Colebrooke Centre for Evidence and Implementation (U.K.)	*19.3.2019*
11	Consortium for Implementation Science (U.S.)	*25.3.2019*
12	Early Childhood TA Center (U.S.)	*25.3.2019*
13	Education Endowment Foundation (U.K.)	*25.3.2019*
14	EPIS Center (U.S.)	*25.3.2019*
15	European Implementation Collaborative (EU)	*25.3.2019*
16	The Health Foundation (U.K.)	*25.3.2019*
17	Institute of Education Sciences – What Works Clearinghouse (U.S.)	*3.4.2019*
18	iS2 (AUS)	*3.4.2019*
19	The Joanna Briggs Institute (AUS)	*3.4.2019*
20	Judge Baker Children's Centre (U.S.)	*3.4.2019*
21	Mathematica Policy Research (U.S.)	*3.4.2019*
22	mdrc (U.S.)	*10.4.2019*
23	National TA Center for Children's Mental Health (U.S.)	*10.4.2019*
24	The National Implementation Research Network (U.S.)	*10.4.2019*
25	The National Institute for Health and Care Excellence (U.K.)	*10.4.2019*
26	National Institutes of Health (U.S.)	*10.4.2019*
27	National TA Center on Transition (U.S.)	*10.4.2019*
28	Nuffield Foundation (U.K.)	*15.4.2019*
29	Office of the Assistant Secretary for Planning and Evaluation (U.S.)	*15.4.2019*
30	Ontario Centre of Excellence for Child and Youth Mental Health (CAN)	*15.4.2019*
31	The PEW Charitable Trusts (U.S.)	*15.4.2019*
32	Research in Practice (U.K.)	*15.4.2019*
33	The SISEP Center (U.S.)	*15.4.2019*
34	The Social Care Institute for Excellence (SCIE) (U.K.)	*15.4.2019*
35	TAC - Technical Assistance Collaborative (U.S.)	*30.4.2019*
36	TA Center on PBIS (U.S.)	*23.4.2019*
37	The Institute for Innovation and Implementation (U.S.)	*23.4.2019*
38	UK Implementation Society (U.K.)	*23.4.2019*
39	Washington State Institute for Public Policy (U.S.)	*23.4.2019*
40	William T. Grant Foundation (U.S.)	*23.4.2019*
41	The World Bank (INT)	*23.4.2019*
42	The World Health Organization (INT)	*23.4.2019*

Table ERA3: Inclusion and Exclusion Criteria

	INCLUDED	EXCLUDED
Study designs	Any primary study design, including, e.g.: • Randomised, controlled studies • Quasi-experimental studies • Pre-post evaluations • Case studies	• Systematic reviews of any study designs • Theoretical / conceptual studies • Expert commentary • Opinion pieces • Conference proceedings • Books / book chapters • Editorials • Other publications that are / report 'non-studies' • Dissertations / theses
Population	• The target population(s) of the study are implementation specialists.	• The target population(s) of the study are current or future *implementation researchers* or other non-ISPs.
Sectors	• Health care (including mental health) • Social care / social welfare (including child welfare, aged care, labour market services, crime and justice, family services etc.) • Education (including ECE, primary, secondary and high school services)	• IT • Environmental services • Any other service sector not listed in the left column.

Content	• The study focuses on supporting the implementation of a **research-supported program, practice or policy**
	AND
	• the study involves a person or a team or an intermediary organization providing implementation support to others
	AND
	• the study provides information about / conceptualises / assesses implementation know how / skills / capacity
	
	Examples of interventions that could be of relevance:
	
	• Implementation training
	• Implementation coaching
	• Technical assistance
	• Implementation coaching
	• Implementation facilitation
	• Implementation policies
	• Implementation mentorship
		• Studies focused on the specific knowledge, skills, capacities required to implement e.g. specific *clinical interventions*
		  ○ → e.g. a study examining skills required to implement trauma-informed practice would be excluded
		  ○ → a study of a community of practice aimed at building practitioners' capacity to develop domestic violence prevention capacity would be excluded
		  ○ → a study of a 'community of practice' aimed at building practitioners' implementation knowledge / skills would be included
		
		• Studies focused on factors that support successful practice-science / community-university partnerships
		
		• Studies focused on online solutions only (repositories providing electronic implementation resources and nothing else)

Geography	• High income countries • Low / middle income countries	No exclusion based on geography
Languages	• English • German • Danish • Swedish • Norwegian	Any other language not listed

Figure ERA1: Flow of Studies Through the Review Process

Identification

- Citations from database searches
  n = 3,467
- Citations from Web searches
  n = 32
- Citations from expert(s)/open call
  n = 27

Abstract screening

- Met abstract screening criteria
  n = 3,526
  - Duplicates removed
    n = 751 [DB search] + 6 [expert(s)]
  - Ineligible records
    n = 2,387 [DB] + 16 [expert(s)]

Full-text screening

- Studies selected for full text screening
  n = 366
- Could not be located
  n = 0
- Not eligible n = 282
  - Wrong study design: n = 119
  - Not focused on ISP: n = 153
  - Not focused on RSI: n = 4
  - Wrong sector: n = 2
  - Wrong language: n = 1
  - Duplicate: n = 3

Included

- Publications included: n = 109
  - DB searches
    n = 73
  - Expert(s)
    n = 10
  - Web searches
    n = 1
- Publications included from reference review
  n = 25

Table ERA4: Coding Examples

Publication & text excerpt	Code(s) assigned	Code definition (Powell et al., 2015)
Rosella (2018), p. 30: "The KT approach began with the identification of relevant needs and the cultivation of partnerships with decision-makers who agreed to joint engagement in the use of DPoRT and its outputs."	Conduct local needs assessment	Collect and analyze data related to the need for the innovation
Ritchie (2017), p. 5: "In preparation for helping sites implement PC-MHI, the facilitators began engaging clinic leaders and provided information about PC-MHI programs as well as what to expect during the facilitation process."	Identify and prepare champions	Identify and prepare individuals who dedicate themselves to supporting, marketing, and driving through an implementation, overcoming indifference or resistance that the intervention may provoke in an organization
Hurlburt (2014), p.: "Members of the seed team maintain a central liaison role between the EBP developer and other actors at multiple levels within the service system so that issues, decisions, and adaptations can be negotiated during initial experimentation with implementation."	• Promote network weaving • Provide ongoing consultation	• Identify and build on existing high-quality working relationships and networks within and outside the organization, organizational units, teams, etc. to promote information sharing, collaborative problem-solving, and a shared vision/goal related to implementing the innovation • Provide ongoing consultation with one or more experts in the strategies used to support implementing the innovation

Table ERA5: Distribution of Implementation Strategies by ISP Role

Implementation Strategy	Coach (N=8)	Consultant (N=21)	Facilitator (N=22)	Imp. Team (N=4)	Intermediary (N=3)	Knowledge Broker (N=10)	Mix (N=5)	Non-specified (N=5)	Other (N=9)	TA Provider (N=12)	TOTAL (N=99)
Provide consultation/facilitation	6	21	15	3	1	10	5	1	5	7	74
Conduct educational meetings	4	14	6	3	0	7	3	4	5	7	53
Distribute educational materials	3	9	5	0	1	8	5	3	2	3	39
Conduct ongoing training	2	1	7	1	1	3	0	0	3	2	20
Conduct educational outreach visits	3	3	5	0	0	0	1	0	2	3	17
Make training dynamic	1	3	2	0	3	3	0	1	2	2	17
Develop educational materials	0	1	3	1	0	5	2	0	2	3	17
Create a learning collaborative	0	0	6	0	0	2	2	0	0	2	12
Audit and provide feedback	5	11	14	1	1	2	2	2	3	3	44
Develop formal impl. blueprint	1	4	8	1	0	1	1	1	2	6	25
Conduct local needs assessment	1	5	5	1	1	5	1	0	1	1	21
Assess for readiness and identify barriers and facilitators	0	2	6	0	1	2	2	0	2	3	18
Promote network weaving	0	1	6	2	1	5	4	0	1	2	22
Model and simulate change	3	6	3	1	0	3	0	0	0	1	17
Identify and prepare champions	0	2	5	2	0	1	0	1	3	1	15

Org. clinician impl. team meetings	0	2	7	2	0	0	0	0	1	1	13
Tailor strategies	4	7	7	0	2	6	3	1	2	5	37
Promote adaptability	2	2	7	3	0	1	0	1	2	1	19

Table ERA6: Overview of Included RCTs (N=30)

Study	Aim	Method	ISP role	ISP strategies reported	Outcomes			
					Individual / Organization	*Implementation*	*Service*	*Client*
Acolet et al. (2011)	To assess whether an active strategy for the dissemination of neonatal research findings, recommendations and guidelines was more likely to change policy and practice than the passive dissemination of a report, a slide package and a position statement.	Cluster RCT	Other (regional champion)	Audit & feedback; champions; dynamic training; implementation blueprint [N=4]	Opportunity: non-significant	N/A[1]	Timeliness / Safety: mixed	N/A
Beidas et al., 2012	To evaluate the efficacy of three different brief CBT training modalities, and to evaluate the impact of including ongoing consultation after this training on therapist CBT knowledge, skill and adherence and training satisfaction.	RCT	Consultant	Consultation/ facilitation; develop educational materials; dynamic training; educational meetings [N=4]	Capacity: mixed	Fidelity: non-significant; Adherence: significant	N/A	N/A
Bradshaw et al., 2012	To compare student outcomes achieved by PBIS schools that receive (a) traditional training and support in tier 1 implementation from the state and district, and (b) tier 2 training and coaching	Cluster RCT	Coach	Consultation/ facilitation; distribute educational materials; educational meetings; ongoing training [N=4]	Capacity: significant	Fidelity: non-significant	Efficiency: significant	Student achievement: Significant

[1] N/A = not applicable

	from an external tier 2 coach (i.e. PBISplus = intervention condition) with those from PBIS schools that receive traditional training and support in tier 1 implementation from the state and district only (i.e. SWPBIS = comparison/ control condition).							
Brown et al., 2014	To determine whether participation in the Community Development Team (CDT) model improves the rates of program adoption, implementation, and fidelity of Multidimensional Treatment Foster Care (MTFC) in 51 counties (56 sites) in California and Ohio when compared with an individualized implementation condition (IND).	Cluster RCT	Facilitator	Assess readiness; consultation/ facilitation; educational meetings; learning collaborative [N=4]	N/A	Adoption: non-significant; fidelity: non-significant; process: non-significant	N/A	N/A
Calo et al., 2018	To compare the effectiveness of quality improvement coaching when delivered either in-person or based on webinars on improving HPV vaccination coverage.	Cluster RCT	Coach	Audit & feedback; distribute educational materials; educational meetings; implementation blueprint; [N=4]	Capacity: non-significant	Adoption: non-significant; feasibility: non-significant; acceptability: non-significant; costs: mixed	N/A	N/A

Chinman et al., 2017	To evaluate how much a Getting to Outcomes (GTO) guided implementation strategy (training + manuals + implementation support) facilitated the adoption and implementation of the MISSION-Vet intervention targeting (formerly) homeless veterans – when compared with implementation as usual (training + manuals only).	Cluster RCT	TA provider	Audit & feedback; consultation/ facilitation; develop educational materials; distribute educational materials; educational outreach; implementation blueprint; organize meetings; promote adaptability; tailor strategies [N=9]	N/A	Adoption: significant; penetration: significant	N/A	N/A
Chinman et al., 2018	To assess the effectiveness of the GTO Implementation Support Intervention by comparing the outcomes from 15 Boys and Girls Club sites implementing CHOICE (control group), a five-session evidence-based alcohol and drug prevention program, with 14 similar sites implementing CHOICE supported by GTO (intervention group).	Cluster RCT	TA provider	Audit & feedback; educational meetings; implementation blueprint; ongoing training [N=4]	N/A	Fidelity: significant	N/A	Functioning: non-significant
Chung et al., 2015	To examine whether the implementation approach CEP (Community and Engagement Planning) is more effective in (a) generating options for	Cluster RCT	Unlabeled	Educational meetings; educational outreach [N=2]	Opportunity (training participation): Significant	N/A	N/A	N/A

	training depression care quality improvement (DCQI), and (b) increasing mean hours practitioners spend on DCQI training than the implementation approach RS (Resources for Services).							
Dickinson et al., 2014	To compare the influence of three approaches for implementing the Chronic Care Model on changing the practice culture of primary care clinics and improving the quality of their diabetes care: (1) Practice facilitation over 6 months using a reflective adaptive process (RAP); (2) Practice facilitation for up to 18 months using continuous quality improvement (CQI); and (3) Self-directed practice, without facilitation (SD).	Cluster RCT	Facilitator	Audit & feedback; organize meetings [N=2]	Opportunity (culture): Mixed	Adoption: significant (CQI compared with RAP and SD)	N/A	N/A
Eiraldi et al., 2018	To test which of two consultation strategies (Consultation versus Consultation+) used with school counselors resulted in (a) higher treatment content and process fidelity of an intervention aimed at externalizing behaviors in school	Cluster RCT	Consultant	Audit & feedback; consultation/ facilitation; distribute educational materials; dynamic training; educational meetings; model change; tailor strategies [N=7]	N/A	Fidelity: significant	N/A	Wellbeing: non-significant

	children (CPP); and (b) better child outcomes (changes in diagnostic status and impairment).							
Funderburk et al., 2015	To answer the following research question: Does live video consultation improve downstream client outcomes relative to standard phone consultation?	RCT	Consultant	Consultation/ facilitation; model change [N=2]	N/A	N/A	N/A	Functioning: Significant
Glisson et al., 2013	To assess (a) whether the Availability, Responsiveness and Continuity (ARC) organizational intervention improved youth outcomes in community based mental health programs and (b) whether programs with more improved organizational social contexts following the 18-month ARC intervention had better youth outcomes than programs with less improved social contexts.	Cluster RCT	Other (ARC specialist)	Assess readiness; distribute educational materials; educational outreach [N=3]	N/A	N/A	N/A	Wellbeing: Significant
Gustafson et al., 2013	To test the effectiveness of four different quality improvement interventions to reduce patients' waiting time, retention and to increase the number of patients served annually	Cluster RCT	Mix (QI experts + coaches)	Consultation/ facilitation; distribute educational materials; educational outreach; implementation	N/A	Penetration: significant	Timeliness: significant; client/patient centeredness: non-significant	N/A

	across addiction clinics in the U.S.			blueprint; learning collaborative; tailor strategies [N=6]				
Kelly et al., 2000	To compare the effectiveness of 3 dissemination strategies for transferring HIV prevention models from the research arena to community providers of HIV prevention services.	Cluster RCT	Consultant	Consultation/ facilitation; distribute educational materials; educational meetings; tailor strategies [N=4]	N/A	Adoption: significant	N/A	N/A
Kinley et al., 2014	To examine the impact of providing high facilitation (HF) when implementing the Gold Standard Framework for Care Homes (GSFCH) program	Cluster RCT	Facilitator	Educational meetings; model change; ongoing training [N=3]	N/A	Adoption: mixed	Efficiency: significant	Wellbeing: non-significant
Leathers et al., 2016	To investigate the effect of post-training change agent interactions on the use of an evidence-based intervention relative to training as usual with no additional post-training support.	RCT	Consultant	Consultation/ facilitation; dynamic training; educational meetings; distribute educational materials [N=4]	N/A	Adoption: non-significant	N/A	N/A
Lemelin et al., 2011	To test the effectiveness of a tailored multifaceted facilitation intervention to improve preventive care in capitation-based family practices	Cluster RCT	Facilitator	Audit & feedback; develop educational materials; implementation blueprint; promote adaptability; tailor strategies [N=5]	N/A	Adoption: significant	Efficiency: significant	N/A
Meropol et al., 2014	To assess the effectiveness of practice facilitation, i.e. practice-tailored rapid-	Cluster RCT	Facilitator	Audit & feedback; consultation/ facilitation;	N/A	N/A	Efficiency: significant	N/A

	cycle feedback/change strategies, on improving obesity screening/ counseling, lead screening, and dental fluoride varnish application in pediatric preventive services.			distribute educational materials; implementation blueprint; ongoing training; promote adaptability; tailor strategies [N=7]				
Mold et al., 2008	To assess the effectiveness of a multicomponent implementation strategy aimed at increasing the use of three processes (standing orders – reminder/recall systems – wellness visits) shown to have increased the delivery of preventive services through primary practices; to identify contextual barriers to the implementation of these processes; and to measure the impact of these processes on rates of delivery of preventive services	RCT	Facilitator	Audit & feedback; consultation/ facilitation; distribute educational materials; educational outreach [N=4]	N/A	Adoption: significant	Efficiency: mixed	N/A
Mold et al., 2014	To compare the independent and combined effectiveness of Practice facilitation (PF) and local learning collaboratives (LLCs), combined with performance feedback and academic detailing, with	Cluster RCT	Facilitator	Distribute educational materials; implementation blueprint; learning collaborative [N=3]	N/A	Adoption: significant	N/A	N/A

	performance feedback and academic detailing alone on the implementation of the National Heart, Lung and Blood Institute's Asthma Guidelines.							
Murray et al., 2018	To examine whether the initial model of Together facing the Challenge (TFTC) could be improved to increase sustainability and improve implementation	Cluster RCT	Consultant	Consultation/ facilitation; distribute educational materials; educational meetings [N=3]	Opportunity: significant	Fidelity: non-significant	Efficiency: non-significant	N/A
Palinkas et al., 2017	To determine whether use of research evidence (URE) was independently associated with the stage of implementation of Treatment Foster Care Oregon (TFC-O) and the proportion of activities completed at the pre-implementation, implementation and sustainment phases; and whether URE was significantly associated with the QIC strategy used to scale up the EBP – the Community Development Team (CDT)	Cluster RCT	Consultant	Assess readiness; consultation/ facilitation; educational meetings; tailor strategies [N=4]	N/A	Adoption: mixed	N/A	N/A
Parchman et al., 2013	To assess the effectiveness of practice facilitation to improve the organization and delivery of diabetes	Cluster RCT	Facilitator	Audit & feedback; organize meetings; promote adaptability [N=3]	N/A	Adoption: significant	N/A	N/A

	care in small, autonomous primary care practices.							
Peterson et al., 2015	To assess whether a prevention support system (i.e., "enhanced support system") that builds capacity through the provision of technical assistance, best practice guides, and direct consultation can successfully bridge the gap between fall prevention research and the implementation of an evidence-driven, community-based fall prevention program.	Cluster RCT	Mix (Injury Research Centre faculty staff and study team)	Assess readiness; audit & feedback; consultation/ facilitation; distribute educational materials; educational meetings; needs assessment; promote network weaving [N=7]	N/A	N/A	N/A	Functioning: significant
Quanbeck et al., 2018	To pilot test the blended implementation strategy 'systems consultation' (SC) in a small set of primary care clinics to see if the strategy demonstrated feasibility, acceptability, and preliminary effectiveness in improving clinician adherence to opioid-prescribing guidelines and reducing morphine-equivalent daily dose (MEDD) for patients on long-term opioid therapy	RCT	Consultant	Audit & feedback; champions; consultation/ facilitation; educational meetings; educational outreach; needs assessment; organize meetings; promote adaptability; tailor strategies [N=9]	N/A	N/A	Efficiency: Mixed	N/A

Rohrbach et al., 2010	To test the effectiveness of a comprehensive training condition to produce stronger implementation fidelity and immediate treatment outcomes	RCT	Unlabeled	Consultation/ facilitation; educational meetings; distribute educational meetings [N=3]	Capacity: significant	Acceptability: significant, fidelity: significant	N/A	Functioning: significant
Seers et al., 2018	To extend knowledge of facilitation as a process for getting research evidence into practice by testing the effectiveness of and evaluating the contribution that two different models of facilitation can make to implementing evidence-based urinary continence recommendations into practice.	Cluster RCT	Facilitator	Audit & feedback; consultation/ facilitation; develop educational materials; distribute educational materials; educational meetings; implementation blueprint [N=6]	N/A	Adoption: non-significant	N/A	N/A
L. Williams et al., 2016	To assess the effectiveness of quality improvement training plus indicator feedback on deep vein thrombosis (DVT) prophylaxis and dysphagia (swallowing difficulties) screening when compared with indicator feedback alone	Cluster RCT	Coaches in pairs (systems engineer + implementation researcher)	Audit & feedback; consultation/ facilitation; educational meetings; educational outreach [N=4]	N/A	N/A	Efficiency: non-significant	N/A
N. Williams et al., 2017	To examine the cross-level contextual, motivational, and barrier-related mechanisms that explain the effect of ARC (Availability, Responsiveness, and	Cluster RCT	Other (ARC specialist)	Consultation/ facilitation; distribute educational materials; educational outreach [N=3]	N/A	Adoption: significant; feasibility: significant	N/A	N/A

	Continuity implementation support strategy) on clinicians' EBP adoption and use							
Yano et al., 2008	To evaluate the impact of a locally adapted evidence-based quality improvement (EBQI) approach to the implementation of smoking cessation guidelines into routine practice of VA primary care practices	Cluster RCT	Unlabeled	Audit & feedback; champions; consultation/ facilitation; distribute educational materials; educational meetings; implementation blueprint; promote adaptability [N=7]	N/A	Penetration: Significant	N/A	Functioning: non-significant

Table ERA7a: Quality Assessment Questions used with RCTs

Consideration	Questions	Responses
Appropriate implementation intervention development	(1) Has the design of the implementation intervention been informed by appropriate theory or an implementation framework?	Yes / No Please name the theory / framework
	(2) Has the design of the implementation intervention been informed by local empirical evidence?	Yes / No Please describe the empirical evidence
Categorization of implementation strategies	(3) Has a taxonomy been used in describing implementation strategies used in the study, e.g. the ERIC compilation (Powell, Waltz et al., 2015) or the Effective Practice and Organization of Care (EPOC, 2015) taxonomy?	Yes / No Please name the taxonomy
Appropriate outcomes for implementation research	(4) Which outcomes have been reported for this study?	(1) IMPLEMENTATION OUTCOMES: Acceptability; Adoption; Appropriateness; Costs; Feasibility; Fidelity; Penetration; Sustainability (multiple responses possible) (2) SERVICE OUTCOMES (3) CLIENT OUTCOMES
	(5) Have adverse effects of the implementation intervention been considered?	Yes / No

Table ERA7b: Quality Assessment of Included RCTs (N=30)

STUDY	FRAMEWORK/THEORY USE	USE OF EMPIRICAL EVIDENCE	STRATEGY TAXONOMY USE	OUTCOMES ASSESSED		
				Implementation	*Service*	*Client*
Acolet (2011)	NO	From study protocol: insufficient data from a survey assessing the impact of a dissemination package to improve knowledge transfer in the area of care of premature babies in England		NO	Timeliness Safety	NO
Beidas (2012)	NO	NO	NO	Fidelity	NO	NO

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Bradshaw (2012)	PBIS*plus* theory of change model (p.189).			Fidelity	Efficiency	Functioning
Calo (2018)	NO	Previous experience with using the AFIX coaching model that is in focus of this study plus input from health specialists from three different states	NO	Adoption Feasibility Acceptability Costs	NO	NO
Chinman (2017)	Getting to Outcomes + RE-AIM + Consolidated Framework for Implementation Research	NO	NO	Adoption Penetration		
Chinman (2018)	Getting to Outcomes	NO	NO	Fidelity	NO	Functioning
Chung (2015)	NO	NO	NO	NO	NO	NO
Dickinson (2014)	Continuous Quality Improvement theory and reflective adaptive process theory.	NO	NO	Adoption	NO	NO
Eiraldi (2018)	NO	NO	NO	Fidelity	NO	Wellbeing
Funderburk (2015)	NO	NO	NO	NO	NO	Functioning
Glisson (2013)	Organizational culture theory	NO	NO	NO	NO	Functioning
Gustafson (2013)	NO	NO	NO	Penetration	Timeliness Client-Centeredness	NO
Hendricks Brown (2014)	NO	NO	NO	Adoption Fidelity Sustainability Process (SIC)	NO	NO
Kelly (2000)	NO	NO	NO	Adoption	NO	NO
Kinley (2014)	A single and very brief reference to the PARiHS used to explain why high facilitation strategy was used.	NO	NO	Adoption	Efficiency	Wellbeing
Leathers (2016)	Rogers diffusion of innovations theory applied in detail (pp. 4/5)	NO	NO	Adoption	NO	NO
Lemelin (2001)	Refers to a seven-item CQI framework developed by Leininger et al. as guiding facilitation.	NO	NO	Adoption	Efficiency	NO

Meropol (2014)	NO	NO	NO	NO	Efficiency	NO
Mold (2008)	NO	NO	NO	Adoption	NO	NO
Mold (2014)	NO	NO	NO	Adoption	NO	NO
Murray (2018)	NO	NO	NO	Fidelity	NO	Wellbeing
Palinkas (2017)	NO	NO	NO	Adoption	NO	NO
Parchman (2013)	NO. On page 6, the authors highlight the use of theory for intervention development as a strength of the study, but from the remaining text it was unclear what theory might have been used.	NO	NO	Adoption	NO	NO
Peterson (2015)	Interactive Systems Framework + RE-AIM: detailed use with ISF informing study frame and RE-AIM organizing use of measures	NO	NO	NO	NO	Functioning
Quanbeck (2018)	RE-AIM was used to structure outcome measurement	Implementation support strategies developed in collaboration developers of clinical guideline to be implemented locally.	ERIC	Acceptability Feasibility	Efficiency	NO
Rohrbach (2010)	NO	NO	NO	Acceptability Fidelity	NO	Functioning
Seers (2018)	Theories underpinning the two facilitation approaches used in this study, including the PARiHS, have been briefly described in a supplementary file: CQI theory, Theory on org. learning & critical social sciences.	NO	NO	Adoption	NO	NO
Williams, Linda (2016)	NO	NO	NO	NO	Efficiency	NO
Williams, N. (2016)	Org. culture theory and the theory of planned behavior. Also uses Proctor's implementation outcome framework	NO	NO	Adoption Feasibility	NO	NO
Yano (2008)	NO	NO	NO	Penetration	NO	Functioning

Included Publications (N=109)

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