Contents

Appendix A. Methods A-1
Details of Study Selection A-1
Search Strategy A-1
Inclusion and Exclusion Criteria A-27
Study Selection A-30
Data Extraction A-30
Risk of Bias Assessment A-30
Data Synthesis and Analysis A-31
Grading the Strength of the Body of Evidence A-41
Appendix B. Results B-1
Results of Literature Searches B-1
Description of Included Studies B-3
Key Question 1 ..... B-3
Contextual Question 1 ..... B-34
Included Studies B-34
KQ 1 ..... B-34
CQ 1 ..... B-35
Appendix C. Risk of Bias Assessments for Included Studies C-1
Appendix D. Strength of Evidence Assessments D-1
Appendix E. Detailed Findings E-1
Key Question 1. Detailed Evidence Tables E-1
Appendix F. Excluded Studies F-1
Appendix G. Appendix References F-1

Appendix A. Methods

Details of Study Selection

Search Strategy

Our Evidence-based Practice Center (EPC) librarian searched for studies published from January 1, 2010, through October 6, 2023. Database search strings are included in **Table A-1, Table A-2, Table A-3, and Table A-4**. We conducted quality checks to ensure that known studies were identified by the search. We selected 2010 as the starting date for the literature searches because implementation strategies for preventive behavioral and mental health services have evolved significantly over the past decade. These changes were driven by factors such as efforts to integrate preventive mental health services in primary care, the advance of telehealth and digital technologies, and the recognition of the unique needs of underprivileged and diverse populations. Furthermore, in 2010 the Patient Protection and Affordable Care Act was signed into law, which had a major impact on preventive healthcare in the United States. Limiting our search to studies published after 2010 ensures that the captured literature represents the policy, cultural, and socioeconomic contexts of the current healthcare landscape in the United States.

Electronic literature searches will be updated while the draft report is posted for public comment to capture any new publications. Literature identified during the updated search will be assessed by following the same process of review as all other studies considered for inclusion in the report. If any pertinent new literature is identified for inclusion in the report, it will be incorporated before the final submission of the report. We posted a Supplemental Evidence and Data for Systematic Reviews (SEADS) notice on the Effective Health Care Program website for 4 weeks to receive supplemental evidence and data from the public.

To avoid retrieval bias, we conducted supplementary searches in reference lists of landmark studies and relevant reviews, editorials, and commentaries on this topic to look for any relevant citations that might have been missed by electronic searches (**Table A-1, Table A-2, Table A-3, Table A-4**).

Database Search Strings

Table A-1. PubMed, 10/5/2023

Search	Query	Results
#1	"Mental Disorders"[Mesh] OR "Substance-Related Disorders"[Mesh] OR "Mental Health"[Majr] OR "Mental Health Services"[Majr] OR "Community Mental Health Services"[Mesh] OR "School Mental Health Services"[Mesh] OR "Social Behavior Disorders"[Mesh] OR "mental disorder*"[tiab] OR "mental health services"[tiab:~1] OR "substance abuse"[tiab:~1]	1,566,842
#2	"Adjustment Disorders"[tw] OR Anorexia[tw] OR Anorexic*[tw] OR "Antisocial Personality"[tw] OR "behavior disorder*"[tw] OR "behaviour disorder"[tw] OR "behavioral health"[tw] OR "behavioural health"[tw] OR Bipolar[tw] OR "Borderline Personality"[tw] OR "Capgras Syndrome"[tw] OR "Compulsive Personality"[tw] OR "Conversion Disorder"[tw] OR Cyclothymic[tw] OR cyclothymia[tw] OR Delir*[tw] OR "Dependent Personality"[tw] OR ((Disruptive[tw] OR "Impulse Control"[tw] OR impulsive*[tw]) AND ("Conduct Disorder"[tw] OR "Conduct Disorders" OR behavior[tw] OR behaviors[tw] OR behaviour[tw] OR behaviours[tw])) OR dissociative[tw] OR dissociation[tw] OR Dyssomnia*[tw] OR "Emotional disorder"[tw] OR "Emotional disorders"[tw] OR "Emotion Disorder"[tw] OR "Emotion disorders"[tw] OR Exhibitionis*[tw] OR "Factitious Disorders"[tw] OR "Food Addiction"[tw] OR "Gender Dysphoria"[tw] OR "Histrionic Personality"[tw] OR Hypochondriasis[tw] OR hypochondriac*[tw] OR hypochondria[tw] OR Masochis*[tw] OR "Mood Disorders"[tw] OR "mood disorder"[tw] OR Mutism[tw] OR mute[tw] OR mutes[tw] OR "Obsessive-Compulsive Disorder"[tw] OR "Orthorexia Nervosa"[tw] OR "Panic Disorder"[tw] OR "Paranoid Personality"[tw] OR paranoi*[tw] OR "Paraphilic Disorders"[tw] OR Parasomnia*[tw] OR "Passive-Aggressive Personality"[tw] OR "Personality Disorder"[tw] OR "Phobic Disorders"[tw] OR phobia*[tw] OR "Reactive Attachment"[tw] OR (Relationship[tw] AND disturbances[tw]) OR Rumination[tw] OR Sadis*[tw] OR "Schizoid Personality"[tw] OR "Schizotypal Personality"[tw] OR "Sexual and Gender Disorders"[tw] OR "Sleep Wake Disorders"[tw] OR "social anxiety disorder"[tw] OR ("social behavior"[tw] AND disorder[tw]) OR ("social behaviour"[tw] AND disorder[tw]) OR "Somatoform Disorders"[tw] OR Voyeuris*[tw]	535,991
#3	#1 OR #2	1,808,866
#4	Newborn[Mesh] OR Infant[Mesh] OR Preschool Child[Mesh] OR Child[Mesh] OR Adolescent[Mesh] OR adolescen*[tiab] OR boys[tiab] OR child[tiab] OR children*[tiab] OR childhood[tiab] OR girls[tiab] OR infant*[tiab] OR juvenile*[tiab] OR kindergarten*[tiab] OR neonat*[tiab] OR newborn*[tiab] OR pediatric*[tiab] OR paediatric*[tiab] OR "pre-school"[tiab:~1] OR "pre-schooler"[tiab:~1] OR "pre-schoolers"[tiab:~1] OR preschool*[tiab] OR "school-age*"[tiab] OR "school age*"[tiab] OR teen[tiab] OR teens[tiab] OR teenage*[tiab] OR youth*[tiab]	4,793,417
#5	#3 AND #4	470,136
#6	"Anxiety Disorders"[Mesh] OR "Anxiety"[Mesh] OR agoraphobia OR anxiety[ti] OR "generalized anxiety disorder"[tiab:~1] OR mutism[tiab] OR "panic disorder"[tiab:~1] OR phobia*[tiab] OR "separation anxiety"[tiab:~1] OR "social anxiety"[tiab:~1]	214,050

Search	Query	Results
#7	Child[Mesh] OR Adolescent[Mesh] OR adolescen*[tiab] OR boys[tiab] OR child[tiab] OR children*[tiab] OR childhood[tiab] OR girls[tiab] OR juvenile*[tiab] OR pediatric*[tiab] OR paediatric*[tiab] OR teen[tiab] OR teens[tiab] OR teenage*[tiab] OR youth*[tiab]	4,075,902
#8	#6 AND #7	63,227
#9	"Substance-Related Disorders"[Mesh] OR "substance disorder"[tiab:~1] OR "substance disorders"[tiab:~1] OR "substance abuse"[tiab:~1] OR "substance use"[tiab:~1] OR "drug abuse"[tiab:~1] OR "Amphetamine Disorders"[tiab:~1] OR "Amphetamine Disorder"[tiab:~1] OR "Cocaine Disorders"[tiab:~1] OR "Cocaine Disorder"[tiab:~1] OR Inhalant*[tiab] OR Marijuana[tiab] OR "Narcotic-Related Disorders"[tiab:~1] OR "Narcotic-Related Disorder"[tiab:~1] OR "Neonatal Abstinence Syndrome"[tiab:~1] OR "Phencyclidine Abuse"[tiab:~1] OR "Substance Withdrawal Syndrome"[tiab:~1]	364,311
#10	"Tobacco Use"[Mesh] OR "Tobacco, Smokeless"[Mesh] OR "Tobacco Use Disorder"[Mesh] OR "Tobacco Smoking"[Mesh] OR "Tobacco Use Cessation"[Mesh] OR "Tobacco Use Cessation Devices"[Mesh] OR "Tobacco Use"[tiab:~1] OR tobacco[tiab] OR cigarette*[tiab] OR smoking[tiab] OR smoker*[tiab] OR vaping[tiab] OR vape*[tiab]	391,339
#11	"Alcohol-Related Disorders"[Mesh] OR Alcoholics[Mesh] OR "Alcoholism"[Mesh] OR "Alcohol Drinking" [MeSH] OR "alcohol abuse"[tiab:~1] OR "alcohol addiction*"[tiab] OR "alcohol consumption"[tiab:~1] OR "alcohol depend*"[tiab] OR "alcohol misuse"[tiab:~1] OR "alcohol problem*"[tiab] OR "alcohol use"[tiab:~1] OR alcoholism[tiab] OR "alcohol use disorder*"[tiab] OR ((drinking[tiab] OR drinker[tiab] OR drinkers[tiab]) AND alcohol*[tiab]) OR "harmful alcohol*"[tiab] OR "harmful drink*"[tiab] OR "problem drink*"[tiab]	248,770
#12	#9 OR #10 OR #11	792,933
#13	#12 AND #7	171,448
#14	"Depressive Disorder"[MeSH] OR "Depressive Disorder, Major"[MeSH] OR Depression[MeSH] OR depress*[tiab] OR depression[Title/Abstract] OR depressive[tiab] OR depressed[tiab] OR "Dysthymic Disorder"[Mesh] OR dysthymia[tiab] OR dysthymic[tiab] OR "Persistent Depressive Disorder"[tiab:~1] OR "Suicide"[Mesh] OR "Suicide, Attempted"[Mesh] OR "Suicide, Completed"[Mesh] OR "Suicidal Ideation"[Mesh] OR parasuicid*[tiab] OR "self harm"[tiab:~1] OR "Self-Injurious Behavior"[Mesh] OR suicid*[tiab]	708,120
#15	Child[Mesh] OR Adolescent[Mesh] OR adolescen*[tiab] OR boys[tiab] OR child[tiab] OR children*[tiab] OR childhood[tiab] OR girls[tiab] OR pediatric*[tiab] OR paediatric*[tiab] OR teen[tiab] OR teens[tiab] OR teenage*[tiab] OR youth*[tiab]	4,018,293
#16	#14 AND #15	147,959
#17	#5 OR #8 OR #13 OR #16	630,920
#18	"Ask Suicide-Screening Questions"[tiab:~1] OR ASQ[tiab] OR "Columbia-Suicide Severity Rating Scale"[tiab:~1] OR "C-SSRS"[tiab] OR "Patient Safety Screener"[tiab:~1] OR "PSS-3"[tiab] OR "PHQ-2"[tiab] OR "PHQ-9 Modified Teens"[tiab:~2] OR "PHQ-A"[tiab] OR "PHQ-9"[tiab]	8,962
#19	"Alcohol Screening Brief Intervention Youth"[tiab:~2] OR "Brief Screener Alcohol Tobacco other Drugs"[tiab:~3] OR "BSTAD"[tiab] OR "Car Relax Alone Forget Friends Trouble"[tiab:~2] OR CRAFFT[tiab] OR "Screening Brief Intervention"[tiab:~2] OR S2BI[tiab]	1,384
#20	"Pediatric Symptom Checklist"[tiab:~1]	227
#21	#18 OR #19 OR #20	10,563
#22	"Mass Screening"[Mesh] OR "Motivational Interviewing"[Mesh] OR "Risk Assessment"[Mesh] OR "risk assessment"[tiab:~1] OR "risk assess*"[All Fields] OR screen[tiab] OR screening[tiab] OR screened[tiab] OR screens[tiab] OR screenings[tiab] OR "brief intervention"[tiab:~1] OR "brief interventions"[tiab:~1] OR "preventive care"[tiab:~1] OR "preventive intervention"[tiab:~1] OR "preventive interventions"[tiab:~1] OR "preventive behavioral health"[tiab:~1] OR "preventive mental health"[tiab:~1] OR "preventive psychosocial"[tiab:~1] OR "recommended intervention*"[tiab]	1,416,447

Search	Query	Results
#23	"Counseling"[Mesh] OR counseling[tiab] OR counselling[tiab] OR counsel[tiab] OR counseled[tiab] OR counselled[tiab] OR counsels[tiab] OR "motivational interviewing"[tiab:~1]	158,171
#24	#21 OR #22 OR #23	1,553,505
#25	#17 AND #24	65,045
#26	"Community Health Planning"[mesh] OR "Health Plan Implementation"[Mesh] OR "Implementation Science"[Mesh] OR "implementation science"[tiab:~1] OR "implementation strategy"[tiab:~2] OR "implementation strategies"[tiab:~2] OR "implementation research"[tiab:~2] OR "implementation model*"[tiab] OR "implementation framework*"[tiab] OR Implement[ti] OR Implements[ti] OR Implemented[ti] OR Implementation[ti] OR Implement*[ti] OR acceptability[tiab] OR acceptable[tiab] OR Actionable[tiab] OR Actionability[tiab] OR "Adoption"[Mesh] OR adoption[tiab] OR adopt*[title] OR reach[ti] OR access[ti] OR acceptability[ti] OR "Quality Improvement"[Mesh] OR QI[ti] OR "quality improvement"[tiab:~1] OR sustainment[tiab] OR sustainability[tiab] OR planning[ti] OR program*[ti]	860,945
#27	"Diffusion of Innovation"[Mesh] OR diffusion[title] OR dissemination[title]	84,742
#28	#26 OR #27	938,281
#29	#25 AND #28	4,951
#30	"Bright Futures"[tiab:~1]	96
#31	#29 OR #30	5,044
#32	#29 OR #30 Filters: from 2010 - 2023	3,493
#33	#29 OR #30 Filters: English, from 2010 - 2023	3,427
#34	(animals[mh:noexp] NOT humans[mh:noexp]) OR (bovine[tiab] OR canine[tiab] OR capra[tiab] OR cat[tiab] OR cats[tiab] OR cattle[tiab] OR cow[tiab] OR cows[tiab] OR dog[tiab] OR dogs[tiab] OR equine[tiab] OR ewe[tiab] OR ewes[tiab] OR feline[tiab] OR goat[tiab] OR goats[tiab] OR hamster*[tiab] OR horse[tiab] OR horses[tiab] OR invertebrate[tiab] OR invertebrates[tiab] OR macaque[tiab] OR macaques[tiab] OR mare[tiab] OR mares[tiab] OR mice[tiab] OR monkey[tiab] OR monkeys[tiab] OR mouse[tiab] OR murine[tiab] OR nonhuman[tiab] OR non-human[tiab] OR ovine[tiab] OR pig[tiab] OR pigs[tiab] OR porcine[tiab] OR primate[tiab] OR primates[tiab] OR rabbit[tiab] OR rabbits[tiab] OR rat[tiab] OR rats[tiab] OR rattus[tiab] OR rhesus[tiab] OR rodent*[tiab] OR sheep[tiab] OR simian[tiab] OR sow[tiab] OR sows[tiab] OR vertebrate[tiab] OR vertebrates[tiab] OR whale*[tiab] OR zebrafish[tiab])	6,545,037
#35	#33 NOT #34	3,413

#36	afghanistan[Mesh:NoExp] OR africa[Mesh:NoExp] OR "africa, northern"[Mesh:NoExp] OR "africa, central"[Mesh:NoExp] OR "africa, eastern"[Mesh:NoExp] OR "africa south of the sahara"[Mesh:NoExp] OR "africa, southern"[Mesh:NoExp] OR "africa, western"[Mesh:NoExp] OR albania[Mesh:NoExp] OR algeria[Mesh:NoExp] OR andorra[Mesh:NoExp] OR angola[Mesh:NoExp] OR "antigua and barbuda"[Mesh:NoExp] OR argentina[Mesh:NoExp] OR armenia[Mesh:NoExp] OR azerbaijan[Mesh:NoExp] OR bahamas[Mesh:NoExp] OR bahrain[Mesh:NoExp] OR bangladesh[Mesh:NoExp] OR barbados[Mesh:NoExp] OR belize[Mesh:NoExp] OR benin[Mesh:NoExp] OR bhutan[Mesh:NoExp] OR bolivia[Mesh:NoExp] OR borneo[Mesh:NoExp] OR "bosnia and herzegovina"[Mesh:NoExp] OR botswana[Mesh:NoExp] OR brazil[Mesh:NoExp] OR brunei[Mesh:NoExp] OR bulgaria[Mesh:NoExp] OR "burkina faso"[Mesh:NoExp] OR burundi[Mesh:NoExp] OR "cabo verde"[Mesh:NoExp] OR cambodia[Mesh:NoExp] OR cameroon[Mesh:NoExp] OR "central african republic"[Mesh:NoExp] OR chad[Mesh:NoExp] OR china[Mesh] OR comoros[Mesh:NoExp] OR congo[Mesh:NoExp] OR croatia[Mesh:NoExp] OR cuba[Mesh:NoExp] OR "democratic republic of the congo"[Mesh:NoExp] OR cyprus[Mesh:NoExp] OR djibouti[Mesh:NoExp] OR dominica[Mesh:NoExp] OR "dominican republic"[Mesh:NoExp] OR ecuador[Mesh:NoExp] OR egypt[Mesh:NoExp] OR "el salvador"[Mesh:NoExp] OR "equatorial guinea"[Mesh:NoExp] OR eritrea[Mesh:NoExp] OR eswatini[Mesh:NoExp] OR ethiopia[Mesh:NoExp] OR fiji[Mesh:NoExp] OR gabon[Mesh:NoExp] OR gambia[Mesh:NoExp] OR "georgia (republic)"[Mesh:NoExp] OR ghana[Mesh:NoExp] OR grenada[Mesh:NoExp] OR guatemala[Mesh:NoExp] OR guinea[Mesh:NoExp] OR guinea-bissau[Mesh:NoExp] OR guyana[Mesh:NoExp] OR haiti[Mesh:NoExp] OR honduras[Mesh:NoExp] OR "independent state of samoa"[Mesh:NoExp] OR india[Mesh] OR "indian ocean islands"[Mesh:NoExp] OR indochina[Mesh:NoExp] OR indonesia[Mesh:NoExp] OR iran[Mesh:NoExp] OR iraq[Mesh:NoExp] OR jamaica[Mesh:NoExp] OR jordan[Mesh:NoExp] OR kazakhstan[Mesh:NoExp] OR kenya[Mesh:NoExp] OR kosovo[Mesh:NoExp] OR kuwait[Mesh:NoExp] OR kyrgyzstan[Mesh:NoExp] OR laos[Mesh:NoExp] OR lebanon[Mesh:NoExp] OR liechtenstein[Mesh:NoExp] OR lesotho[Mesh:NoExp] OR liberia[Mesh:NoExp] OR libya[Mesh:NoExp] OR madagascar[Mesh:NoExp] OR malaysia[Mesh:NoExp] OR malawi[Mesh:NoExp] OR mali[Mesh:NoExp] OR malta[Mesh:NoExp] OR mauritania[Mesh:NoExp] OR mauritius[Mesh:NoExp] OR "mekong valley"[Mesh:NoExp] OR melanesia[Mesh:NoExp] OR micronesia[Mesh:NoExp] OR monaco[Mesh:NoExp] OR mongolia[Mesh:NoExp] OR montenegro[Mesh:NoExp] OR morocco[Mesh:NoExp] OR mozambique[Mesh:NoExp] OR myanmar[Mesh:NoExp] OR namibia[Mesh:NoExp] OR nepal[Mesh:NoExp] OR nicaragua[Mesh:NoExp] OR niger[Mesh:NoExp] OR nigeria[Mesh:NoExp] OR oman[Mesh:NoExp] OR pakistan[Mesh:NoExp] OR palau[Mesh:NoExp] OR panama[Mesh] OR "papua new guinea"[Mesh:NoExp] OR paraguay[Mesh:NoExp] OR peru[Mesh:NoExp] OR philippines[Mesh:NoExp] OR qatar[Mesh:NoExp] OR "republic of belarus"[Mesh:NoExp] OR "republic of north macedonia"[Mesh:NoExp] OR romania[Mesh:NoExp] OR russia[Mesh] OR rwanda[Mesh:NoExp] OR "saint kitts and nevis"[Mesh:NoExp] OR "saint lucia"[Mesh:NoExp] OR "saint vincent and the grenadines"[Mesh:NoExp] OR "sao tome and principe"[Mesh:NoExp] OR "saudi arabia"[Mesh:NoExp] OR serbia[Mesh:NoExp] OR "sierra leone"[Mesh:NoExp] OR senegal[Mesh:NoExp] OR seychelles[Mesh:NoExp] OR singapore[Mesh:NoExp] OR somalia[Mesh:NoExp] OR "south sudan"[Mesh:NoExp] OR "sri lanka"[Mesh:NoExp] OR sudan[Mesh:NoExp] OR suriname[Mesh:NoExp] OR syria[Mesh:NoExp] OR taiwan[Mesh:NoExp] OR tajikistan[Mesh:NoExp] OR tanzania[Mesh:NoExp] OR thailand[Mesh:NoExp] OR timor-leste[Mesh:NoExp] OR togo[Mesh:NoExp] OR tonga[Mesh:NoExp] OR "trinidad and tobago"[Mesh:NoExp] OR tunisia[Mesh:NoExp] OR turkmenistan[Mesh:NoExp] OR uganda[Mesh:NoExp] OR ukraine[Mesh:NoExp] OR "united arab emirates"[Mesh:NoExp] OR uruguay[Mesh:NoExp] OR uzbekistan[Mesh:NoExp] OR vanuatu[Mesh:NoExp] OR venezuela[Mesh:NoExp] OR vietnam[Mesh:NoExp] OR "west indies"[Mesh:NoExp] OR yemen[Mesh:NoExp] OR zambia[Mesh:NoExp] OR zimbabwe[Mesh:NoExp]	1,256,271

Search	Query	Results
#37	"Organisation for Economic Co-Operation and Development"[Mesh:NoExp] OR "European Union"[Mesh:NoExp] OR "Developed Countries"[Mesh:NoExp] OR australasia[Mesh:NoExp] OR australia[Mesh] OR austria[Mesh:NoExp] OR "baltic states"[Mesh:NoExp] OR belgium[Mesh:NoExp] OR canada[Mesh] OR chile[Mesh:NoExp] OR colombia[Mesh:NoExp] OR "costa rica"[Mesh:NoExp] OR "czech republic"[Mesh:NoExp] OR denmark[Mesh] OR estonia[Mesh:NoExp] OR europe[Mesh:NoExp] OR finland[Mesh:NoExp] OR france[Mesh] OR germany[Mesh] OR greece[Mesh:NoExp] OR hungary[Mesh:NoExp] OR iceland[Mesh:NoExp] OR ireland[Mesh:NoExp] OR israel[Mesh:NoExp] OR italy[Mesh] OR japan[Mesh] OR korea[Mesh:NoExp] OR latvia[Mesh:NoExp] OR lithuania[Mesh:NoExp] OR luxembourg[Mesh:NoExp] OR mexico[Mesh:NoExp] OR netherlands[Mesh:NoExp] OR "new zealand"[Mesh:NoExp] OR "north america"[Mesh:NoExp] OR norway[Mesh] OR poland[Mesh:NoExp] OR portugal[Mesh:NoExp] OR "republic of korea"[Mesh] OR "scandinavian and nordic countries"[Mesh:NoExp] OR slovakia[Mesh:NoExp] OR slovenia[Mesh:NoExp] OR spain[Mesh:NoExp] OR sweden[Mesh:NoExp] OR switzerland[Mesh:NoExp] OR turkey[Mesh:NoExp] OR "united kingdom"[Mesh] OR "united states"[Mesh]	3,522,393
#38	#36 NOT #37	1,168,919
#39	#35 NOT #38	3,018
#40	Adverse Childhood Experiences[Mesh] OR Autism Spectrum Disorder[Mesh] OR Autistic Disorder[Mesh] OR autism[ti] OR autistic[ti] OR biomarker*[ti] OR breastfeed*[ti] OR "diagnostic accuracy"[ti] OR Psychometrics[Mesh] OR psychometric*[ti] OR Reproducibility of Results[Mesh] OR surgical[ti] OR surgery[ti] OR validation[ti] OR validity[ti] or yoga[ti]	1,501,614
#41	#39 NOT #40	2,560
#42	"Systematic Reviews as Topic"[Mesh] OR "cochrane database syst rev"[ta] OR "systematic literature review"[ti] OR "systematic review"[ti] OR ("systematic review"[tiab] AND review[pt]) OR "this systematic review"[tw] OR "meta-analysis"[pt] OR "meta-analysis as topic"[MeSH Terms] OR "meta-analyses"[tiab] OR "meta-analysis"[tiab] OR meta synthesis[tiab] OR "Umbrella Review"[tiab]	447,782
#43	#41 AND #42	156
#44	randomized controlled trial [pt] OR controlled clinical trial [pt] OR randomized [tiab] OR randomly [tiab] OR trial [tiab] OR groups [tiab] OR Phase III[tiab] OR Phase 3[tiab]	3,774,750
#45	#41 AND #44	1,040
#46	"Cohort Studies"[Mesh] OR cohort OR "Clinical Trial"[Publication Type] OR follow-up OR followup OR "different models" OR longitudinal OR "Research Design"[Mesh] OR "Evaluation Study"[Publication Type] OR "Comparative Study"[Publication Type] OR ((comparative OR Intervention) AND study) OR interrupted time* OR time serie* OR intervention* OR ((quasi-experiment* OR quasiexperiment* OR quasi OR experimental) AND (method OR study OR trial OR design*)) OR "real world" OR "real-world"	11,891,539
#47	#41 AND #46	2,217
#48	#47 NOT (review[pt] OR meta analysis[pt] OR case report[tw] OR consensus[mh] OR guideline[pt] OR history[sh])	2,003
#49	"Interrupted Time Series Analysis"[Mesh] OR "interrupted time series"[tiab:~1] OR "repeated measures"[tiab:~1] OR "repeated measures"[All Fields]	50,944
#50	#41 AND #49	32

Table A-2. APA PsycInfo, EBSCOhost, 10/5/2023

Search #	Query	Limiters/Expanders	Results
1	DE "Mental Disorders" OR DE "Affective Disorders" OR DE "Anxiety Disorders" OR DE "Behavior Disorders" OR DE "Bipolar Disorder" OR DE "Borderline States" OR DE "Chronic Mental Illness" OR DE "Dissociative Disorders" OR DE "Eating Disorders" OR DE "Gender Dysphoria" OR DE "Neurosis" OR DE "Obsessive Compulsive Disorder" OR DE "Paraphilias" OR DE "Personality Disorders" OR DE "Serious Mental Illness" OR DE "Sleep Wake Disorders" OR DE "Somatoform Disorders" OR DE "Substance Related and Addictive Disorders" OR DE "Thought Disorders"	Expanders - Apply equivalent subjects Search modes - Find all my search terms	320,224
2	"Adjustment Disorders" OR Anorexia OR Anorexic* OR "Antisocial Personality" OR "behavior disorder*" OR "behaviour disorder" OR "behavioral health" OR "behavioural health" OR Bipolar OR "Borderline Personality" OR "Capgras Syndrome" OR "Compulsive Personality" OR "Conversion Disorder" OR Cyclothymic OR cyclothymia OR Delir* OR "Dependent Personality" OR ((Disruptive OR "Impulse Control" OR impulsive*) AND ("Conduct Disorder" OR "Conduct Disorders" OR behavior OR behaviors OR behaviour OR behaviours)) OR dissociative OR dissociation OR Dyssomnia* OR "Emotional disorder" OR "Emotional disorders" OR "Emotion Disorder" OR "Emotion disorders" OR Exhibitionis* OR "Factitious Disorders" OR "Food Addiction" OR "Gender Dysphoria" OR "Histrionic Personality" OR Hypochondriasis OR hypochondriac* OR hypochondria OR Masochis* OR "Mood Disorders" OR "mood disorder" OR Mutism OR mute OR mutes OR "Obsessive-Compulsive Disorder" OR "Orthorexia Nervosa" OR "Panic Disorder" OR "Paranoid Personality" OR paranoi* OR "Paraphilic Disorders" OR Parasomnia* OR "Passive-Aggressive Personality" OR "Personality Disorder" OR "Phobic Disorders" OR phobia* OR "Reactive Attachment" OR (Relationship AND disturbances) OR Rumination OR Sadis* OR "Schizoid Personality" OR "Schizotypal Personality" OR "Sexual and Gender Disorders" OR "Sleep Wake Disorders" OR "social anxiety disorder" OR ("social behavior" AND disorder) OR ("social behaviour" AND disorder) OR "Somatoform Disorders" OR Voyeuris*	Expanders - Apply equivalent subjects Search modes - Find all my search terms	553,509
3	S1 OR S2	Expanders - Apply equivalent subjects Search modes - Find all my search terms	691,767
4	N/A	Limiters - Age Groups: Childhood (birth-12 yrs), Adolescence (13-17 yrs) Expanders - Apply equivalent subjects	891,386

		Search modes - Find all my search terms	
5	(TI adolescen* OR AB adolescen*) OR (TI boys OR AB boys) OR (TI child OR AB child) OR (TI children* OR AB children*) OR (TI childhood OR AB childhood) OR (TI girls OR AB girls) OR (TI infant* OR AB infant*) OR (TI juvenile* OR AB juvenile*) OR (TI kindergarten* OR AB kindergarten*) OR (TI neonat* OR AB neonat*) OR (TI newborn* OR AB newborn*) OR (TI pediatric* OR AB pediatric*) OR (TI paediatric* OR AB paediatric*) OR TI “pre-school” OR AB “pre-school” OR TI “pre-schooler” OR AB “pre-schooler” OR TI “pre-schoolers” OR AB “pre-schoolers” OR (TI preschool* OR AB preschool*) OR (TI school-age* OR AB “school-age*”) OR (TI "school age*" OR AB "school age*") OR (TI teen OR AB teen) OR (TI teens OR AB teens) OR (TI teenage* OR AB teenage*) OR (TI youth* OR AB youth*)	Limiters - Age Groups: Childhood (birth-12 yrs), Adolescence (13-17 yrs) Expanders - Apply equivalent subjects Search modes - Find all my search terms	662,880
6	S3 AND (S4 OR S5)	Limiters - Age Groups: Childhood (birth-12 yrs), Adolescence (13-17 yrs) Expanders - Apply equivalent subjects Search modes - Find all my search terms	148,718
7	DE "Substance Related and Addictive Disorders" OR DE "Addiction" OR DE "Nonsubstance Related Addictions" OR DE "Substance Use Disorder" OR DE "Substance Use Disorder" OR DE "Alcohol Use Disorder" OR DE "Cannabis Use Disorder" OR DE "Drug Abuse" OR DE "Drug Dependency" OR DE "Inhalant Abuse" OR DE "Opioid Use Disorder" OR DE "Tobacco Use Disorder" OR TI "substance disorder" OR AB "substance disorder" OR TI "substance disorders" OR AB "substance disorders" OR TI "substance abuse" OR AB "substance abuse" OR TI "substance use" OR AB "substance use" OR TI "drug abuse" OR "drug abuse" OR TI "Amphetamine Disorders" OR AB "Amphetamine Disorders" OR TI "Amphetamine Disorder" OR AB "Amphetamine Disorder" OR TI "Cocaine Disorders" OR AB "Cocaine Disorders" OR TI "Cocaine Disorder" OR AB "Cocaine Disorder" OR (TI Inhalant* OR AB Inhalant*) OR (TI Marijuana OR AB Marijuana) OR TI "Narcotic-Related Disorders" OR AB "Narcotic-Related Disorders" OR TI "Narcotic-Related Disorder" OR AB "Narcotic-Related Disorder" OR TI "Neonatal Abstinence Syndrome" OR AB "Neonatal Abstinence Syndrome" OR TI "Phencyclidine Abuse" AB "Phencyclidine Abuse" OR TI "Substance Withdrawal Syndrome" OR AB "Substance Withdrawal Syndrome"	Expanders - Apply equivalent subjects Search modes - Find all my search terms	145,837
8	(TI tobacco OR AB tobacco) OR (TI cigarette* OR AB cigarette*) OR (TI smoking OR AB smoking) OR (TI smoker* OR AB smoker*) OR (TI vaping OR AB vaping) OR (TI vape* OR AB vape*)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	73,704

9	DE "Alcohol Abuse" OR DE "Alcoholism" OR DE "Binge Drinking" OR DE "Alcohol Use" OR DE "Underage Drinking" OR DE "Alcohol Intoxication" OR DE "Acute Alcohol Intoxication" OR DE "Chronic Alcohol Intoxication" OR TI "alcohol abuse" OR AB "alcohol abuse" OR (TI "alcohol addiction*" OR AB "alcohol addiction*") OR TI "alcohol consumption" OR AB "alcohol consumption" OR (TI "alcohol depend*" OR AB "alcohol depend*") OR TI "alcohol misuse" OR AB "alcohol misuse" OR (TI "alcohol problem*" OR AB "alcohol problem*") OR TI "alcohol use" OR AB "alcohol use" OR TI alcoholic* OR AB alcoholic* OR (TI alcoholism OR AB alcoholism) OR (TI "alcohol use disorder*" OR AB "alcohol use disorder*") OR (((TI drinking OR AB drinking) OR (TI drinker OR AB drinker) OR (TI drinkers OR AB drinkers)) AND (TI alcohol* OR AB alcohol*)) OR (TI "harmful alcohol*" OR AB "harmful alcohol*") OR (TI "harmful drink*" OR AB "harmful drink*") OR (TI "problem drink*" OR AB "problem drink*")	Expanders - Apply equivalent subjects Search modes - Find all my search terms	119,050
10	S6 OR S7 OR S8	Expanders - Apply equivalent subjects Search modes - Find all my search terms	338,772
11	N/A	Limiters - Age Groups: School Age (6-12 yrs), Adolescence (13-17 yrs) Expanders - Apply equivalent subjects Search modes - Find all my search terms	680,272
12	S10 AND (TI adolescen* OR AB adolescen*) OR (TI boys OR AB boys) OR (TI child OR AB child) OR (TI children* OR AB children*) OR (TI childhood OR AB childhood) OR (TI girls OR AB girls) OR (TI juvenile* OR AB juvenile*) OR (TI pediatric* OR AB pediatric*) OR (TI paediatric* OR AB paediatric*) OR (TI teen OR AB teen) OR (TI teens OR AB teens) OR (TI teenage* OR AB teenage*) OR (TI youth* OR AB youth*)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	964,896
13	(S10 AND S11) OR S12	Expanders - Apply equivalent subjects Search modes - Find all my search terms	999,462
14	DE "Anxiety Disorders" OR DE "Castration Anxiety" OR DE "Generalized Anxiety Disorder" OR DE "Panic Attack" OR DE "Panic Disorder" OR DE "Phobias" OR DE "Selective Mutism" OR DE "Separation Anxiety Disorder" OR DE "Anxiety" OR DE "Anxiety Sensitivity" OR DE "Climate Anxiety" OR DE "Computer Anxiety" OR DE "Death Anxiety" OR DE "Health Anxiety" OR DE "Mathematics Anxiety" OR DE "Performance Anxiety" OR DE "Social Anxiety" OR DE "Speech Anxiety" OR DE "Test Anxiety" OR DE "Travel Anxiety" OR agoraphobia OR (TI anxiety) OR TI "generalized anxiety disorder" OR AB "generalized anxiety disorder" OR (TI mutism OR AB mutism) OR TI "panic disorder" OR AB "panic	Expanders - Apply equivalent subjects Search modes - Find all my search terms	164,115

	disorder" OR (TI phobia* OR AB phobia*) OR TI "separation anxiety" OR AB "separation anxiety" OR TI "social anxiety" OR AB "social anxiety"		
15	S14	Limiters - Age Groups: School Age (6-12 yrs), Adolescence (13-17 yrs) Expanders - Apply equivalent subjects Search modes - Find all my search terms	27,935
16	S14 AND (TI adolescen* OR AB adolescen*) OR (TI boys OR AB boys) OR (TI child OR AB child) OR (TI children* OR AB children*) OR (TI childhood OR AB childhood) OR (TI girls OR AB girls) OR (TI juvenile* OR AB juvenile*) OR (TI pediatric* OR AB pediatric*) OR (TI paediatric* OR AB paediatric*) OR (TI teen OR AB teen) OR (TI teens OR AB teens) OR (TI teenage* OR AB teenage*) OR (TI youth* OR AB youth*)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	941,483
17	S15 OR S16	Expanders - Apply equivalent subjects Search modes - Find all my search terms	948,491
18	(DE "Major Depression" OR DE "Dysthymic Disorder" OR DE "Endogenous Depression" OR DE "Postpartum Depression" OR DE "Reactive Depression" OR DE "Recurrent Depression" OR DE "Treatment Resistant Depression") OR DE "Depression (Emotion)" OR (TI depress* OR AB depress*) OR (TI depression OR AB depression) OR (TI depressive OR AB depressive) OR (TI depressed OR AB depressed) OR (MH "Dysthymic Disorder+") OR (TI dysthymia OR AB dysthymia) OR (TI dysthymic OR AB dysthymic) OR TI "Persistent Depressive Disorder" OR AB "Persistent Depressive Disorder" OR DE "Suicidality" OR DE "Suicide" OR DE "Youth Suicide" OR DE "Attempted Suicide" OR (TI parasuicid* OR AB parasuicid*) OR TI "self harm" OR AB "self harm" OR (MH "Self-Injurious Behavior+") OR (TI suicid* OR AB suicid*)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	416,093
19	S18	Limiters - Age Groups: School Age (6-12 yrs), Adolescence (13-17 yrs) Expanders - Apply equivalent subjects Search modes - Find all my search terms	63,204
20	S18 AND (TI adolescen* OR AB adolescen*) OR (TI boys OR AB boys) OR (TI child OR AB child) OR (TI children* OR AB children*) OR (TI childhood OR AB childhood) OR (TI girls OR AB girls) OR (TI juvenile* OR AB juvenile*) OR (TI pediatric* OR AB pediatric*) OR (TI paediatric* OR AB paediatric*) OR (TI teen OR AB teen) OR (TI teens OR AB teens) OR (TI teenage* OR AB teenage*) OR (TI youth* OR AB youth*)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	951,845
21	S19 OR S20	Expanders - Apply equivalent subjects Search modes - Find all my search terms	966,459

22	S6 OR S13 OR S17 OR S21	Expanders - Apply equivalent subjects Search modes - Find all my search terms	1,020,920
23	TI "Ask Suicide-Screening Questions" OR AB "Ask Suicide-Screening Questions" OR (TI ASQ OR AB ASQ) OR TI "Columbia-Suicide Severity Rating Scale" OR AB "Columbia-Suicide Severity Rating Scale" OR (TI C-SSRS OR AB C-SSRS) OR TI "Patient Safety Screener" OR AB "Patient Safety Screener" OR (TI PSS-3 OR AB PSS-3) OR (TI PHQ-2 OR AB PHQ-2) OR TI "PHQ-9 Modified Teens" OR "PHQ-9 Modified	Expanders - Apply equivalent subjects Search modes - Find all my search terms	1,411
24	DE "Screening" OR DE "Screening Tests" OR DE "Screening Tests" OR DE "Psychological Screening Inventory" OR DE "Motivational Interviewing" OR DE "Risk Assessment" OR DE "Smoking Prevention" OR TI "risk assessment" OR AB "risk assessment" OR "risk assess*" OR (TI screen OR AB screen) OR (TI screening OR AB screening) OR (TI screened OR AB screened) OR (TI screens OR AB screens) OR (TI screenings OR AB screenings) OR TI "brief intervention" OR AB "brief intervention" OR TI "brief interventions" OR AB "brief interventions" OR TI "preventive care" OR AB "preventive care" OR TI "preventive intervention" OR AB "preventive intervention" OR TI "preventive interventions" OR AB "preventive interventions" OR TI "preventive behavioral health" OR AB "preventive behavioral health" OR TI "preventive mental health" OR AB "preventive mental health" OR TI "preventive psychosocial" OR AB "preventive psychosocial" OR (TI "recommended intervention*" OR AB "recommended intervention*")	Expanders - Apply equivalent subjects Search modes - Find all my search terms	164,513
25	DE "Counseling" OR DE "School Counseling" OR (TI counseling OR AB counseling) OR (TI counselling OR AB counselling) OR (TI counsel OR AB counsel) OR (TI counseled OR AB counseled) OR (TI counselled OR AB counselled) OR (TI counsels OR AB counsels)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	101,176
26	S23 OR S24 OR S25	Expanders - Apply equivalent subjects Search modes - Find all my search terms	260,979
27	S22 AND S26	Expanders - Apply equivalent subjects Search modes - Find all my search terms	60,165
28	TI "implementation science" OR AB "implementation science" OR TI "implementation strategy" OR AB "implementation strategy" OR TI "implementation strategies" OR AB "implementation strategies" OR TI "implementation research" OR AB "implementation research" OR (TI "implementation model*" OR AB "implementation model*") OR (TI "implementation framework*" OR AB "implementation framework*") OR (TI Implement) OR (TI Implements) OR (TI Implemented) OR (TI Implementation) OR (TI	Expanders - Apply equivalent subjects Search modes - Find all my search terms	249,972

	Implement*) OR (TI acceptability OR AB acceptability) OR (TI acceptable OR AB acceptable) OR (TI Actionable OR AB Actionable) OR (TI Actionability OR AB Actionability) OR (MH Adoption+) OR (TI adoption OR AB adoption) OR (TI adopt*) OR (TI reach) OR (TI access) OR (TI acceptability) OR (MH "Quality Improvement+") OR (TI QI) OR TI "quality improvement" OR AB "quality improvement" OR (TI sustainment OR AB sustainment) OR (TI sustainability OR AB sustainability) OR (TI planning) OR (TI program*) OR (MH "Diffusion of Innovation+") OR (TI diffusion) OR (TI dissemination)		
29	S27 AND S28	Expanders - Apply equivalent subjects Search modes - Find all my search terms	4,980
30	TI "Bright Futures" OR AB "Bright Futures"	Expanders - Apply equivalent subjects Search modes - Find all my search terms	34
31	S29 OR S30	Expanders - Apply equivalent subjects Search modes - Find all my search terms	5,013
32	S29 OR S30	Limiters - Publication Year: 2010-2023; English; Language: English Expanders - Apply equivalent subjects Search modes - Find all my search terms	3,090
33	S32	Limiters - Population Group: Human Expanders - Apply equivalent subjects Search modes - Find all my search terms	2,912
34	DE "Childhood Adversity" OR DE "Autism Spectrum Disorders" OR DE "Autistic Traits" OR DE "Psychometrics" OR DE "Classical Test Theory" OR DE "Consistency (Measurement)" OR DE "Error of Measurement" OR DE "External Validity" OR DE "Factor Analysis" OR DE "Internal Validity" OR DE "Item Analysis (Test)" OR DE "Item Response Theory" OR DE "Measurement Invariance" OR DE "Measurement Models" OR DE "Multivariate Analysis" OR DE "Test Construction" OR DE "Test Reliability" OR DE "Test Sensitivity" OR DE "Test Specificity" OR DE "Test Validity" OR DE "Variability Measurement" OR TI autism OR TI biomarker* OR TI breastfeed* OR TI “diagnostic accuracy” OR TI psychometric* OR TI reproducibility OR TI surgical OR TI surgery OR TI validation OR TI validity OR TI yoga	Expanders - Apply equivalent subjects Search modes - Find all my search terms	337,533
35	S33 NOT S34	Expanders - Apply equivalent subjects Search modes - Find all my search terms	2,344

36	S35	Limiters - Methodology: CLINICAL TRIAL, EMPIRICAL STUDY, INTERVIEW, -Focus Group, QUALITATIVE STUDY, QUANTITATIVE STUDY, TREATMENT OUTCOME Expanders - Apply equivalent subjects Search modes - Find all my search terms	1,812
37	S35	Limiters - Methodology: - Systematic Review, META ANALYSIS, METASYNTHESIS Expanders - Apply equivalent subjects Search modes - Find all my search terms	109

Table A-3. Cochrane Library, Wiley, 10/6/2023

Search #	Query	Results
#1	[mh "Mental Disorders"] OR [mh "Substance-Related Disorders"] OR [mh "Mental Health"] OR [mh "Mental Health Services"] OR [mh "Community Mental Health Services"] OR [mh "School Mental Health Services"] OR [mh "Social Behavior Disorders"] OR ("mental" NEXT disorder*):ti,ab OR "mental health services":ti,ab OR "substance abuse":ti,ab	116190
#2	"Adjustment Disorders":ti,ab,kw OR Anorexia:ti,ab,kw OR Anorexic*:ti,ab,kw OR "Antisocial Personality":ti,ab,kw OR ("behavior" NEXT disorder*):ti,ab,kw OR "behaviour disorder":ti,ab,kw OR "behavioral health":ti,ab,kw OR "behavioural health":ti,ab,kw OR Bipolar:ti,ab,kw OR "Borderline Personality":ti,ab,kw OR "Capgras Syndrome":ti,ab,kw OR "Compulsive Personality":ti,ab,kw OR "Conversion Disorder":ti,ab,kw OR Cyclothymic:ti,ab,kw OR cyclothymia:ti,ab,kw OR Delir*:ti,ab,kw OR "Dependent Personality":ti,ab,kw OR ((Disruptive:ti,ab,kw OR "Impulse Control":ti,ab,kw OR impulsive*:ti,ab,kw) AND ("Conduct Disorder":ti,ab,kw OR "Conduct Disorders" OR behavior:ti,ab,kw OR behaviors:ti,ab,kw OR behaviour:ti,ab,kw OR behaviours:ti,ab,kw)) OR dissociative:ti,ab,kw OR dissociation:ti,ab,kw OR Dyssomnia*:ti,ab,kw OR "Emotional disorder":ti,ab,kw OR "Emotional disorders":ti,ab,kw OR "Emotion Disorder":ti,ab,kw OR "Emotion disorders":ti,ab,kw OR Exhibitionis*:ti,ab,kw OR "Factitious Disorders":ti,ab,kw OR "Food Addiction":ti,ab,kw OR "Gender Dysphoria":ti,ab,kw OR "Histrionic Personality":ti,ab,kw OR Hypochondriasis:ti,ab,kw OR hypochondriac*:ti,ab,kw OR hypochondria:ti,ab,kw OR Masochis*:ti,ab,kw OR "Mood Disorders":ti,ab,kw OR "mood disorder":ti,ab,kw OR Mutism:ti,ab,kw OR mute:ti,ab,kw OR mutes:ti,ab,kw OR "Obsessive-Compulsive Disorder":ti,ab,kw OR "Orthorexia Nervosa":ti,ab,kw OR "Panic Disorder":ti,ab,kw OR "Paranoid Personality":ti,ab,kw OR paranoi*:ti,ab,kw OR "Paraphilic Disorders":ti,ab,kw OR Parasomnia*:ti,ab,kw OR "Passive-Aggressive Personality":ti,ab,kw OR "Personality Disorder":ti,ab,kw OR "Phobic Disorders":ti,ab,kw OR phobia*:ti,ab,kw OR "Reactive Attachment":ti,ab,kw OR (Relationship:ti,ab,kw AND disturbances:ti,ab,kw) OR Rumination:ti,ab,kw OR Sadis*:ti,ab,kw OR "Schizoid Personality":ti,ab,kw OR "Schizotypal Personality":ti,ab,kw OR "Sexual and Gender Disorders":ti,ab,kw OR "Sleep Wake Disorders":ti,ab,kw OR "social anxiety disorder":ti,ab,kw OR ("social behavior":ti,ab,kw AND disorder:ti,ab,kw) OR ("social behaviour":ti,ab,kw AND disorder:ti,ab,kw) OR "Somatoform Disorders":ti,ab,kw OR Voyeuris*:ti,ab,kw	50711
#3	#1 OR #2	143457
#4	[mh "Newborn"] OR [mh Infant] OR [mh "Preschool Child"] OR [mh Child] OR [mh Adolescent] OR adolescen*:ti,ab OR boys:ti,ab OR child:ti,ab OR children*:ti,ab OR childhood:ti,ab OR girls:ti,ab OR infant*:ti,ab OR juvenile*:ti,ab OR kindergarten*:ti,ab OR neonat*:ti,ab OR newborn*:ti,ab OR pediatric*:ti,ab OR paediatric*:ti,ab OR "pre-school":ti,ab OR "pre-schooler":ti,ab OR "pre-schoolers":ti,ab OR preschool*:ti,ab OR (school NEXT age*):ti,ab OR teen:ti,ab OR teens:ti,ab OR teenage*:ti,ab OR youth*:ti,ab	331322
#5	#3 AND #4	35957
#6	[mh "Anxiety Disorders"] OR [mh Anxiety] OR agoraphobia OR anxiety:ti OR "generalized anxiety disorder":ti,ab OR mutism:ti,ab OR "panic disorder":ti,ab OR phobia*:ti,ab OR "separation anxiety":ti,ab OR "social anxiety":ti,ab	34493
#7	[mh Child] OR [mh Adolescent] OR adolescen*:ti,ab OR boys:ti,ab OR child:ti,ab OR children*:ti,ab OR childhood:ti,ab OR girls:ti,ab OR juvenile*:ti,ab OR pediatric*:ti,ab OR paediatric*:ti,ab OR teen:ti,ab OR teens:ti,ab OR teenage*:ti,ab OR youth*:ti,ab	284679
#8	#6 AND #7	8166
#9	[mh "Substance-Related Disorders"] OR "substance disorder":ti,ab OR "substance disorders":ti,ab OR "substance abuse":ti,ab OR "substance use":ti,ab OR "drug abuse":ti,ab OR "Amphetamine Disorders":ti,ab OR "Amphetamine Disorder":ti,ab OR "Cocaine Disorders":ti,ab OR "Cocaine Disorder":ti,ab OR Inhalant*:ti,ab OR Marijuana:ti,ab OR "Narcotic-Related Disorders":ti,ab OR "Narcotic-Related Disorder":ti,ab OR "Neonatal Abstinence Syndrome":ti,ab OR "Phencyclidine Abuse":ti,ab OR "Substance Withdrawal Syndrome":ti,ab	26959
#10	[mh "Tobacco Use"] OR [mh "Tobacco, Smokeless"] OR [mh "Tobacco Use Disorder"] OR [mh "Tobacco Smoking"] OR [mh "Tobacco Use Cessation"] OR [mh "Tobacco Use Cessation Devices"] OR "Tobacco Use":ti,ab OR tobacco:ti,ab OR cigarette*:ti,ab OR smoking:ti,ab OR smoker*:ti,ab OR vaping:ti,ab OR vape*:ti,ab	42822
#11	[mh "Alcohol-Related Disorders"] OR [mh Alcoholics] OR [mh Alcoholism] OR [mh "Alcohol Drinking"] OR "alcohol abuse":ti,ab OR (alcohol NEXT addiction*):ti,ab OR "alcohol	19831

	consumption”:ti,ab OR (alcohol NEXT depend*):ti,ab OR "alcohol misuse”:ti,ab OR (alcohol NEXT problem*):ti,ab OR "alcohol use”:ti,ab OR alcoholism:ti,ab OR ("alcohol use" NEXT disorder*):ti,ab OR ((drinking:ti,ab OR drinker:ti,ab OR drinkers:ti,ab) AND alcohol*:ti,ab) OR (harmful NEXT alcohol*):ti,ab OR (harmful NEXT drink*):ti,ab OR (problem NEXT drink*):ti,ab	
#12	#9 OR #10 OR #11	73334
#13	#12 AND #7	12205
#14	[mh "Depressive Disorder"] OR [mh "Depressive Disorder, Major"] OR [mh Depression] OR depress*:ti,ab OR depression:ti,ab OR depressive:ti,ab OR depressed:ti,ab OR [mh "Dysthymic Disorder"] OR dysthymia:ti,ab OR dysthymic:ti,ab OR "Persistent Depressive Disorder”:ti,ab OR [mh Suicide] OR [mh "Suicide, Attempted"] OR [mh "Suicide, Completed"] OR [mh "Suicidal Ideation"] OR parasuicid*:ti,ab OR "self harm”:ti,ab OR [mh "Self-Injurious Behavior"] OR suicid*:ti,ab	106333
#15	[mh Child] OR [mh Adolescent] OR adolescen*:ti,ab OR boys:ti,ab OR child:ti,ab OR children*:ti,ab OR childhood:ti,ab OR girls:ti,ab OR pediatric*:ti,ab OR paediatric*:ti,ab OR teen:ti,ab OR teens:ti,ab OR teenage*:ti,ab OR youth*:ti,ab	283958
#16	#14 AND #15	16604
#17	#5 OR #8 OR #13 OR #16	52960
#18	"Ask Suicide-Screening Questions“:ti,ab OR ASQ:ti,ab OR "Columbia-Suicide Severity Rating Scale”:ti,ab OR C-SSRS:ti,ab OR "Patient Safety Screener”:ti,ab OR PSS-3:ti,ab OR PHQ-2:ti,ab OR "PHQ-9 Modified Teens":ti,ab OR PHQ-A:ti,ab OR PHQ-9:ti,ab OR "Alcohol Screening Brief Intervention Youth":ti,ab OR "Brief Screener Alcohol Tobacco other Drugs":ti,ab OR BSTAD:ti,ab OR "Car Relax Alone Forget Friends Trouble":ti,ab OR CRAFFT:ti,ab OR "Screening Brief Intervention":ti,ab OR S2BI:ti,ab OR "Pediatric Symptom Checklist“:ti,ab	4392
#19	[mh "Mass Screening"] OR [mh "Motivational Interviewing"] OR [mh "Risk Assessment"] OR "risk assessment”:ti,ab OR (risk NEXT assess*) OR screen:ti,ab OR screening:ti,ab OR screened:ti,ab OR screens:ti,ab OR screenings:ti,ab OR "brief intervention”:ti,ab OR "brief interventions":ti,ab OR "preventive care":ti,ab OR "preventive intervention"":ti,ab OR "preventive interventions":ti,ab OR "preventive behavioral health":ti,ab OR "preventive mental health"":ti,ab OR "preventive psychosocial":ti,ab OR ("recommended" NEXT intervention*):ti,ab	133874
#20	[mh "Counseling"] OR counseling:ti,ab OR counselling:ti,ab OR counsel:ti,ab OR counseled:ti,ab OR counselled:ti,ab OR counsels:ti,ab OR "motivational interviewing":ti,ab	29372
#21	#18 OR #19 OR #20	159512
#22	#17 AND #21	9570
#23	[mh "Community Health Planning"] OR [mh "Health Plan Implementation"] OR [mh "Implementation Science"] OR "implementation science”:ti,ab OR "implementation strategy":ti,ab OR "implementation strategies":ti,ab OR "implementation research":ti,ab OR (implementation NEXT model*):ti,ab OR ("implementation" NEXT framework*):ti,ab OR Implement:ti OR Implements:ti OR Implemented:ti OR Implementation:ti OR Implement*:ti OR acceptability:ti,ab OR acceptable:ti,ab OR Actionable:ti,ab OR Actionability:ti,ab OR [mh Adoption] OR adoption:ti,ab OR adopt*:ti OR reach:ti OR access:ti OR acceptability:ti OR [mh "Quality Improvement"] OR QI:ti OR "quality improvement”:ti,ab OR sustainment:ti,ab OR sustainability:ti,ab OR planning:ti OR program*:ti OR [mh "Diffusion of Innovation"] OR diffusion:ti OR dissemination:ti	109754
#24	#22 AND #23	1767
#25	"Bright Futures":ti,ab	19
#26	#24 OR #25	1786
#27	([mh ^animals] NOT [mh ^humans]) OR (bovine:ti,ab OR canine:ti,ab OR capra:ti,ab OR cat:ti,ab OR cats:ti,ab OR cattle:ti,ab OR cow:ti,ab OR cows:ti,ab OR dog:ti,ab OR dogs:ti,ab OR equine:ti,ab OR ewe:ti,ab OR ewes:ti,ab OR feline:ti,ab OR goat:ti,ab OR goats:ti,ab OR hamster*:ti,ab OR horse:ti,ab OR horses:ti,ab OR invertebrate:ti,ab OR invertebrates:ti,ab OR macaque:ti,ab OR macaques:ti,ab OR mare:ti,ab OR mares:ti,ab OR mice:ti,ab OR monkey:ti,ab OR monkeys:ti,ab OR mouse:ti,ab OR murine:ti,ab OR nonhuman:ti,ab OR non-human:ti,ab OR ovine:ti,ab OR pig:ti,ab OR pigs:ti,ab OR porcine:ti,ab OR primate:ti,ab OR primates:ti,ab OR rabbit:ti,ab OR rabbits:ti,ab OR rat:ti,ab OR rats:ti,ab OR rattus:ti,ab OR rhesus:ti,ab OR rodent*:ti,ab OR sheep:ti,ab OR simian:ti,ab OR sow:ti,ab OR sows:ti,ab OR vertebrate:ti,ab OR vertebrates:ti,ab OR whale*:ti,ab OR zebrafish:ti,ab)	31150

#28	#26 NOT #27	1757
#29	[mh "Adverse Childhood Experiences"] OR [mh "Autism Spectrum Disorder"] OR [mh "Autistic Disorder"] OR autism:ti OR autistic:ti OR biomarker*:ti OR breastfeed*:ti OR "diagnostic accuracy":ti OR [mh Psychometrics] OR psychometric*:ti OR [mh "Reproducibility of Results"] OR surgical:ti OR surgery:ti OR validation:ti OR validity:ti OR yoga:ti	125,756
#30	#28 NOT #29	1,658
#31	#30 Limited to Systematic reviews published 2010-2023	46
#32	#30 Limited to Protocols published 2010-2023	1
#33	#30 Limited to Trials published 2010-2023	1,354

Table A-4. CINAHL, EBSCOhost, 10/6/2023

Search #	Query	Limiters/Expanders	Results
S1	(MH "Mental Disorders+") OR (MH "Substance-Related Disorders+") OR (MM "Mental Health+") OR (MM "Mental Health Services+") OR (MH "Community Mental Health Services+") OR (MH "School Mental Health Services+") OR (MH "Social Behavior Disorders+") OR TI "mental disorder*" OR AB "mental disorder*" OR TI "mental health services" OR AB "mental health services" OR TI "substance abuse" OR TI "substance abuse"	Expanders - Apply equivalent subjects Search modes - Find all my search terms	804,964
2	"Adjustment Disorders" OR Anorexia OR Anorexic* OR "Antisocial Personality" OR "behavior disorder*" OR "behaviour disorder" OR "behavioral health" OR "behavioural health" OR Bipolar OR "Borderline Personality" OR "Capgras Syndrome" OR "Compulsive Personality" OR "Conversion Disorder" OR Cyclothymic OR cyclothymia OR Delir* OR "Dependent Personality" OR ((Disruptive OR "Impulse Control" OR impulsive*) AND ("Conduct Disorder" OR "Conduct Disorders" OR behavior OR behaviors OR behaviour OR behaviours)) OR dissociative OR dissociation OR Dyssomnia* OR "Emotional disorder" OR "Emotional disorders" OR "Emotion Disorder" OR "Emotion disorders" OR Exhibitionis* OR "Factitious Disorders" OR "Food Addiction" OR "Gender Dysphoria" OR "Histrionic Personality" OR Hypochondriasis OR hypochondriac* OR hypochondria OR Masochis* OR "Mood Disorders" OR "mood disorder" OR Mutism OR mute OR mutes OR "Obsessive-Compulsive Disorder" OR "Orthorexia Nervosa" OR "Panic Disorder" OR "Paranoid Personality" OR paranoi* OR "Paraphilic Disorders" OR Parasomnia* OR "Passive-Aggressive Personality" OR "Personality Disorder" OR "Phobic Disorders" OR phobia* OR "Reactive Attachment" OR (Relationship AND disturbances) OR Rumination OR Sadis* OR "Schizoid Personality" OR "Schizotypal Personality" OR "Sexual and Gender Disorders" OR "Sleep Wake Disorders" OR "social anxiety disorder" OR ("social behavior" AND disorder) OR ("social behaviour" AND disorder) OR "Somatoform Disorders" OR Voyeuris*	Expanders - Apply equivalent subjects Search modes - Find all my search terms	179,140
3	S1 OR S2	Expanders - Apply equivalent subjects Search modes - Find all my search terms	854,422
4	(MH "Newborn+") OR (MH Infant+) OR (MH "Preschool Child+") OR (MH Child+) OR (MH Adolescent+) OR (TI adolescen* OR AB adolescen*) OR (TI boys OR AB boys) OR (TI child OR AB child) OR (TI children* OR AB children*) OR (TI childhood OR AB childhood) OR (TI girls OR AB girls) OR (TI infant* OR AB infant*) OR (TI juvenile* OR AB juvenile*) OR (TI kindergarten* OR AB kindergarten*) OR (TI neonat* OR AB neonat*) OR (TI newborn* OR AB newborn*) OR (TI pediatric* OR AB pediatric*) OR (TI paediatric* OR AB paediatric*) OR TI “pre-school” OR AB “pre-school” OR TI “pre-schooler” OR AB “pre-schooler” OR TI “pre-schoolers” OR AB “pre-	Expanders - Apply equivalent subjects Search modes - Find all my search terms	1,186,369

	schoolers” OR (TI preschool* OR AB preschool*) OR (TI school-age* OR AB “school-age*”) OR (TI "school age*" OR AB "school age*") OR (TI teen OR AB teen) OR (TI teens OR AB teens) OR (TI teenage* OR AB teenage*) OR (TI youth* OR AB youth*)		
5	S3 AND S4	Expanders - Apply equivalent subjects Search modes - Find all my search terms	215,022
6	(MH "Anxiety Disorders+") OR (MH Anxiety+) OR agoraphobia OR (TI anxiety) OR TI "generalized anxiety disorder" OR AB "generalized anxiety disorder" OR (TI mutism OR AB mutism) OR TI "panic disorder" OR AB "panic disorder" OR (TI phobia* OR AB phobia*) OR TI "separation anxiety" OR AB "separation anxiety" OR TI "social anxiety" OR AB "social anxiety"	Expanders - Apply equivalent subjects Search modes - Find all my search terms	116,573
7	(MH "Child+") OR (MH Adolescent+) OR (TI adolescen* OR AB adolescen*) OR (TI boys OR AB boys) OR (TI child OR AB child) OR (TI children* OR AB children*) OR (TI childhood OR AB childhood) OR (TI girls OR AB girls) OR (TI juvenile* OR AB juvenile*) OR (TI pediatric* OR AB pediatric*) OR (TI paediatric* OR AB paediatric*) OR (TI teen OR AB teen) OR (TI teens OR AB teens) OR (TI teenage* OR AB teenage*) OR (TI youth* OR AB youth*)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	1,132,973
8	S6 AND S7	Expanders - Apply equivalent subjects Search modes - Find all my search terms	27,371
9	(MH "Substance-Related Disorders+") OR TI "substance disorder" OR AB "substance disorder" OR TI "substance disorders" OR AB "substance disorders" OR TI "substance abuse" OR AB "substance abuse" OR TI "substance use" OR AB "substance use" OR TI "drug abuse" OR "drug abuse" OR TI "Amphetamine Disorders" OR AB "Amphetamine Disorders" OR TI "Amphetamine Disorder" OR AB "Amphetamine Disorder" OR TI "Cocaine Disorders" OR AB "Cocaine Disorders" OR TI "Cocaine Disorder" OR AB "Cocaine Disorder" OR (TI Inhalant* OR AB Inhalant*) OR (TI Marijuana OR AB Marijuana) OR TI "Narcotic-Related Disorders" OR AB "Narcotic-Related Disorders" OR TI "Narcotic-Related Disorder" OR AB "Narcotic-Related Disorder" OR TI "Neonatal Abstinence Syndrome" OR AB "Neonatal Abstinence Syndrome" OR TI "Phencyclidine Abuse" AB "Phencyclidine Abuse" OR TI "Substance Withdrawal Syndrome" OR AB "Substance Withdrawal Syndrome"	Expanders - Apply equivalent subjects Search modes - Find all my search terms	70,731
10	(MH "Tobacco Use+") OR (MH "Tobacco, Smokeless+") OR (MH "Tobacco Use Disorder+") OR (MH "Tobacco Smoking+") OR (MH "Tobacco Use Cessation+") OR (MH "Tobacco Use Cessation Devices+") OR (TI tobacco OR AB tobacco) OR (TI cigarette* OR AB cigarette*) OR (TI smoking OR AB smoking) OR (TI smoker* OR AB smoker*) OR (TI vaping OR AB vaping) OR (TI vape* OR AB vape*)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	125,565
11	(MH "Alcohol-Related Disorders+") OR (MH Alcoholics+) OR (MH Alcoholism+) OR (MH "Alcohol Drinking+") OR TI "alcohol abuse" OR AB "alcohol	Expanders - Apply equivalent subjects	93,787

	abuse" OR (TI "alcohol addiction*" OR AB "alcohol addiction*") OR TI "alcohol consumption" OR AB "alcohol consumption" OR (TI "alcohol depend*" OR AB "alcohol depend*") OR TI "alcohol misuse" OR AB "alcohol misuse" OR (TI "alcohol problem*" OR AB "alcohol problem*") OR TI "alcohol use" OR AB "alcohol use" OR (TI alcoholism OR AB alcoholism) OR (TI "alcohol use disorder*" OR AB "alcohol use disorder*") OR (((TI drinking OR AB drinking) OR (TI drinker OR AB drinker) OR (TI drinkers OR AB drinkers)) AND (TI alcohol* OR AB alcohol*)) OR (TI "harmful alcohol*" OR AB "harmful alcohol*") OR (TI "harmful drink*" OR AB "harmful drink*") OR (TI "problem drink*" OR AB "problem drink*")	Search modes - Find all my search terms	
12	S9 OR S10 OR S11	Expanders - Apply equivalent subjects Search modes - Find all my search terms	255,956
13	S12 AND S7	Expanders - Apply equivalent subjects Search modes - Find all my search terms	50,079
14	(MH "Depressive Disorder+") OR (MH "Depressive Disorder, Major+") OR (MH Depression+) OR (TI depress* OR AB depress*) OR (TI depression OR AB depression) OR (TI depressive OR AB depressive) OR (TI depressed OR AB depressed) OR (MH "Dysthymic Disorder+") OR (TI dysthymia OR AB dysthymia) OR (TI dysthymic OR AB dysthymic) OR TI "Persistent Depressive Disorder" OR AB "Persistent Depressive Disorder" OR (MH Suicide+) OR (MH "Suicide, Attempted+") OR (MH "Suicide, Completed+") OR (MH "Suicidal Ideation+") OR (TI parasuicid* OR AB parasuicid*) OR TI "self harm" OR AB "self harm" OR (MH "Self-Injurious Behavior+") OR (TI suicid* OR AB suicid*)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	259,910
15	(MH "Child+") OR (MH Adolescent+) OR (TI adolescen* OR AB adolescen*) OR (TI boys OR AB boys) OR (TI child OR AB child) OR (TI children* OR AB children*) OR (TI childhood OR AB childhood) OR (TI girls OR AB girls) OR (TI pediatric* OR AB pediatric*) OR (TI paediatric* OR AB paediatric*) OR (TI teen OR AB teen) OR (TI teens OR AB teens) OR (TI teenage* OR AB teenage*) OR (TI youth* OR AB youth*)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	1,128,877
16	S14 AND S15	Expanders - Apply equivalent subjects Search modes - Find all my search terms	50,967
17	TI "Ask Suicide-Screening Questions" OR AB "Ask Suicide-Screening Questions" OR (TI ASQ OR AB ASQ) OR TI "Columbia-Suicide Severity Rating Scale" OR AB "Columbia-Suicide Severity Rating Scale" OR (TI C-SSRS OR AB C-SSRS) OR TI "Patient Safety Screener" OR AB "Patient Safety Screener" OR (TI PSS-3 OR AB PSS-3) OR (TI PHQ-2 OR AB PHQ-2) OR TI "PHQ-9 Modified Teens" OR "PHQ-9 Modified Teens" OR (TI PHQ-A OR AB PHQ-A) OR (TI PHQ-9 OR AB PHQ-9) OR TI "Alcohol Screening Brief Intervention Youth" OR AB "Alcohol Screening Brief Intervention Youth" OR TI "Brief Screener Alcohol Tobacco other Drugs" OR AB	Expanders - Apply equivalent subjects Search modes - Find all my search terms	4,338

	"Brief Screener Alcohol Tobacco other Drugs" OR (TI BSTAD OR AB BSTAD) OR TI "Car Relax Alone Forget Friends Trouble" OR AB "Car Relax Alone Forget Friends Trouble" OR (TI CRAFFT OR AB CRAFFT) OR TI "Screening Brief Intervention" OR AB "Screening Brief Intervention" OR (TI S2BI OR AB S2BI) OR TI "Pediatric Symptom Checklist" OR AB "Pediatric Symptom Checklist"		
18	(MH "Mass Screening+") OR (MH "Motivational Interviewing+") OR (MH "Risk Assessment+") OR TI "risk assessment" OR AB "risk assessment" OR "risk assess*" OR (TI screen OR AB screen) OR (TI screening OR AB screening) OR (TI screened OR AB screened) OR (TI screens OR AB screens) OR (TI screenings OR AB screenings) OR TI "brief intervention" OR AB "brief intervention" OR TI "brief interventions" OR AB "brief interventions" OR TI "preventive care" OR AB "preventive care" OR TI "preventive intervention" OR AB "preventive intervention" OR TI "preventive interventions" OR AB "preventive interventions" OR TI "preventive behavioral health" OR AB "preventive behavioral health" OR TI "preventive mental health" OR AB "preventive mental health" OR TI "preventive psychosocial" OR AB "preventive psychosocial" OR (TI "recommended intervention*" OR AB "recommended intervention*")	Expanders - Apply equivalent subjects Search modes - Find all my search terms	387,278
19	(MH "Counseling+") OR (TI counseling OR AB counseling) OR (TI counselling OR AB counselling) OR (TI counsel OR AB counsel) OR (TI counseled OR AB counseled) OR (TI counselled OR AB counselled) OR (TI counsels OR AB counsels) OR TI "motivational interviewing" OR AB "motivational interviewing"	Expanders - Apply equivalent subjects Search modes - Find all my search terms	89,991
20	S5 OR S8 OR S13 OR S16	Expanders - Apply equivalent subjects Search modes - Find all my search terms	248,888
21	S17 OR S18 OR S19	Expanders - Apply equivalent subjects Search modes - Find all my search terms	465,403
22	S20 AND S21	Expanders - Apply equivalent subjects Search modes - Find all my search terms	30,235
23	(MH "Community Health Planning+") OR (MH "Health Plan Implementation+") OR (MH "Implementation Science+") OR TI "implementation science" OR AB "implementation science" OR TI "implementation strategy" OR AB "implementation strategy" OR TI "implementation strategies" OR AB "implementation strategies" OR TI "implementation research" OR AB "implementation research" OR (TI "implementation model*" OR AB "implementation model*") OR (TI "implementation framework*" OR AB "implementation framework*") OR (TI Implement) OR (TI Implements) OR (TI Implemented) OR (TI Implementation) OR (TI Implement*) OR (TI acceptability OR AB acceptability) OR (TI acceptable OR AB acceptable) OR (TI Actionable OR AB Actionable) OR (TI	Expanders - Apply equivalent subjects Search modes - Find all my search terms	447,514

	Actionability OR AB Actionability) OR (MH Adoption+) OR (TI adoption OR AB adoption) OR (TI adopt*) OR (TI reach) OR (TI access) OR (TI acceptability) OR (MH "Quality Improvement+") OR (TI QI) OR TI "quality improvement" OR AB "quality improvement" OR (TI sustainment OR AB sustainment) OR (TI sustainability OR AB sustainability) OR (TI planning) OR (TI program*) OR (MH "Diffusion of Innovation+") OR (TI diffusion) OR (TI dissemination)		
24	S22 AND S23	Expanders - Apply equivalent subjects Search modes - Find all my search terms	2,472
25	TI "Bright Futures" OR AB "Bright Futures"	Expanders - Apply equivalent subjects Search modes - Find all my search terms	80
26	S24 OR S25	Expanders - Apply equivalent subjects Search modes - Find all my search terms	2,551
27	S26	Limiters - Published Date: 20100101-20231031; English Language; Language: English Expanders - Apply equivalent subjects Search modes - Find all my search terms	2,055
28	((MH animals) NOT (MH humans)) OR ((TI bovine OR AB bovine) OR (TI canine OR AB canine) OR (TI capra OR AB capra) OR (TI cat OR AB cat) OR (TI cats OR AB cats) OR (TI cattle OR AB cattle) OR (TI cow OR AB cow) OR (TI cows OR AB cows) OR (TI dog OR AB dog) OR (TI dogs OR AB dogs) OR (TI equine OR AB equine) OR (TI ewe OR AB ewe) OR (TI ewes OR AB ewes) OR (TI feline OR AB feline) OR (TI goat OR AB goat) OR (TI goats OR AB goats) OR (TI hamster* OR AB hamster*) OR (TI horse OR AB horse) OR (TI horses OR AB horses) OR (TI invertebrate OR AB invertebrate) OR (TI invertebrates OR AB invertebrates) OR (TI macaque OR AB macaque) OR (TI macaques OR AB macaques) OR (TI mare OR AB mare) OR (TI mares OR AB mares) OR (TI mice OR AB mice) OR (TI monkey OR AB monkey) OR (TI monkeys OR AB monkeys) OR (TI mouse OR AB mouse) OR (TI murine OR AB murine) OR (TI nonhuman OR AB nonhuman) OR (TI non-human OR AB non-human) OR (TI ovine OR AB ovine) OR (TI pig OR AB pig) OR (TI pigs OR AB pigs) OR (TI porcine OR AB porcine) OR (TI primate OR AB primate) OR (TI primates OR AB primates) OR (TI rabbit OR AB rabbit) OR (TI rabbits OR AB rabbits) OR (TI rat OR AB rat) OR (TI rats OR AB rats) OR (TI rattus OR AB rattus) OR (TI rhesus OR AB rhesus) OR (TI rodent* OR AB rodent*) OR (TI sheep OR AB sheep) OR (TI simian OR AB simian) OR (TI sow OR AB sow) OR (TI sows OR AB sows) OR (TI vertebrate OR AB vertebrate) OR (TI vertebrates OR AB vertebrates)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	287,970

	OR (TI whale* OR AB whale*) OR (TI zebrafish OR AB zebrafish))		
29	S27 NOT S28	Expanders - Apply equivalent subjects Search modes - Find all my search terms	2,050
30	(MH "afghanistan") OR (MH africa) OR (MH "africa, northern") OR (MH "africa, central") OR (MH "africa, eastern") OR (MH "africa south of the sahara") OR (MH "africa, southern") OR (MH "africa, western") OR (MH albania) OR (MH algeria) OR (MH andorra) OR (MH angola) OR (MH "antigua and barbuda") OR (MH argentina) OR (MH armenia) OR (MH azerbaijan) OR (MH bahamas) OR (MH bahrain) OR (MH bangladesh) OR (MH barbados) OR (MH belize) OR (MH benin) OR (MH bhutan) OR (MH bolivia) OR (MH borneo) OR (MH "bosnia and herzegovina") OR (MH botswana) OR (MH brazil) OR (MH brunei) OR (MH bulgaria) OR (MH "burkina faso") OR (MH burundi) OR (MH "cabo verde") OR (MH cambodia) OR (MH cameroon) OR (MH "central african republic") OR (MH chad) OR (MH china+) OR (MH comoros) OR (MH congo) OR (MH croatia) OR (MH cuba) OR (MH "democratic republic of the congo") OR (MH cyprus) OR (MH djibouti) OR (MH dominica) OR (MH "dominican republic") OR (MH ecuador) OR (MH egypt) OR (MH "el salvador") OR (MH "equatorial guinea") OR (MH eritrea) OR (MH eswatini) OR (MH ethiopia) OR (MH fiji) OR (MH gabon) OR (MH gambia) OR (MH "georgia (republic)") OR (MH ghana) OR (MH grenada) OR (MH guatemala) OR (MH guinea) OR (MH guinea-bissau) OR (MH guyana) OR (MH haiti) OR (MH honduras) OR (MH "independent state of samoa") OR (MH india+) OR (MH "indian ocean islands") OR (MH indochina) OR (MH indonesia) OR (MH iran) OR (MH iraq) OR (MH jamaica) OR (MH jordan) OR (MH kazakhstan) OR (MH kenya) OR (MH kosovo) OR (MH kuwait) OR (MH kyrgyzstan) OR (MH laos) OR (MH lebanon) OR (MH liechtenstein) OR (MH lesotho) OR (MH liberia) OR (MH libya) OR (MH madagascar) OR (MH malaysia) OR (MH malawi) OR (MH mali) OR (MH malta) OR (MH mauritania) OR (MH mauritius) OR (MH "mekong valley") OR (MH melanesia) OR (MH micronesia) OR (MH monaco) OR (MH mongolia) OR (MH montenegro) OR (MH morocco) OR (MH mozambique) OR (MH myanmar) OR (MH namibia) OR (MH nepal) OR (MH nicaragua) OR (MH niger) OR (MH nigeria) OR (MH oman) OR (MH pakistan) OR (MH palau) OR (MH panama+) OR (MH "papua new guinea") OR (MH paraguay) OR (MH peru) OR (MH philippines) OR (MH qatar) OR (MH "republic of belarus") OR (MH "republic of north macedonia") OR (MH romania) OR (MH russia+) OR (MH rwanda) OR (MH "saint kitts and nevis") OR (MH "saint lucia") OR (MH "saint vincent and the grenadines") OR (MH "sao tome and principe") OR (MH "saudi arabia") OR (MH serbia) OR (MH "sierra leone") OR (MH senegal) OR (MH seychelles) OR (MH singapore) OR (MH somalia) OR (MH "south sudan") OR (MH "sri lanka") OR (MH sudan) OR (MH suriname) OR (MH syria) OR (MH	Expanders - Apply equivalent subjects Search modes - Find all my search terms	404,574

	taiwan) OR (MH tajikistan) OR (MH tanzania) OR (MH thailand) OR (MH timor-leste) OR (MH togo) OR (MH tonga) OR (MH "trinidad and tobago") OR (MH tunisia) OR (MH turkmenistan) OR (MH uganda) OR (MH ukraine) OR (MH "united arab emirates") OR (MH uruguay) OR (MH uzbekistan) OR (MH vanuatu) OR (MH venezuela) OR (MH vietnam) OR (MH "west indies") OR (MH yemen) OR (MH zambia) OR (MH zimbabwe)		
31	(MH "European Union") OR (MH "Developed Countries") OR (MH australasia) OR (MH australia+) OR (MH austria) OR (MH "baltic states") OR (MH belgium) OR (MH canada+) OR (MH chile) OR (MH colombia) OR (MH "costa rica") OR (MH "czech republic") OR (MH denmark+) OR (MH estonia) OR (MH europe) OR (MH finland) OR (MH france+) OR (MH germany+) OR (MH greece) OR (MH hungary) OR (MH iceland) OR (MH ireland) OR (MH israel) OR (MH italy+) OR (MH japan+) OR (MH korea) OR (MH latvia) OR (MH lithuania) OR (MH luxembourg) OR (MH mexico) OR (MH netherlands) OR (MH "new zealand") OR (MH "north america") OR (MH norway+) OR (MH poland) OR (MH portugal) OR (MH "republic of korea+") OR (MH "scandinavian and nordic countries") OR (MH slovakia) OR (MH slovenia) OR (MH spain) OR (MH sweden) OR (MH switzerland) OR (MH turkey) OR (MH "united kingdom+") OR (MH "united states+")	Expanders - Apply equivalent subjects Search modes - Find all my search terms	1,730,568
32	S30 NOT S31	Expanders - Apply equivalent subjects Search modes - Find all my search terms	371,635
33	S29 NOT S32	Expanders - Apply equivalent subjects Search modes - Find all my search terms	1,851
34	(MH "Adverse Childhood Experiences+") OR (MH "Autism Spectrum Disorder+") OR (MH "Autistic Disorder+") OR (TI autism) OR (TI autistic) OR (TI biomarker*) OR (TI breastfeed*) OR (TI "diagnostic accuracy") OR (MH Psychometrics+) OR (TI psychometric*) OR (MH "Reproducibility of Results+") OR (TI surgical) OR (TI surgery) OR (TI validation) OR (TI validity) OR (TI yoga)	Expanders - Apply equivalent subjects Search modes - Find all my search terms	390,811
35	S33 NOT S34	Expanders - Apply equivalent subjects Search modes - Find all my search terms	1,614
36	(MH "Systematic Reviews as Topic+") OR (SO "cochrane database syst rev" OR ST "cochrane database syst rev" OR IB "cochrane database syst rev") OR (TI "systematic literature review") OR (TI "systematic review") OR ((TI "systematic review" OR AB "systematic review") AND (PT review)) OR "this systematic review" OR (PT meta-analysis) OR (MH "meta-analysis as topic+") OR (TI meta-analyses OR AB meta-analyses) OR (TI meta-analysis OR AB meta-analysis) OR (TI "meta synthesis" OR AB "meta synthesis") OR (TI "Umbrella Review" OR AB "Umbrella Review")	Expanders - Apply equivalent subjects Search modes - Find all my search terms	231,126

37	S35 AND S36	Expanders - Apply equivalent subjects Search modes - Find all my search terms	107
38	(PT "randomized controlled trial") OR (PT "controlled clinical trial") OR (TI randomized OR AB randomized) OR (TI randomly OR AB randomly) OR (TI trial OR AB trial) OR (TI groups OR AB groups) OR (TI "Phase III" OR AB "Phase III") OR (TI "Phase 3" OR AB "Phase 3")	Expanders - Apply equivalent subjects Search modes - Find all my search terms	1,325,404
39	S35 AND S38	Expanders - Apply equivalent subjects Search modes - Find all my search terms	595
40	(MH "Cohort Studies+") OR cohort OR (PT "Clinical Trial") OR follow-up OR Followup OR "different models" OR longitudinal OR (MH "Research Design+") OR (PT "Evaluation Study") OR (PT "Comparative Study") OR ((comparative OR Intervention) AND study) OR "interrupted time*" OR "time serie*" OR intervention* OR ((quasi-experiment* OR quasiexperiment* OR quasi OR experimental) AND (method OR study OR trial OR design*)) OR "real world" OR “real-world”	Expanders - Apply equivalent subjects Search modes - Find all my search terms	1,649,885
41	S35 AND S40	Expanders - Apply equivalent subjects Search modes - Find all my search terms	995
42	S41 NOT ((PT review) OR (PT "meta analysis") OR "case report" OR (MH consensus+) OR (PT guideline) OR "History")	Expanders - Apply equivalent subjects Search modes - Find all my search terms	912
43	(MH "Interrupted Time Series Analysis+") OR TI "interrupted time series" OR AB "interrupted time series" OR TI "repeated measures" OR AB "repeated measures"	Expanders - Apply equivalent subjects Search modes - Find all my search terms	23,413
44	S35 AND S43	Expanders - Apply equivalent subjects Search modes - Find all my search terms	20

Gray Literature Search Strings

ClinicalTrials.Gov

Search date: 10/17/2023
39 results

Condition box:
"Substance-Related Disorders" OR "Mental Health Services" OR "Social Behavior Disorders"[Mesh] OR "mental disorder*" OR "substance abuse" OR "Adjustment Disorders" OR Anorex* OR "Antisocial Personality" OR "behavior disorder*" OR "behaviour disorder*" OR "behavioral health" OR "behavioural health" OR Bipolar OR "Borderline Personality" OR "Capgras Syndrome" OR "Compulsive Personality" OR "Conversion Disorder" OR Cyclothym* OR "Dependent Personality" OR Disruptive Disorder* OR "Impulse Control Disorder*" OR dissociative OR dissociation OR Dyssomnia* OR "Emotional disorder*" OR "Emotion Disorder*" OR Exhibitionis* OR "Factitious Disorder*" OR "Food Addiction" OR "Gender Dysphoria" OR "Histrionic Personality" OR hypochondria* OR hypochondria OR Masochis* OR "mood disorder*" OR "Obsessive-Compulsive Disorder*" OR "Orthorexia Nervosa" OR "Panic Disorder" OR paranoi* OR Paraphili* OR Parasomnia* OR "Passive-Aggressive Personality" OR "Personality Disorder*" OR "Phobic Disorder*" OR phobia* OR "Reactive Attachment" OR Rumination OR Sadis* OR "Schizoid Personality" OR "Schizotypal Personality" OR "Sexual and Gender Disorder*" OR "Sleep Wake Disorder*" OR "social anxiety disorder*" OR "social behavior disorder" OR "social behaviour disorder" OR "Somatoform Disorder*"

Interventions box:
"Mass Screening" OR "Motivational Interviewing" OR "Risk Assessment" OR screening OR screened OR screens OR screenings OR "brief intervention" OR "brief interventions" OR "preventive care" OR "preventive intervention" OR "preventive interventions" OR "preventive behavioral health" OR "preventive mental health" OR "preventive psychosocial" OR "recommended intervention*" OR counseling OR counselling OR counsel OR counseled OR counselled OR counsels OR "Mass Screening" OR "Motivational Interviewing" OR "Risk Assessment" OR screening OR screened OR screens OR screenings OR "brief intervention" OR "brief interventions" OR "preventive care" OR "preventive intervention" OR "preventive interventions" OR "preventive behavioral health" OR "preventive mental health" OR "preventive psychosocial" OR "recommended intervention*" OR counseling OR counselling OR counsel OR counseled OR counselled OR counsels

Other terms box (Implementation terms):
"Community Health Planning" OR "Health Plan Implementation" OR "Implementation Science" OR "implementation strategy" OR "implementation strategies" OR "implementation research" OR "implementation model*" OR "implementation framework*" OR acceptability OR acceptable OR Actionable OR Actionability OR Adoption OR acceptability OR "Quality Improvement" OR QI OR sustainment OR sustainability OR program* OR diffusion or dissemination

Limiters

Limited to Last Update Posted 01/01/2021 – 10/10/2023
Limited to Child checkbox and studies accept healthy volunteers

AHRQ's Academy for Integrating Behavioral Health and Primary Care website

Search date: 10/17/2023
21 results
("mental health services" OR "substance abuse") AND screening AND implementation* AND prevent* AND (child* OR adolescent*)
Limited to search for only reports and government reports within the gray literature portion of the collection:
Further limited to 2023

MedRXiv

Search date: 10/17/2023
97 results
("mental health services" OR "substance abuse") AND (screen* OR counsel*) AND implementation* AND (primary care)" and posted between "01 Jan, 2010 and 17 Oct, 2023"

TRIP Medical Database

Search date: 10/17/2023
18 results
Simple Search: ("mental health services" OR "substance abuse") AND (screening OR counseling OR counselling) AND implementation* AND prevent* AND (child* OR adolescent*)

Google Advanced search

Search date: 10/17/2023
Number of results returned not given; saved first 30 results

ANY of these words:
"mental health services" "substance abuse"

ALL of the words
screening implementation* prevent*

None of the words:
Adult*
Search English pages

Custom dates: Jan 1, 2010 – Dec 31, 2023

Inclusion and Exclusion Criteria

Table A-5 lists the inclusion and exclusion criteria.

Table A-5. PICOTS Inclusion and Exclusion Criteria

PICOTS	Inclusion	Exclusion
Population at risk	Individuals 18 years of age or younger receiving primary healthcare services (studies with a mix of patients both younger than and older than 18 years of age will be included as long as at least 80% of the population is younger than 21 years of age)[a] Population subgroups: Child/patient age, gender/sex identity, sexual orientation, race/ethnicity, physical or mental disability, socioeconomic status, insurance status/type (mental health coverage), families with low health or limited digital literacy, urban/rural dwelling with limited access to technology or the internet, those living in unstable circumstances, immigrants, refugees, and those with limited English proficiency	Individuals older than 18 years of age
Interventions	Clinical interventions focused on individuals 18 years of age or younger or their caregivers to prevent mental health disorders in populations at risk recommended by • Bright Futures Periodicity Schedule – Maternal Depression Screening (for teenage mothers) – Behavioral/Social/Emotional Screening – Tobacco, Alcohol, or Drug Use Assessment – Depression and Suicide Risk Screening • USPSTF (including interventions with insufficient evidence) – Screening for Anxiety (B, I Grades) – Screening for Depression and Suicide Risk (B and I Grades) – Screening for Eating Disorders (adolescents only; I Grade) – Counseling regarding unhealthy Drug Use (adolescent only; B and I Grades) – Counseling regarding Illicit Drug Use (I Grade) – Counseling regarding Tobacco Use (B and I Grades) – Counseling regarding Unhealthy Alcohol Use (adolescents only; B and I Grades)	Clinical interventions • Interventions recommended in the Bright Futures Periodicity Schedule or by the USPSTF to prevent developmental disorders • Interventions to prevent mental health disorders not recommended in the Bright Futures Periodicity Schedule or by the USPSTF • Treatments of mental health disorders

	Implementation interventions[b] drawn from the Expert Recommendations for Implementing Change (ERIC)[1] and the Effective Practice and Organisation of Care (EPOC) Taxonomy,[2, 3] including implementation interventions with a Screening, Brief Intervention, and Referral to Treatment (SBIRT) design: • Evaluate and iterate implementation (e.g., conduct needs assessment, assess for readiness; develop implementation plan; develop quality monitoring systems; develop tools for quality monitoring, public reporting, audit, and feedback; conduct cyclical tests of change; obtain and use patient and family feedback; stage implementation scale-up) • Provide interactive assistance (e.g., provide local technical assistance, centralize technical assistance, provide facilitation, provide clinical supervision) • Adapt and tailor to context (e.g., use data experts, use data warehousing techniques, promote adaptability of the intervention, tailor implementation to address barriers and facilitators) • Develop relationships with internal and external partners (e.g., develop academic partnerships, conduct local consensus discussions to partner with community members, build a coalition, obtain formal commitments, use an implementation adviser, visit other sites, change organizational culture, involve executive boards, recruit and train leaders for implementation, use community advisory boards and workgroups, inform local opinion leaders, identify early adopters, identify and prepare champions, model and simulate change, promote network weaving, capture and share local knowledge, develop an implementation glossary) • Train and educate stakeholders (e.g., distribute educational materials, conduct educational meetings, conduct educational outreach visits, shadow other experts, create a learning collaborative, use a train-the-trainer model, conduct ongoing training, provide ongoing consultation) • Support clinicians (e.g., facilitate the relay of clinical data to providers, develop a resource sharing agreement, revise professional roles, create new clinical teams, provide clinicians with reminders) • Engage consumers (e.g., use mass media, increase demand, involve patients and families, intervene with patients and families to enhance intervention uptake and adherence, prepare patients and families to be active participants) • Utilize financial strategies (e.g., access new funding, alter incentive structures, place intervention on fee-for-service lists/formularies, make billing easier, use capitated payments, fund and contract for the intervention, develop disincentives for failure to implement interventions, alter patient fees) • Change infrastructure (e.g., change health system oversight, grow workforce, create or change credentialing or licensure standards, change accreditation or membership requirements, change liability laws, change intervention oversight, mandate change, change physical structure and equipment, change record systems, change service sites, modify	Implementation interventions • Interventions not designed specifically to support implementation of eligible clinical interventions

PICOTS	Inclusion	Exclusion
	workflow and processes, start a dissemination organization)	
	Potential effect modifiers: • Setting characteristics: type of setting, type of practice/providers, structure, size, staffing, readiness for implementation, use of health information technology • Care delivery characteristics: accessibility, continuity, timeliness, equitability, cultural competence • Strategy characteristics: complexity, number of components, Intensity/frequency/duration, costs, etc.	
Comparators	• Other implementation strategy • No implementation strategy	No comparator
Outcomes	Implementation outcomes • Appropriateness • Acceptability • Feasibility • Adoption • Implementation costs • Fidelity • Penetration • Sustainability Service outcomes • Rate of referral • Initiation of treatment • Continuity of care • Address a positive screen • Efficiency • Equity/Disparity (KQ 1b) • Opportunity cost of other services • Timeliness • Professional satisfaction • Staff turnover • Clinician burnout Patient outcomes • Functional capacity • Mental health • Progression to diagnosis • Patient satisfaction • Quality of life • Adverse events • Unintended effects other than adverse events (e.g., stigma)	Outcomes not listed
Timing	Studies published in 2010 or later with any length of followup	• Studies published before 2010
Setting(s)	Primary care settings in the United States that traditionally deliver preventive interventions (including pre-visit, in waiting rooms, and during the encounter with clinician) • Primary care practices (including FQHCs) • School-based clinics	• Settings outside of the United States • Urgent care, emergency departments, trauma centers, neonatal intensive care units • Schools (without school-based clinics) • Carceral system settings • Community-based settings

PICOTS	Inclusion	Exclusion
Study Design	Comparative studies that assess the impact of an implementation strategy compared with no strategy or another implementation strategy: • RCT • Nonrandomized controlled studies • Interrupted time series	• Systematic reviews, scoping reviews, and other types of evidence synthesis (will be used for searching reference lists) • Studies without a control group (except interrupted time series) • Pre-post studies • Narrative reviews, editorials, commentaries • Study protocols

[a] Includes clinical interventions focused on caregivers.
[b] May focus on caregivers and providers.
FQHC = Federally Qualified Health Center; KQ = Key Question; PICOTS = population, interventions, comparators, outcomes, timing, and setting; RCT = randomized controlled trial; USPSTF = U.S. Preventive Services Task Force.

Study Selection

We used DistillerSR for literature screening, leveraging its artificial intelligence (AI) capabilities to continually prioritize abstracts with a high likelihood of meeting our inclusion criteria. Two investigators independently screened the top 70 percent of these prioritized abstracts against predefined inclusion and exclusion criteria. For the remaining 30 percent of abstracts, we substituted one investigator with DistillerSR's AI function that had been trained based on the investigator's selections of the dual-screening abstracts. Any discrepancies between human investigators and DistillerSR were resolved through review by an additional investigator. We also employed DistillerSR's AI function to check for screening errors to vet dual exclusions of abstracts. Studies marked for possible inclusion underwent a full-text review. For studies without adequate information to determine inclusion or exclusion, we retrieved the full text. All results were tracked in DistillerSR.

Two trained team members independently reviewed each full-text article for inclusion or exclusion based on the eligibility criteria. If both reviewers agreed that a study did not meet the eligibility criteria, the study was excluded. Conflicts in decisions were resolved by discussion and consensus or by consulting a third member of the review team. We recorded the reasons for exclusions of full-text publications.

Data Extraction

For studies that met our inclusion criteria, we extracted and organized relevant information into evidence tables. To ensure a systematic approach, we designed data extraction forms in DistillerSR to gather pertinent information, including characteristics of study populations, settings, clinical interventions, implementation strategies, comparators, study designs, methods, and results. After the extracted forms were pilot tested, trained reviewers extracted the relevant data from each included article. A second member of the team reviewed data extractions for completeness and accuracy.

Risk of Bias Assessment

Table A-6 presents the definitions of the risk of bias categories.[4]

Table A-6. Definitions of risk of bias categories

Overall risk of bias judgment	Criteria
Low risk of bias	The study is judged to be at low risk of bias for all domains for this result.
Some concerns	The study is judged to raise some concerns in at least one domain for this result, but not to be at high risk of bias for any domain.
High risk of bias	The study is judged to be at high risk of bias in at least one domain for this result. Or The study is judged to have some concerns for multiple domains in a way that substantially lowers confidence in the result.

Data Synthesis and Analysis

Table A-7 presents the framework of implementation strategies, which was adapted from the Expert Recommendations for Implementing Change (ERIC)[1] and Effective Practice and Organisation of Care (EPOC)[2, 3] frameworks.

Table A-7. ERIC and EPOC framework crosswalk and definitions

ERIC Strategy (Definition)	EPOC Strategy (Definition)
Evaluative and Iterative Strategies	
Assess for Readiness and Identify Barriers and Facilitators (Assess various aspects of an organization to determine its degree of readiness to implement and barriers and strengths that may impede or benefit the implementation effort)	N/A
Audit and Provide Feedback (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	Audit and feedback (A summary of health workers' performance over a specified period of time, given to them in a written, electronic or verbal format. The summary may include recommendations for clinical action)
N/A	Public release of performance data (Informing the public about healthcare providers by the release of performance data in written or electronic form.)
Purposefully Reexamine the Implementation (Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically)	N/A
Develop and Implement Tools for Quality Monitoring (Develop, test, and introduce into quality-monitoring systems the right input – the appropriate language, protocols, algorithms, standards, and measures (of processes, patient/consumer outcomes, and implementation outcomes) that are often specific to the innovation being implemented)	N/A
Develop and Organize Quality Monitoring Systems (Collect and analyze data related to the need for the innovation)	Quality and safety systems (Informing the public about healthcare providers by the release of performance data in written or electronic form.)
N/A	Monitoring the performance of the delivery of healthcare (Monitoring of health services by individuals or healthcare organisations, for example by comparing with an external standard.)

ERIC Strategy (Definition)	EPOC Strategy (Definition)
N/A	Clinical incident reporting (Introduction, modification or removal of strategies to improve the coordination and continuity of delivery of services i.e., improving the management of one “case” (patient))
Develop a Formal Implementation Blueprint (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	N/A
Conduct Local Needs Assessment (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	N/A
Stage Implementation Scale Up (Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically)	N/A
Obtain and Use Patient/Consumers and Family Feedback (Develop strategies to increase patient/consumer and family feedback on the implementation effort)	N/A
Conduct Cyclical Small Tests of Change (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	Continuous quality improvement (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
Provide Interactive Assistance	
Facilitation (Collect and analyze data related to the need for the innovation)	N/A
Provide Local Technical Assistance (Develop and use a centralized system to deliver technical assistance focused on implementation issues)	N/A
Provide Clinical Supervision (Provide clinicians with ongoing supervision focusing on the innovation; Provide training for clinical supervisors who will supervise clinicians who provide the innovation)	Managerial supervision (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
Centralize Technical Assistance (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	N/A
Adapt and Tailor to Context	
Tailor Strategies (Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically)	N/A
Promote Adaptability (A process of interactive problem solving and support that occurs in a context of a recognized need for improvement and a supportive interpersonal relationship)	Tailored interventions (Interventions to change practice that are selected based on an assessment of barriers to change, for example through interviews or surveys.)
N/A	Group versus individual care (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)

ERIC Strategy (Definition)	EPOC Strategy (Definition)
Use Data Experts (Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically)	N/A
Use Data Warehousing Techniques (Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically)	N/A
Develop Stakeholder Interrelationships	
N/A	Organisational culture (Routine supervision visits by health staff.)
N/A	Exit interviews (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
Identify and Prepare Champions (Collect and analyze data related to the need for the innovation)	N/A
Organize Clinician Implementation Team Meetings (A process of interactive problem solving and support that occurs in a context of a recognized need for improvement and a supportive interpersonal relationship)	N/A
Recruit, Designate, and Train for Leadership (Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically)	N/A
Inform Local Opinion Leaders (Collect and analyze data related to the need for the innovation)	Local opinion leaders (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
Build a Coalition (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	Community mobilization (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
Obtain Formal Commitments (A process of interactive problem solving and support that occurs in a context of a recognized need for improvement and a supportive interpersonal relationship)	Multi-institutional arrangements (Routine supervision visits by health staff.)
Identify Early Adopters (Collect and analyze data related to the need for the innovation)	N/A
Conduct Local Consensus Discussions (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	Local consensus processes (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
Capture and Share Local Knowledge (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	N/A
Use Advisory Boards and Workgroups (Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically)	N/A

ERIC Strategy (Definition)	EPOC Strategy (Definition)
Use an Implementation Advisor (Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically)	N/A
Model and Simulate Change (Collect and analyze data related to the need for the innovation)	N/A
Visit Other Sites (Participate in liability reform efforts that motivate clinicians to deliver the clinical innovation)	N/A
Involve Executive Boards (Collect and analyze data related to the need for the innovation)	N/A
Develop an Implementation Glossary (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	N/A
Develop Academic Partnerships (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	N/A
Promote Network Weaving (A process of interactive problem solving and support that occurs in a context of a recognized need for improvement and a supportive interpersonal relationship)	Communication between providers (Systems or strategies for improving the communication between health care providers, for example systems to improve immunization coverage in LMIC)
N/A	Referral systems (Informing the public about healthcare providers by the release of performance data in written or electronic form.)
N/A	Shared care (Routine administration and reporting of patient- reported outcome measures to providers and/or patients)
N/A	Transition of Care (Health promotion in dental settings)
N/A	Communities of practice (Systems or strategies for improving the communication between health care providers, for example systems to improve immunization coverage in LMIC)
Train and Educate Stakeholders	
Conduct Ongoing Training (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	N/A
Provide Ongoing Consultation (Provide ongoing consultation with experts in strategies used to support innovation implementation)	N/A
Develop Educational Materials (Collect and analyze data related to the need for the innovation)	Clinical Practice Guidelines (Introduction, modification or removal of strategies to improve the coordination and continuity of delivery of services i.e. improving the management of one “case” (patient))
Make Training Dynamic (Collect and analyze data related to the need for the innovation)	Educational games (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
Distribute Educational Materials (Collect and analyze data related to the need for the innovation)	Educational materials (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)

ERIC Strategy (Definition)	EPOC Strategy (Definition)
Use Train-the-Trainer Strategies (Participate in liability reform efforts that motivate clinicians to deliver the clinical innovation)	N/A
Conduct Educational Meetings (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	Educational meetings (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
Conduct Educational Outreach Visits (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	Educational outreach visits, or academic detailing. (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
Create a Learning Collaborative (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	N/A
Shadow Other Experts (Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically)	N/A
Work with Educational Institutions (Participate in liability reform efforts that motivate clinicians to deliver the clinical innovation)	Pre-licensure education (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)
N/A	Inter-professional education (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
Support Clinicians	
Facilitate Relay of Clinical Data to Providers (Collect and analyze data related to the need for the innovation)	Routine patient-reported outcome measures (Routine administration and reporting of patient- reported outcome measures to providers and/or patients)
Remind Clinicians (Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically)	Reminders (Manual or computerised interventions that prompt health workers to perform an action during a consultation with a patient, for example computer decision support systems.)
Develop Resource Sharing Agreements (Collect and analyze data related to the need for the innovation)	Staff recruitment and retention strategies for underserved areas (Routine administration and reporting of patient- reported outcome measures to providers and/or patients)
Revise Professional Roles (Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically)	Role expansion or task shifting (Manual or computerised interventions that prompt health workers to perform an action during a consultation with a patient, for example computer decision support systems.)
Create New Clinical Teams (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	Coordination of care amongst different provider (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
N/A	Size of organizations (Routine administration and reporting of patient- reported outcome measures to providers and/or patients)

ERIC Strategy (Definition)	EPOC Strategy (Definition)
N/A	Staffing models (Routine administration and reporting of patient- reported outcome measures to providers and/or patients)
N/A	Teams (Health promotion in dental settings)
Engage Consumers	
Involve Patients/Consumers and Family Members (Collect and analyze data related to the need for the innovation)	N/A
Intervene with Patients/Consumers to Enhance Uptake and Adherence (Collect and analyze data related to the need for the innovation)	Comprehensive geriatric assessment (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
Prepare Patients/Consumers to be Active Participants (A process of interactive problem solving and support that occurs in a context of a recognized need for improvement and a supportive interpersonal relationship)	Self-management (Routine administration and reporting of patient- reported outcome measures to providers and/or patients)
N/A	Patient-initiated appointment systems (Routine supervision visits by health staff.)
N/A	Shared decision-making (Routine administration and reporting of patient- reported outcome measures to providers and/or patients)
N/A	Smart home technologies (Routine administration and reporting of patient- reported outcome measures to providers and/or patients)
N/A	Patient-mediated interventions (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)
Increase Demand (Collect and analyze data related to the need for the innovation)	N/A
Use Mass Media (Use media to reach large numbers of people to spread the word about the clinical innovation)	N/A
Utilize Financial Strategies	
Fund and Contract for the Clinical Innovation (Collect and analyze data related to the need for the innovation)	Contracting out health services (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
Access new funding (Access new or existing money to facilitate the implementation)	External funding (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
Place Innovation on Fee for Service Lists/Formularies (A process of interactive problem solving and support that occurs in a context of a recognized need for improvement and a supportive interpersonal relationship)	Pricing and purchasing policies (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)
N/A	Insurance (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)

ERIC Strategy (Definition)	EPOC Strategy (Definition)
N/A	Decision-making about what or who is covered (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
Alter incentive/allow structures (Work to incentivize the adoption and implementation of the clinical innovation)	Payment methods for health workers (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)
N/A	Pay for performance – target payments (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)
N/A	Fund holding (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
Make Billing Easier (Collect and analyze data related to the need for the innovation)	Method of paying healthcare organisations (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
Alter patient/consumer fees (Create fee structures where patient/consumers pay less for preferred treatments (the clinical innovation) and more for less-preferred treatments)	User fees or out of pocket payments (Health promotion in dental settings)
N/A	Caps and co-payments for drugs of health services (Direct patient payments for part of the cost of drugs or health services)
N/A	Health savings accounts (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
N/A	Prepaid funding (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)
N/A	Community based health insurance (Systems or strategies for improving the communication between health care providers, for example systems to improve immunization coverage in LMIC)
N/A	Private health insurance (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)
N/A	Conditional cash transfers (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)

ERIC Strategy (Definition)	EPOC Strategy (Definition)
Use Other Payment Schemes (Participate in liability reform efforts that motivate clinicians to deliver the clinical innovation)	Community loan funds (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
N/A	Social health insurance (Routine administration and reporting of patient- reported outcome measures to providers and/or patients)
N/A	Voucher schemes (Health promotion in dental settings)
Develop Disincentives (Collect and analyze data related to the need for the innovation)	N/A
Use Capitated Payments (Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically)	N/A
Change Infrastructure	
N/A	Decentralisation and centralisation (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
N/A	Stewardship of private health services (Routine administration and reporting of patient- reported outcome measures to providers and/or patients)
N/A	Policies to reduce corruption (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)
N/A	Policies to manage absenteeism (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)
N/A	Ownership (Routine supervision visits by health staff.)
N/A	Incentives for career choices (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
N/A	Health professional emigration and immigration policies (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
N/A	Movement of health workers between public and private care (Routine supervision visits by health staff.)
N/A	Dual practice (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
N/A	Stakeholder involvement in policy decisions (Routine administration and reporting of patient- reported outcome measures to providers and/or patients)

ERIC Strategy (Definition)	EPOC Strategy (Definition)
N/A	Patients' rights (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)
Mandate Change (Collect and analyze data related to the need for the innovation)	N/A
Change Record Systems (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	The use of information and communication technology (Health promotion in dental settings)
N/A	Health information systems (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
Change Physical Structure and Equipment (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	Environment (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
Create or Change Credentialing and/or Licensure Standards (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	Training and licensing (Health promotion in dental settings)
N/A	Scope of practice (Routine administration and reporting of patient- reported outcome measures to providers and/or patients)
Change Service Sites (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	Site of service delivery (Routine administration and reporting of patient- reported outcome measures to providers and/or patients)
N/A	Outreach services (Routine supervision visits by health staff.)
N/A	Transportation services (Health promotion in dental settings)
N/A	Integration (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
N/A	Telemedicine (Health promotion in dental settings)
Change Accreditation or Membership Requirements (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	Acceditation (Processes for accrediting healthcare providers)

ERIC Strategy (Definition)	EPOC Strategy (Definition)
N/A	Authority and accountability for quality of practice (Policies for how multiple organizations work together, Policies that regulate interactions between donors and governments, Social Franchising. Governance arrangements for coordinating care across multiple providers, Mergers, Collaborations between local health and local government agencies for health improvement)
N/A	Professional competence (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)
Start a Dissemination Organization (Distribute educational materials (including guidelines, manuals, and toolkits) in person, by mail, and/or electronically)	N/A
Change Liability Laws (Collect and summarize clinical performance data over a specified time period and give it to clinicians and admissions to monitor, evaluate, and modify provider behavior)	Liability of healthcare organisations (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
N/A	Liability for commercial products (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
N/A	Professional liability (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)
N/A	Patents and profits (Routine supervision visits by health staff.)
N/A	Registration (Informing the public about healthcare providers by the release of performance data in written or electronic form.)
N/A	Marketing regulations (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
N/A	Sales and dispensing (Routine administration and reporting of patient- reported outcome measures to providers and/or patients)
N/A	Procurement and distribution of supplies (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)
N/A	Queuing strategies (Informing the public about healthcare providers by the release of performance data in written or electronic form.)
N/A	Triage (Health promotion in dental settings)
N/A	Length of consultation (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)

ERIC Strategy (Definition)	EPOC Strategy (Definition)
N/A	Case management (Introduction, modification or removal of strategies to improve the coordination and continuity of delivery of services i.e. improving the management of one “case” (patient))
N/A	Continuity of care (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
N/A	Discharge planning (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
Select Appropriate Interventions	
N/A	Care pathways (Aim to link evidence to practice for specific health conditions and local arrangements for delivering care)
N/A	Disease management (Funds generated from contributions of community members that families can borrow to pay for emergency transportation and hospital costs)
N/A	Packages of care (Routine supervision visits by health staff.)
N/A	Prescribing (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)
N/A	Health conditions (Financial contributions such as donations, loans, etc. from public or private entities from outside the national or local health financing system)
N/A	Practice and setting (Any intervention aimed at changing the performance of healthcare professionals through interactions with patients, or information provided by or to patients.)

EPOC = Effective Practice and Organisation of Care; ERIC = Expert Recommendations for Implementing Change; N/A = not applicable; vs = versus.

Grading the Strength of the Body of Evidence

Technical Expert Panel (TEP) members rated the relative importance of eligible outcomes on a Likert scale from 1 to 9, where 1 is the least important and 9 the most important for decision-making. **Table A-8** presents the results of the ratings.

Table A-8. TEP ratings of the relative importance of outcomes

Outcome	Mean	Median	Standard Deviation	Outcome Type
Equity[a]	8.7	9.0	0.7	Service
Address a positive screen (other than through initiation of treatment)[a]	8.6	9.0	1.0	Service
Mental health[a]	8.5	9.0	0.8	Patient
Acceptability[a]	8.3	8.0	0.7	Implementation
Quality of life[a]	8.3	8.0	0.7	Patient
Adverse events[a]	8.3	9.0	1.1	Patient

Outcome	Mean	Median	Standard Deviation	Outcome Type
Feasibility[a]	8.1	8.0	1.0	Implementation
Functional capacity	8.1	8.0	0.9	Patient
Patient satisfaction	8	8.5	1.2	Patient
Sustainability[a]	7.9	8.0	0.9	Implementation
Initiation of treatment[a]	7.6	8.0	1.8	Service
Unintended effects other than adverse events (e.g., stigma)	7.6	8.0	1.3	Patient
Adoption	7.5	7.5	1.5	Implementation
Fidelity	7.5	7.5	1.5	Implementation
Continuity of care	7.5	7.0	1.4	Service
Appropriateness	7.4	8.0	2.1	Implementation
Progression to diagnosis	7.4	7.5	1.0	Patient
Timeliness	7	7.0	1.2	Service
Efficiency	6.9	7.0	1.4	Service
Professional satisfaction	6.6	7.0	1.4	Service
Opportunity cost of other services	6.5	7.0	1.6	Service
Reach[a]	6.4	7.0	2.0	Implementation
Rate of referral	6.4	6.0	1.9	Service
Clinician burnout	6.3	6.0	1.9	Service
Implementation Costs	6.2	6.0	1.4	Implementation
Staff turnover	5.6	5.5	2.0	Service

[a] Outcomes that were selected for grading strength of evidence based on the TEP's mean rating or by the review team's determination of the outcome's importance to the topic.
TEP = Technical Expert Panel.

Two trained reviewers assessed each Grading of Recommendations Assessment, Development and Evaluation (GRADE) domain for each outcome, differences were resolved by consensus. One of the two reviewers was a senior researcher with experience in grading the strength of evidence (SOE). We used the Guideline Development Tool (http://www.guidelinedevelopment.org/) to grade the SOE in a standardized manner and to develop Summary of Findings tables. For this review, we used a minimally contextualized approach.[5] For judging imprecision, we used the null (no effect) as a threshold for benefits and harms. The definitions of the grades and overall strength of evidence ratings are included in **Table A-9.**

Table A-9. Definitions of the grades of overall strength of evidence[5]

Grade	Definition
High	We are very confident that the estimate of effect lies close to the true effect for this outcome. The body of evidence has few or no deficiencies. We believe that the findings are stable (i.e., another study would not change the conclusions).
Moderate	We are moderately confident that the estimate of effect lies close to the true effect for this outcome. The body of evidence has some deficiencies. We believe that the findings are likely to be stable, but some doubt remains.
Low	We have limited confidence that the estimate of effect lies close to the true effect for this outcome. The body of evidence has major or numerous deficiencies (or both). We believe that additional

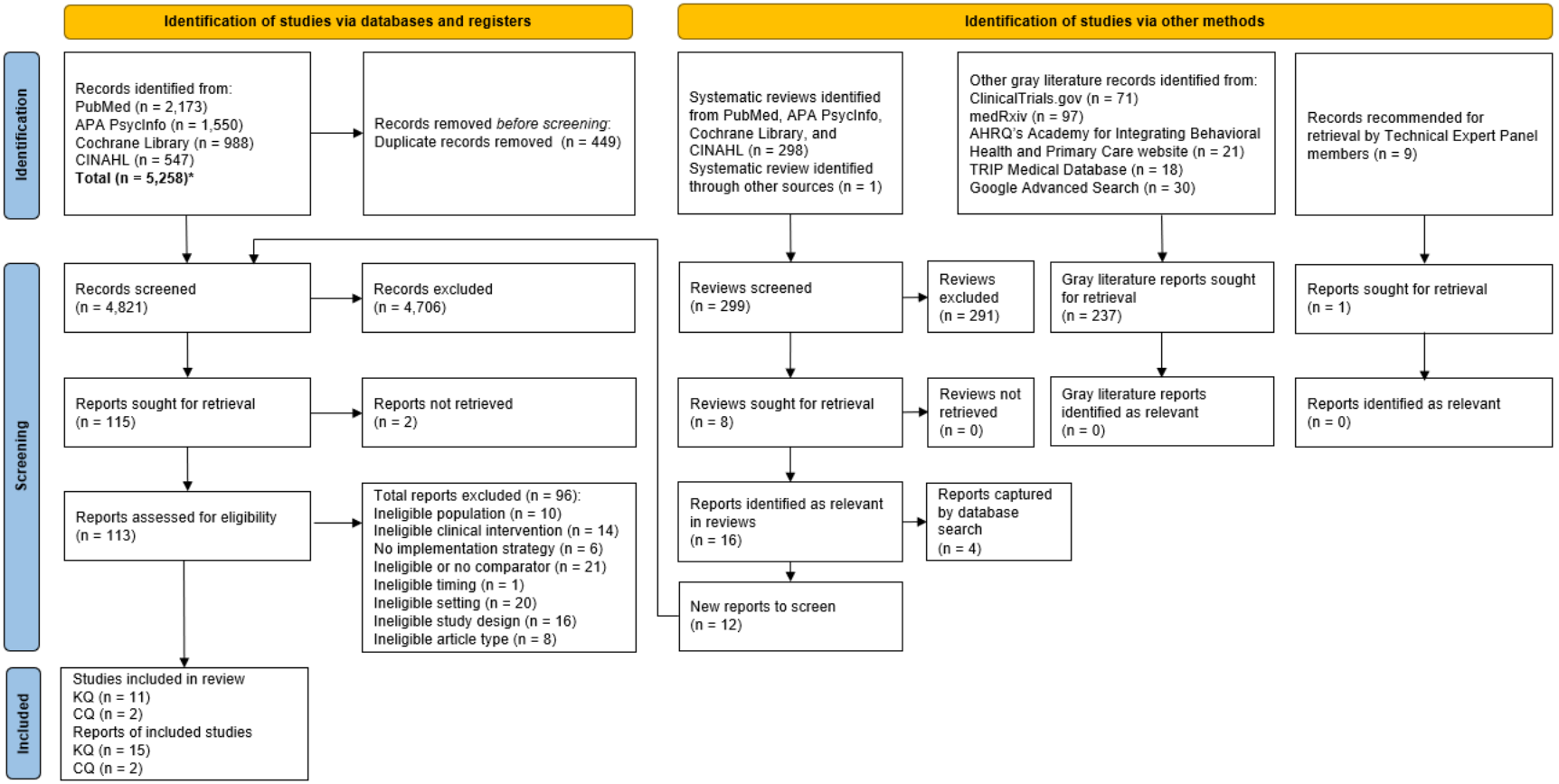
Grade	Definition
	evidence is needed before concluding either that the findings are stable or that the estimate of effect is close to the true effect.
Insufficient	We have no evidence, we are unable to estimate an effect, or we have no confidence in the estimate of effect for this outcome. No evidence is available, or the body of evidence has unacceptable deficiencies, precluding reaching a conclusion.

Appendix B. Results

Results of Literature Searches

Database searches, hand searches of relevant systematic reviews, and gray literature searches identified 4,821 unique records. Among those, 4,706 were excluded at title and abstract review and the remaining 115 were eligible for full-text review, of which 113 were retrieved and reviewed. Among those, 96 were excluded: 10 for ineligible population, 14 for ineligible clinical intervention, 6 for no implementation strategy, 21 for ineligible or no comparator, 1 for ineligible timing, 20 for ineligible setting, 16 for ineligible study design, and 8 for ineligible article type. In total, 13 studies reported in 17 publications were included. The final row of **Figure B-1** shows 11 studies in 15 publications were included for Key Question (KQ) 1 and 2 studies were included for Contextual Question (CQ) 1.

Figure B-1. Literature flow diagram



*Database search yielded 490 trial registry (gray literature) records, all of which were excluded during screening.
AHRQ = Agency for Healthcare Research and Quality; APA = American Psychological Association; CINAHL = Cumulative Index to Nursing and Allied Health Literature; CQ = Contextual Question; KQ = Key Question; n = number; TRIP = Turning Research Into Practice.

Description of Included Studies

Key Question 1

Detailed Study and Population Characteristics

Detailed study and population characteristics for included studies are reported by clinical area in **Table B-1**, **Table B-2**, **Table B-3**, and **Table B-4**.

Table B-1. Detailed study and population characteristics of included studies on screening for depression

Author, Year Trial Name Study Design Trial Registry Number Funder/Sponsor Risk of Bias	Clinical Intervention, Goal of Implementation Strategy	Intervention and Comparator(s) (N)	Population of Focus	Patient Age, Years Gender	Setting/Clinic Type	Implementation Period	Other Population Characteristics
Harder, 2019[6] Nonrandomized controlled trial Registry number NR State of Vermont Risk of bias: High	Depression and suicide risk screening Practices chose the depression screening tool that worked best for their practice from those listed in the AAP Mental Health Toolkit.	Intervention: QI learning collaborative N Patients: 792 N Providers/clinics: 17 practices Comparator strategy: No strategy N Patients: 772 N Providers/clinics: 21 practices	12- to 18-year-old patients attending a health supervision visit	Range 14 to 16 N (%) Female Intervention: 416 (53%), Comparator strategy: 397 (51%)	Physicians, nurses at pediatric and family medicine practices (Vermont Child Health Improvement Program's CHAMP QI network)	19 months (7 months implementation period and 1-year followup)	Not reported Medicaid Intervention: 263 (33%) Comparator strategy: 306 (40%) In largest metropolitan area Intervention: 375 (47%) Comparator strategy: 237 (31%) Federally qualified/certified rural Intervention: 86 (11%) Comparator strategy: 217 (28%)

Author, Year Trial Name Study Design Trial Registry Number Funder/Sponsor Risk of Bias	Clinical Intervention, Goal of Implementation Strategy	Intervention and Comparator(s) (N)	Population of Focus	Patient Age, Years Gender	Setting/Clinic Type	Implementation Period	Other Population Characteristics
Dalal, 2023[7] Nonrandomized controlled trial Not registered Fuss Family Fund; Reliant Medical Group Risk of bias: High	Depression and suicide risk screening 2-stage depression screening and followup process in line with the 2-part AAP guideline. RMG's 2-instrument screening protocol recommended that adolescents scoring at risk on the overall and/or internalizing scales of a parent- or youth-reported PSC-17 (PSC-OVR or PSC-INT) should have a followup screen with a youth-reported PHQ-9.	Intervention: Support clinicians (2-stage depression screening and followup process) N Patients: 891 allocated and analyzed Comparator strategy: No implementation strategy N Patients: 1,756 allocated and analyzed	Adolescents ages 12 to 18 years screening at risk for depression on the PSC-17	14.86 (SD, 1.72) N (%) Female 1,302 (49.2%)	Primary care physicians at 9 pediatric primary care practices in the RMG private practice network in Central and MetroWest Massachusetts	3 months	Race/ethnicity Hispanic: 247 (15.4%) Non-Hispanic (n=1,608) 1,361 (84.6%) Asian: 179 (8.7%) Black: 125 (6.1%) Native American: 29 (1.4%) White (n=2,054): 1,721 (83.8%) Preferred language English: 2,474 (94.0%) Spanish: 89 (3.4%) Other (n=2,632): 69 (2.6%)

Author, Year Trial Name Study Design Trial Registry Number Funder/Sponsor Risk of Bias	Clinical Intervention, Goal of Implementation Strategy	Intervention and Comparator(s) (N)	Population of Focus	Patient Age, Years Gender	Setting/Clinic Type	Implementation Period	Other Population Characteristics
Baum 2020[8] Interrupted time series (Quality Improvement Centerline Shift Analysis) Not registered Funding NR Risk of bias: High	Depression and suicide risk screening Providers offered a depression management bundle that included evidence-based depression screening, brief supportive counseling ("first-line advice"), referral, consultation, and/or medication, as well as planned followup with primary care or mental health specialists (depending on patients' depression symptom severity) within a specific time frame	Intervention: Learning collaborative N Patients: 188 N Providers/clinics: 22 providers/4 practices No comparator	Patients ages 11 to 18 years seen at 1 of 4 rural Ohio pediatric primary care practices	Not reported	Clinic providers at 1 of 4 rural Ohio pediatric primary care clinics that belonged to a pediatric accountable care organization	6 months	Not reported Health insurance status % Medicaid patients at participating practices Practice 1: 48% Practice 2: 40% Practice 3: 60% Practice 4: 40%

AAP = American Academy of Pediatrics; CHAMP = Child Health Advances Measured In Practice; N = number; NR = not reported; PHQ-9 = Patient Health Questionnaire; PSC-17 = Pediatric Symptom Checklist; PSC-INT = Pediatric Symptom Checklist internalizing subscale; PSC-OVR = Pediatric Symptom Checklist overall psychosocial functioning; QI = quality improvement; RMG = Reliant Medical Group; SD = standard deviation.

Table B-2. Detailed study and population characteristics for included studies on eating disorders

Author, Year Trial Name Study Design Trial Registry Number Funder/Sponsor Risk of Bias	Clinical Intervention, Goal of Implementation Strategy	Implementation strategy and Comparator(s) (N)	Population of Focus	Patient Age and Gender	Setting or Clinic Type	Implementation Period	Other Population Characteristics
Gooding, 2017[9] Study design: Nonrandomized controlled trial Registry number: NR Funder/Sponsor: Academy for Eating Disorders Medical Care Guidelines Grant; Ellen Feldberg Gordon Challenge Fund for Eating Disorders Research and the Strategic Training Initiative for the Prevention of Eating Disorders Risk of bias: High	Screening for eating disorders Implement screening based on the Academy for Eating Disorders (AED) medical guide "Eating Disorders: Critical Points for Early Recognition and Medical Risk Management in the Care of Individuals with Eating Disorders"	Implementation strategy: Learning Collaborative (active-learning)[a] N Patients: 232 pre-intervention and 509 post-intervention N Providers: 23 N Clinics: NR Comparator strategy: Educational materials N Patients: 3,673 pre-intervention and 7,592 post-intervention N Providers: 280 N Clinics: NR	Patients ages 10 to 21 years seen for a well visit Patients considered high risk for eating disorders if BMI percentile was below the 5th percentile for age and sex or because drop in BMI since prior year's checkup was in the largest 5% of BMI reductions in the study population	Age: Range 10 to 21 years Female: NR	Primary care practitioners, including physicians, nurse practitioners, and physician assistants at pediatric primary care practices in Eastern Massachusetts	8 months (1-month pre-period, 2-month gap, 4-month intervention period, 1-month followup)	NR

[a] This study was conducted among practices that participate in the Pediatric Physicians' Organizations at Childrens (PPOC), who are required to participate in at least one learning collaborative per year. The Learning Collaborative from this study implemented an active-learning intervention to compare to a print-learning intervention.
AED = Academy for Eating Disorders; BMI = body mass index; N = number, NR = not reported.

Table B-3. Detailed study and population characteristics for included studies on substance use disorders

Author, Year Trial Name Study Design Trial Registry Number Funder/Sponsor Risk of Bias	Clinical Intervention, Goal of Implementation Strategy	Intervention and Comparator(s) (N)	Population of Focus	Patient Age and Gender	Setting/Clinic Type	Implementation Period	Other Population Characteristics
Mitchell, 2020[10] Barbosa, 2022[11] Gryczynski, 2023[12] SBIRT Implementation for Adolescents in Urban Federally Qualified Health Centers (ST@T) Cluster randomized controlled trial NCT01829308 National Institute on Drug Abuse Risk of bias: Low	Tobacco, alcohol, or drug use assessment, counseling regarding unhealthy drug use, counseling regarding illicit drug use, counseling regarding unhealthy alcohol use Behavioral health incorporation: PCPs provided brief advice and immediate referral to the behavioral health counselor for patients who scored 2 or more on the CRAFFT	Intervention: Behavioral health incorporation N Patient visits: 5,406 N Providers/clinics: 15 providers, 3 practices Comparator: Clinician support only N Patient visits: 4,233 N Providers/clinics: 12 providers, 4 practices	Adolescents, ages 12 to 17 years, receiving care at 1 of 7 sites within a FQHC in Baltimore City	Mean (SD) age Intervention: 14.2 (1.7); Comparator: 14.4 (1.7); % Female Intervention: 54.6% Comparator: 56.5%	Pediatric and family medicine PCPs and BHCs at Large, urban FQHC, which provided adolescent medicine to approximately 3,600 patients at its 7 sites throughout Baltimore City	20-month implementation period for screening and brief advice; 14-month period for brief intervention analysis (data on BHC-delivered BI was not available prior to transition to a new EHR in Month 6)	NR

Author, Year Trial Name Study Design Trial Registry Number Funder/Sponsor Risk of Bias	Clinical Intervention, Goal of Implementation Strategy	Intervention and Comparator(s) (N)	Population of Focus	Patient Age and Gender	Setting/Clinic Type	Implementation Period	Other Population Characteristics
Sterling, 2015[13] The Screening for Youth Alcohol and Drug Use: A Study of Primary Care Providers Cluster randomized controlled trial NCT02408952 National Institute on Alcohol Abuse and Alcoholism Risk of bias: Some concerns	Tobacco, alcohol, or drug use assessment, depression and suicide risk screening, counseling regarding unhealthy drug use, counseling regarding illicit drug use, counseling regarding unhealthy alcohol use Behavioral health incorporation: Pediatrician called the BHCP, a licensed clinical psychologist, for patients who endorsed substance use or mental health risk during screening while patient was at visit	Intervention: Behavioral health incorporation N Patients: 1,558 allocated, 671 analyzed N Providers: 17 allocated, 16 analyzed Comparator: Clinician support only N Patients: 1,558 allocated, 584 analyzed N Providers: 17 allocated, 14 analyzed Comparator: No implementation strategy (usual care) N Patients: 1,769 allocated, 616 analyzed N Providers: 18 allocated, 16 analyzed	Adolescent patients ages 12 to 18 years	Mean Age: 15 years N (%) Female: 2,695 (52.0%)	Pediatricians, behavioral healthcare providers at large general pediatrics clinic in an integrated healthcare system (Kaiser Permanente Northern California Oakland)	24 months	N (%) Race/ethnicity White 1,120 (21.6%) Black 1,659 (32.0%) Hispanic 1,130 (21.8%) Asian 933 (18.0%) Other or missing 342 (6.6%) N/A

Author, Year Trial Name Study Design Trial Registry Number Funder/Sponsor Risk of Bias	Clinical Intervention, Goal of Implementation Strategy	Intervention and Comparator(s) (N)	Population of Focus	Patient Age and Gender	Setting/Clinic Type	Implementation Period	Other Population Characteristics
Knight, 2019[14] Gibson, 2021[15] Randomized controlled trial NCT00227877 NIH National Institute on Alcohol Abuse and Alcoholism, HRSA Maternal and Child Health Risk of bias: Some concerns	Tobacco, alcohol, or drug use assessment Clinician reminders (point-of-care decision support): Computer-facilitated screening and brief intervention (cSBI) included self-administered screening questionnaire (CRAFFT), immediate personalized feedback and psychoeducation, and reminders and talking points for pracitioners	Intervention: Support clinician (reminders) N Patients: 628 allocated, 626 analyzed N Providers: 54 allocated, 49 analyzed Comparator: Technology without reminders N Patients: 243 allocated and analyzed	Youth ages 12 to 18 years who presented for annual preventive health visits Patients who reported any substance use or riding risk at baseline comprised the intervention effect cohort; patients who reported no substance use or riding risk comprised the prevention effect cohort	Mean (SD) age: 14.3 (1.8) N (%) Female: 326 (49.6%)	Pediatric practitioners: nurse practitioners and physicians at pediatric primary care, including 3 community practices and 2 hospital-based practices in Boston, Massachusetts	2 years, 11 months	N (%) Race/ethnicity White/non-Hispanic: 282 (42.9%) Hispanic: 201 (30.5%) Other/multi-race: 176 (26.6%) Two parents at home: 523 (80.0%) College graduate parents: 414 (71.5%) Saw pediatrician at visit: 564 (85.7%) Had 6 or more visits with clinician: 390 (59.6%) Rode with a driver who had been using alcohol or drugs: 43 (6.5%) Hangs out with any friends that use alcohol and drugs: 251 (38.1%) Substance-involved siblings: 50 (8.9%) Substance-involved parents: 35 (5.3%)

BHC = behavioral health counselor; BHCP = behavioral health care practitioner; CRAFFT = car, relax, alone, forget, family or friends, trouble; EHR = electronic health record; FQHC = federally qualified health center; HRSA = Health Resources and Services Administration; N = number; NA = not applicable; NIH = National Institutes of Health; NR = not reported; PCP = primary care provider; SBIRT = screening, brief intervention, and referral to treatment; SD, standard deviation.

Table B-4. Detailed study and population characteristics for included studies on general behavioral health

Author, Year Trial Name Study Design Trial Registry Number Funder/ Sponsor Risk of Bias	Clinical Intervention, Goal of Implementation Strategy	Intervention and Comparator(s) (N)	Population of Focus	Patient Age and Gender	Setting/Clinic Type	Implementation Period	Other Population Characteristics
Thompson, 2016[16] Nonrandomized controlled trial Registry number NR National Institutes of Health (NIH) Risk of bias: High	Behavioral/social/emotional screening, tobacco, alcohol, or drug use assessment, depression and suicide risk screening Adolescent Health Risk Assessment that includes screening for risky behavior and emotions/mood (e.g., depression); adapted from the GAPS	Intervention: Technology (computerized assessment) N Patients: 99 N Providers/clinics: 20 practices Comparator: No implementation strategy N Patients: 64 N Providers/clinics: 2 practices	Adolescents ages 14 to 18 years attending primary care visits at pediatric and family medicine practices in Gainesville, Jacksonville, Orlando, and Tallahassee, Florida	N[a] (%) Age 14: 34 (20.9%); Age 15: 34 (20.9%); Age 16: 34 (20.9%); Age 17: 31 (19.0%); Age 18: 30 (18.4%) N (%) Female: 96 (58.9%)	Varied by clinic, but included at least the following: pediatric and family medicine physicians, residents, nurse practitioners, and nurses at academic, non-academic , and FQHC pediatric and family medicine practices (N=22) in geographically diverse areas of Florida	6 months	N[a] (%) Race/Ethnicity Non-Hispanic White: 79 (48.5%) Non-Hispanic Black: 62 (38.0%) Hispanic: 22[a] (13.5%) Self-reported risk behaviors Sad or hopeless almost every day for 2 weeks 27 (16.7%) Clinic weighted % only (n NR) <10% patients at clinic enrolled in Medicaid or CHIP Intervention: 14.1% Comparator: 82.8% 10%-24% patients at clinic enrolled in Medicaid or CHIP Intervention: 22.2% Comparator: 0.0% 25%-50% patients at clinic enrolled in Medicaid or CHIP Intervention: 3.0% Comparator: 0.0% >50% patients at clinic enrolled in Medicaid or CHIP Intervention: 60.6% Comparator: 17.2%

Author, Year Trial Name Study Design Trial Registry Number Funder/ Sponsor Risk of Bias	Clinical Intervention, Goal of Implementation Strategy	Intervention and Comparator(s) (N)	Population of Focus	Patient Age and Gender	Setting/Clinic Type	Implementation Period	Other Population Characteristics
Walter, 2021[17] Nonrandomized controlled trial (stepped-wedge) Not registered Boston Children's Hospital Payer Provider Quality Initiative Risk of bias: High	Behavioral/social/emotional screening BH stepped-care model consisting of 4 steps: (1) primary care screening and guided self-management with followup; (2) primary care focused assessment; (3) primary care treatment with basic psychopharmacology and/or focused psychotherapy; (4) specialty care if symptoms persist for mild to moderate mental health disorders identified	Intervention: Behavioral health incorporation (with learning collaborative) N Patients: Range of 464 to 28,369 patients per practice N Providers/clinics: 59 practices, 354 providers allocated, 125 providers analyzed No Comparator	Practice members of a statewide association of community-based, independently owned pediatric practices affiliated with an academic medical center	Not reported	Primary care providers (70% physicians, 29% NPs, 1% physician assistants) at community-based, independently owned pediatric practices in Massachusetts	60 months	Race/ethnicity across all practices' patients (%) White: 71% Black: 9% Hispanic: 12% Asian American: 7% Health insurance status Commercially insured: 75% Medicaid: 25% Patients with public insurance at participating practices across implementation phases, mean % Phase 1 (start date: July 2013): 20.2% Phase 2 (start date: September 2014): 13.2% Phase 3 (start date: June 2015): 24.4% Phase 4 (start date: June 2016): 23.4% Phase 5 (start date: June 2017): 27.7%

Author, Year Trial Name Study Design Trial Registry Number Funder/ Sponsor Risk of Bias	Clinical Intervention, Goal of Implementation Strategy	Intervention and Comparator(s) (N)	Population of Focus	Patient Age and Gender	Setting/Clinic Type	Implementation Period	Other Population Characteristics
Richardson, 2019[18] Check Yourself Study Randomized controlled trial NCT02360410 AHRQ and HRSA Risk of bias: Some concerns	Behavioral/social/emotional screening, tobacco, alcohol, or drug use assessment, depression and suicide risk screening Intervention adolescents completed electronic screening with integrated personalized feedback, and their clinician received a printed 1-page summary report of the screening results; feedback content varied according to behavior assessed and the youth-reported risk level The 1-page paper clinician summary included a dashboard with flags categorizing the adolescent health risks as low, moderate, or high within 6 areas: nutrition, activity, substance use, emotions, sexual activity, and safety	Intervention: Support clinicians (relay data) N Patients: 147 allocated, 141 analyzed (3 months) Comparator: Educational materials N Patients: 153 allocated, 151 analyzed (3 months)	Adolescents ages 13 to 18 years	Mean (SD) age Intervention: 14.5 (1.4) ; Control: 14.5 (1.4) N (%) Female 155 (51.7%)	Physicians and advanced practitioners at 5 pediatric clinics in Washington State	16 months	Race/Ethnicity N (%) White: 201 (67%) Asian: 40 (13.3%) Hispanic: 9 (3.0%) African American Intervention: 0 (0%) Control: 3 (2.0%) Native American Intervention: 1 (0.7%) Control: 0 (0%) Other or multiracial: 46 (15.3%) Baseline risk score, mean (SD) Intervention: 3.71 (2.79) Control: 3.39 (2.27)

Author, Year Trial Name Study Design Trial Registry Number Funder/ Sponsor Risk of Bias	Clinical Intervention, Goal of Implementation Strategy	Intervention and Comparator(s) (N)	Population of Focus	Patient Age and Gender	Setting/Clinic Type	Implementation Period	Other Population Characteristics
Richardson 2021[19] Check Yourself v2.0 Nonrandomized controlled trial NCT02882919 AHRQ and HRSA Risk of bias: Some concerns	Behavioral/social/emotional screening, Tobacco, alcohol, or drug use assessment, Depression and suicide risk screening Implement an adapted version of the Check Yourself tool (version 2), an electronic screening tool that assesses protective factors and risk behaviors using a HEADSS pneumonic framework and also screened for specific nutritional behaviors (like drinking sugar-sweetened beverages), physical activity, and sleep.	Intervention: Support clinicians (relay data) N Patients: 145 allocated Comparator: Educational materials N Patients: 155 allocated	Adolescents aged 13 to 18 years	N (%) 13-15 years of age: 228 (76%) N (%) 16-18 years of age: 72 (24%) N (%) Female 129 (43%)	Physicians and advanced practitioners at 5 pediatric clinics in Washington State	15 months	N (%) race/ethnicity White 192 (64.0%) Hispanic 19 (6.3%) African American 19 (6.3%) Asian or Pacific Islander 14 (4.7%) Native American 1 (0.3%) Other or multiracial 55 (18.3%) Mean (SD) baseline risk behavior score Intervention: 2.86 (2.33) Control: 3.10 (2.52)

[a] Value calculated by authors.

AHRQ = Agency for Healthcare Research and Quality; BH = behavioral health; CHIP = children's health insurance program; FQHC = federally qualified health center; GAPS = Guidelines for Adolescent Preventive Services; HEADSS, Home, Education, Activities, Drugs, Depression, Sexuality, and Safety; HRA = health risk assessment; HRSA = Health Resources and Services Administration; IT = information technology; NP = nurse practitioner; NR = not rated; SD, standard deviation.

Detailed Implementation Strategies

In this section, we describe the implementation strategies used in the included studies. For each study, we coded the implementation strategies according to the Expert Recommendations for Implementing Change (ERIC) and the Effective Practice and Organisation of Care (EPOC) crosswalk described in Table A-7 and described how each strategy was operationalized according to the Proctor guidelines for reporting in implementation research.[20] We summarize the implementation strategies used in each study arm and report how the strategies were operationalized in **Table B-5**, **Table B-6**, **Table B-7**, and **Table B-8**.

Implementation Strategies Used in Studies on Screening for Depression and Suicide Risk

The **clinician support-based implementation approach** to implementing screening for depression and suicide risk assessed by Dalal et al. incorporated a templated note in the electronic health record that provided prompts for the recommended steps in depression screening and documentation (*reminders*[a]*)*; leveraged train and educate strategies, which involved clinicians attending a one-time webinar co-led by a pediatrician and child psychiatrist focused on best practices for completing a clinical interview and diagnosing depression (*conduct educational meetings*); and developed relationships strategies, which involved clinicians organizing internal meetings and participating in a series of conference calls to review cases and data and discuss questions and concerns before and after each intervention period (*organize clinician team meetings*). Clinicians were actively involved in the planning, implementation, evaluation, and data review related to this project and received American Board of Pediatrics Maintenance of Certification credit following active participation attestation (*organize clinician team meetings*). Practices in the control group received no implementation support.[7]

Among the two studies that evaluated **learning collaboratives** as an overarching implementation approach[8 6] both evaluated and iterated on implementation. The nonrandomized study [6] implemented learning collaboratives to improve screening rates and the interrupted time series study implemented learning collaboratives to improve screening, brief intervention, and referral to treatment (SBIRT).[8] The nonrandomized controlled study had participating practices complete a Mental Health Practice Readiness Inventory (*assess readiness)* and discuss improvements to help their practice. Subsequently, teams met monthly to discuss and plan workflow modifications for depression screening, implementing Plan-Do-Study-Act (PDSA) cycles [6] (*conduct cyclical tests of change*). In the interrupted time series study, practices completed a checklist covering things to have in place prior to the practice initiating universal screening and management plan components (*develop an implementation blueprint)*. Over 6 months, practices leveraged on evaluate and iterate strategies: first, tailoring electronic health record (EHR) systems to better identify patients eligible for depression screening, and later focusing on improving workflow efficiencies to ensure providers reviewed completed forms, documented screening in the EHR, and provided recommended education (*conduct cyclical tests of change*).

Both studies also leveraged interactive assistance strategies. In the nonrandomized controlled study, interactive assistance was provided through from a coach who delivered tailored guidance on PDSA cycles, engaged practice staff, and provided workflow improvement techniques

[a] Text in parenthesis indicate how an implementation strategy was coded using the adapted ERIC-EPOC framework (Table A-7).

(*facilitation)*.[6] In the interrupted time series study[8], all four practices in rural Ohio received interactive assistance from practice facilitation leads who trained medical and office staff at each pediatric practice in the Institute for Healthcare Improvement Model for Improvement (*facilitation*). These facilitators helped develop practice-specific goals and interventions using baseline and assisted with data collection, including monthly chart audits. Finally, each study also included training and education for clinicians to improve screening rates. In the nonrandomized controlled study,[6] network practices were invited to *engage in learning collaborative*. Members were required to attend a day-long learning session and at least three of six project calls over 7 months. Clinicians could earn credits for Maintenance of Certification Continuing Medical Education. In the interrupted time series study,[8] all practices trained and educated involved staff. A developmental-behavioral pediatrician delivered an interactive learning session open to all practitioners and office staff among participating practices designed with the goal of improving their knowledge and skills to identify and manage depression in primary care (*make training dynamic*).

There were some differences in the specific strategies included among the studies that implemented learning collaboratives as their overall approach to increase screening rates for depression. In the nonrandomized controlled study,[6] practices formed multidisciplinary teams (i.e., physicians, nurses, and administrative staff) responsible for setting practice goals, implementing changes, and measuring improvements monthly *(developed workgroups)*. Additionally, practices chose the depression screening tool that worked best for their practice (*select based on practice and setting*).

Comparison practices in the nonrandomized controlled study compared did not implement an implementation strategy,[6] and the interrupted time series study conducted a centerline shift analysis to evaluate the impact of the learning collaborative implementation approach.[8]

Table B-5 summarizes the detailed implementation strategies used in both the intervention and comparator arms of studies on screening for depression and suicide risk and details on how the strategies were operationalized in practice.

Implementation Strategies Used in Studies on Eating Disorders

Twenty-three practitioners who were already engaged in a learning community on adolescent medicine were selected to participate in the active-learning group (*engage in learning collaborative*). In addition to the learning community, this group received interactive training through (1) a 1-hour in-person lecture focusing on the screening and treatment of eating disorders, led by a board-certified adolescent medicine specialist, and (2) a mobile application (*make training dynamic*). The application provided access to Academy of Eating Disorders guide materials and periodically disseminated questions derived from the materials to the participants to test their knowledge. Furthermore, those in the active-learning group were required to undertake a quality improvement project in their respective practices that was centered on enhancing the screening process for eating disorders (*conduct cyclical tests of change*). A total of 280 practitioners who were not involved in the learning community were invited to the print-learning group, which served as the comparison arm. They received printed copies of the Academy of Eating Disorders guide and were encouraged to read and apply its concepts (*distribute educational materials*), without any further implementation support.

Table B-6 summarizes the detailed implementation strategies used in both the intervention and comparator arms of studies on eating disorders and details on how the strategies were operationalized in practice.

Implementation Strategies Used in Studies on Substance Use Disorders

The trial evaluating a **clinician support-based approach** to implement computer-facilitated screening and brief intervention (cSBI) included guidance for providers to access before delivering the brief interventions to patients (*provider reminders*).[14] After patients had completed their screening, providers were able to access the screening results along with recommended talking points via tablet to aid administration of the brief intervention when patients screened positively (*provider reminders*).[14] The addition of provider reminders was compared to implementation as usual. Providers in both arms received training related to cSBI (*dynamic training)*.[14] The training consisted of three 1-hour-long training sessions to orient providers to the cSBI, provide video examples of brief counseling, and complete in-person training to practice motivational interviewing skills (*make training dynamic*) for which providers received continuing medical education (CME) credits.[14] Patients in both groups completed the substance use screening via a tablet computer program and were then able to view their scores and additional educational material (*use technology*). Providers in the cSBI arm were able to access patients' screening results and suggested talking points via the tablet as well.

Both studies assessing **incorporation-based approaches** to implementation embedded a behavioral healthcare provider into the primary care team (*create new clinical teams*). The use of audit and feedback and centralized technical assistance was similar across the studies. In the study comparing specialist and generalist sites, EHR data was aggregated at the clinic-level and used to provide a holistic view of SBIRT adherence during quarterly trainings.[10] Ongoing technical assistance was available across both studies and was delivered by implementation specialists for providers, managers, and other clinic staff (*centralize technical assistance*).[10, 13] Providers in the generalist and specialist sites were able to view their adherence to implementation using a combination of written feedback and EHR data (*conduct audit and feedback*).[10] In the three-arm cluster RCT, feedback regarding SBIRT and referral rates was provided during quarterly meetings to pediatricians delivering SBIRT, as well as to behavioral healthcare practitioners, to reinforce fidelity to the model being implemented (*conduct audit and feedback*).[13]

The studies differed in the use of additional implementation strategies. Providers received reminders to deliver the screening, brief intervention, referral to treatment via email, staff meetings, and the EHR (*provider reminders*) in one study,[13] while the other used an organizational champion with the clinics (*identify and prepare a champion*) and modified the EHR to display screening results directly to providers (*facilitate relay of clinical data*).[10] To improve the uptake of SBIRT across Federally Qualified Health Centers, providers and behavioral health counselors also received hour-long training sessions and were offered quarterly educational booster sessions (*conduct ongoing training*).[10] In the three-arm cluster RCT, pediatricians in both intervention arms attended educational meetings, though the number of sessions differed across arms (*conduct educational meetings*).[13] Pediatricians who were working alongside behavioral healthcare practitioners received a single session, while pediatricians responsible for delivering SBIRT independently received three training sessions.[13] Both intervention arms also received educational materials and resources related to motivational interviewing and the delivery of SBIRT (*distribute educational materials*).[13] The study arms that received either support only or training plus behavioral healthcare incorporation also had access to clinical consultations throughout the study (*provide ongoing consultation*).[13]

In both studies assessing **incorporation-based approaches**, providers in the comparator arms received varying levels of support without behavioral health incorporation. In the study

comparing generalist and specialist sites, primary care providers in the generalist sites (comparator arm) received training and support to administer brief intervention.[10] In the three-arm study, the comparator arm included usual implementation, wherein providers received no training or access to a behavioral healthcare practitioner).[13]

Table B-7 summarizes the detailed implementation strategies used in both the intervention and comparator arms of studies on substance use disorders and details on how the strategies were operationalized in practice.

Implementation Strategies Used in Studies on General Behavioral Health

The **technology-based implementation approach** assessed by Thompson et al. primarily leveraged change infrastructure strategies, which involved providing practices with (1) a technology enhanced health risk assessment, (2) tablets that adolescents could use to complete the electronic assessment, and (3) access to an online platform that would aggregate adolescent responses into a report that clinicians could use to guide discussion of health risks with the adolescent (*change physical equipment and use technology*).[16] Providers further received support from study coordinators that included training on the study protocol (*conduct educational meetings*), weekly monitoring of clinician fidelity to screening (*monitor delivery performance*), site visits to resolve practice-specific implementation concerns (*provide facilitation*), and assess clinic-specific adaptations to the implementation protocol to ensure they were sufficiently similar to the study protocol to be acceptable (*tailor based on practice and setting*). Providers in the comparison group did not have access to the technology enhanced assessment with clinician guidance but were allowed to continue using any health risk assessments that were already in use at their practice and received no implementation support.

Two randomized controlled trials (RCTs) compared electronic screening for health risk behaviors paired with personalized feedback delivered to the patient and a clinician summary delivered to the provider to electronic screening alone among adolescents ages 13 to 18 years to assess a **clinician support-based approach** to implementing screening and brief intervention (SBI).[18, 19] Adolescents presenting for a well visit were randomized to a well visit where both they and their provider received feedback or not. All participating providers were invited to complete a 15-minute training about the screening tool and clinical summary (*distribute educational materials*) and all adolescents completed an EHR assessment. In both cases, the practice's usual procedures for performing health risk assessment and counseling were also performed. Only adolescents randomized to receive care with feedback received immediate, interactive feedback on their behaviors to review prior to meeting with their provider (*prepare patients to be active participants*). For these adolescents, a clinical summary was also automatically generated and printed for providers to support delivery of brief intervention for patients who reported moderate- or high-risk behaviors (*facilitate relay of clinical data to providers*). For adolescents randomized to receive care without feedback, providers were encouraged to follow their practice's usual procedures for performing health risk assessment and counseling.

The fourth study used a stepped-wedge design to evaluate an **incorporation-based approach** to implementing SBIRT by embedding behavioral health clinicians within the primary care practices (*create new clinical teams*) to increase behavioral health screening at well visits, psychotherapy visits when appropriate, and psychotropic medication prescribing when indicated.[17] Another key component of this approach was a learning collaborative for practices to share and discuss their implementation experiences and challenges (*engage in learning*

collaborative). Additional components included tailored support through the learning collaborative (*provide ongoing consultation*), securing support from practice leadership and ensuring that both on-site and off-site teams had support from executive leadership of their entities (*change organizational culture*), additional didactic session for the behavioral health clinicians incorporated into the clinics (*conduct educational meetings*), and providing clinical data back to primary care providers tasked with providing brief intervention to patients who screen at risk (*facilitate relay of clinical data to providers*).

Table B-8 summarizes the detailed implementation strategies used in both the intervention and comparator arms of studies on general behavioral health and details on how the strategies were operationalized in practice.

Implementation Strategies Used in Studies Conducted Outside the United States

The Australian RCT by Sanci et al. assessed a multicomponent **clinician training** implementation approach to introduce clinicians and practice support staff (i.e., receptionists and practice managers) at implementation practices to screening for health risk behaviors and help them integrate screening into office and clinical procedures.[21] First, clinicians were invited to attend three 3-hour interactive training workshops covering youth-friendly care, screening for and discussing health risks, and addressing detected screen-detected risky behaviors with a brief intervention based on motivational interviewing principles (*make training dynamic*). At workshops, clinicians received didactic training from an adolescent primary care expert, practiced newly learned skills using role play with adolescent actors, received feedback and coaching in youth-friendly communication skills, and were introduced to the study screening tool prompting them to discuss health risk behaviors, protective factors, and strengths with their patients. After workshop completion, an adolescent primary care expert and a research assistant (RA) conducted two practice visits and helped practices integrate a new screening tool for health risk behaviors into office and clinical procedures using PDSA cycles (*provide facilitation*). RAs also helped practices update their referral lists with local youth specialist services and provided posters and pamphlets addressing youth-friendly care and health risk behaviors (*distribute educational materials*). Clinicians and practice support staff were also provided data from patient exit interviews as feedback to help them identify aspects of care that could be improved (*obtain and use patient and family feedback*). Clinicians in the comparison arm received a single 3-hour seminar on youth-friendly care including recommendations to discuss health risks with young people (*conduct educational meeting*).

The Iranian RCT by Sharifi et al. also assessed a **clinician training** implementation approach via an interactive 2.5-day training on managing common child mental health problems for general practitioners (GPs) already practicing in an existing adult collaborative care program to help them more often identify child mental health problems, engage families, and provide brief interventions.[22] Training used lectures, discussion, and practice with standardized patients and helped GPs provide screen-identified patients with brief interventions such as transdiagnostic problem solving, help with parent-child interactions, and condition-specific brief treatments (*make training dynamic*). Control GPs received a 1-day refresher in problem recognition and description of treatment outcomes available through local community mental health centers (*conduct educational meeting*).

Table B-5. Detailed implementation strategies for included studies on screening for depression

Study Comparison	Implementation Strategy Domain	Strategies Used in the Intervention	Strategies Used in the Comparator	Strategy Operationalization
Harder 2019[6] **QI Learning Collaborative** (intervention) vs. **No Strategy** (comparator)	Evaluate and iterate implementation	Assess for readiness Conduct cyclical tests of change	N/A	**<u>Assess for Readiness (intervention only):</u>** **Who delivered the implementation strategy:** Each practice's multidisciplinary team **Steps taken:** Each practice team completed the MHPRI at the beginning of the learning collaborative and used the results to discuss improvements that would help their practice; each practice team recompleted the MHPRI at the end of the learning collaborative. **Who was engaged at each step:** N/A **<u>Conduct Cyclical Tests of Change (intervention only):</u>** **Who delivered the implementation strategy:** Each practice's multidisciplinary team and VCHIP staff **Steps taken:** Practice-specific data were reviewed with practice teams to demonstrate gaps between adolescent depression screening with validated tool percentages and national recommendations to screen 100% of adolescents. Ideas for implementing office systems changes across 5 domains outlined in the MHPRI. Each practice team met at least monthly to make plans for modifying workflows to incorporate depression screening and complete monthly PDSA cycles to test their changes systematically. Teams submitted PDSA worksheets to VCHIP each month along with medical record review data. VCHIP provided visualizations of their data. **Who was engaged at each step:** N/A
	Provide interactive assistance	Facilitation	N/A	**<u>Facilitation (intervention only)</u>** **Who delivered the implementation strategy:** VCHIP staff **Steps taken:** VCHIP provided team-specific coaching for improvement, such as next steps in PDSA cycles, engaging practice staff, and techniques to improve office workflow. **Who was engaged at each step:** Each practice's multidisciplinary team
	Select, adapt, and tailor to context	Practice and setting	N/A	**<u>Practice and Setting (intervention only)</u>** **Who delivered the implementation strategy:** Each practice's multidisciplinary team **Steps taken:** Practices chose the depression screening tool that worked best for their practice from those listed in the AAP Mental Health Toolkit. **Who was engaged at each step:** N/A
	Develop relationships with internal and external partners	Use Workgroups	N/A	**<u>Use Workgroups (intervention only)</u>** **Who delivered the implementation strategy:** N/A **Steps taken:** Participating practices formed multidisciplinary (physicians, nurses, and administrative staff) teams responsible for setting practice goals, implementing changes, and measuring improvements on a monthly basis. **Who was engaged at each step:** N/A

Study Comparison	Implementation Strategy Domain	Strategies Used in the Intervention	Strategies Used in the Comparator	Strategy Operationalization
	Train and educate stakeholders	Learning collaborative	N/A	**Learning Collaborative (intervention only)** **Who delivered the implementation strategy:** VCHIP staff **Steps taken:** All CHAMP network practices were invited to join the QI collaborative. The collaborative fostered shared learning and collaboration within and between practices. Team members were required to attend a day-long learning session and at least 3 of 6 project calls over 7 months. VCHIP identified successes and challenges among practice teams and addressed these during 6 all-practice calls. As an incentive, physicians were offered 25 credits toward Part IV MOC and up to 20 hours of CME. **Who was engaged at each step:** Each practice's multidisciplinary team
Dalal 2023[7] **Support clinicians** (intervention) vs. **No strategy** (comparator)	Develop relationships with internal and external partners	Organize Clinician Implementation Team Meetings	No implementation strategy	**Organize Clinician Implementation Team Meetings (intervention only)** **Who delivered the implementation strategy:** QI clinicians and unspecified project team members **Steps taken:** Clinicians participated in a series of one-hour conference calls to review cases and data, and discuss questions and concerns, before and after each intervention period. Additionally, each clinician conducted reviews of at least 10 of their charts during the pre- and post-intervention periods and reported outcomes using a survey tool. QI clinicians were actively involved in the planning, implementation, evaluation, and data review related to this project and received ABP MOC credit following active participation attestation. **Who was engaged at each step:** QI clinicians
	Train and educate stakeholders	Conduct educational meeting	No implementation strategy	**Conduct educational meeting (intervention only)** **Who delivered the implementation strategy:** Pediatrician and child psychiatrist **Steps taken:** 18 QI-participating clinicians attended a webinar co-led by a pediatrician and child psychiatrist, which focused on best practices for completing a clinical interview and diagnosing depression. **Who was engaged at each step:** QI clinicians
	Support clinicians	Reminders	No implementation strategy	**Reminders (intervention only)** **Who delivered the implementation strategy:** Unspecified RMG staff **Steps taken:** Smart Phrase (templated note in the EHR) provided pediatricians with prompts outlining the recommended steps in depression assessment. If a patient scored at risk, providers could easily use the Smart Phrase to help guide further assessment. **Who was engaged at each step:** QI clinicians

Study Comparison	Implementation Strategy Domain	Strategies Used in the Intervention	Strategies Used in the Comparator	Strategy Operationalization
Baum 2020[8] **Learning collaborative** (intervention) vs. **No comparator**	Evaluate and iterate implementation	Implementation blueprint Conduct cyclical tests of change	N/A	**Implementation blueprint (intervention only)** **Who delivered the implementation strategy:** Project leadership **Steps taken:** We provided practices with a project checklist. During months 0-3, practices completed the project checklist to ensure that they were implementing necessary elements of the project. **Who was engaged at each step:** Participating practices **Conduct cyclical tests of change (intervention only)** **Who delivered the implementation strategy:** PF lead, participating practices **Steps taken:** To begin the project, participating practices reviewed baseline data gathered by the PF lead and developed their aim statements. During months 0-3, practices instituted processes within their EHR to identify eligible patients to be screened. In months 4-6, the teams worked on improving workflow issues. Control charts (p-charts) of both the process measure (depression screening) and the outcome measure (depression management bundle) were presented monthly to the practice team as a way to show progress, address process issues, and celebrate improvements. CME and MOC Part 4 points to pediatricians who completed the project. **Who was engaged at each step:** Participating practices
	Provide interactive assistance	Facilitation	N/A	**Facilitation (intervention only)** **Who delivered the implementation strategy:** Practice facilitators or coaches, QI specialists **Steps taken:** Coaches help practice teams of medical and office staff develop practice-specific aims, drivers, and interventions using baseline data. The facilitators manage QI projects by assisting in data collection and measurement. QI specialists provide practices with a menu of potential projects, support project development, and implementation and offer evidence-based resources to encourage project completion. **Who was engaged at each step:** Participating practice teams
	Train and educate stakeholders	Make training dynamic	N/A	**Make training dynamic** **Who delivered the implementation strategy:** Project leads, including project medical lead (DBP) **Steps taken:** Project leads developed an interactive learning session for participating practices. This session was open to all practitioners and office staff and was conducted by the project's medical lead, a DBP. During months 0-3, practices received training on managing depression in primary care. **Who was engaged at each step:** Practitioners and office staff at participating clinics

ABP = American Board of Pediatrics; AAP = American Academy of Pediatrics; CHAMP = Child Health Advances Measured In Practice; CME = continuing medical education; DBP = developmental-behavioral pediatrician; EHR = electronic health record; MHPRI = Mental Health Practice Readiness Inventory; MOC = maintenance of certification; N/A = not applicable; PDSA = Plan-Do-Study-Act; PF = practice facilitation; QI = quality improvement; RMG = Reliant Medical Group; VCHIP, Vermont Child Health Improvement Program; vs. = versus.

Table B-6. Detailed implementation strategies for included studies on eating disorders

Study Comparison	Implementation Strategy Domain	Strategies used in the Intervention	Strategies used in the Comparator	Strategy Operationalization
Gooding, 2017[9] **Learning collaborative** (intervention) vs. **Educational materials** (comparator)	Evaluate and iterate implementation	Conduct cyclical tests of change	N/A	**Conduct cyclical tests of change (intervention only)** **Who delivered the implementation strategy:** Adolescent medicine LC practitioners **Steps taken:** Active-learning participants completed a quality improvement project within their practice. **Who was engaged at each step:** N/A
	Train and educate providers	Make training dynamic Engage in learning collaborative	Distribute educational materials	**Make training dynamic (intervention only)** **Who delivered the implementation strategy:** Board-certified adolescent medicine specialist **Steps taken:** Practitioners in the active-learning group participated in a 1-hour in-person interactive lecture on screening and treatment for eating disorders. Active-learning group practitioners were invited to review material from the AED guide via a mobile application. 12 eating disorder questions derived from the AED guide were delivered to participants over 5 weeks. Questions were resent 8 days later if incorrect and 16 days later if answered correctly. **Who was engaged at each step:** PPOC adolescent medicine LC practitioners. **Engage in learning collaborative (intervention only)** **Who delivered the implementation strategy:** Staff at Boston Children's Hospital **Steps taken:** In 2015, PPOC offered an adolescent medicine LC focused on confidentiality and legal issues, transition to adult care, anxiety, depression, obesity, and eating disorder screening and treatment. The 23 practitioners in the adolescent medicine LC received equal instruction in each of the adolescent medicine LC topics over the course of the year. **Who was engaged at each step:** PPOC adolescent medicine LC practitioners **Distribute educational materials (comparator only)** **Who delivered the implementation strategy:** NR **Steps taken:** Each practice in the print-learning group received print copies of the AED guide to disseminate to all practitioners in their practice. Practitioners in this group were encouraged to read and implement concepts from the AED guide, but no further intervention was provided. **Who was engaged at each step:** PPOC practices and practitioners

AED = Academy for Eating Disorders; LC = Learning Collaborative; N/A, not applicable; PPOC = Pediatric Physicians' Organizations at Childrens; vs. = versus.

Table B-7. Detailed implementation strategies for included studies on substance use disorders

Study Comparison	Implementation Strategy Domain	Strategies used in the Intervention	Strategies used in the Comparator	Strategy Operationalization
Mitchell 2020[10] Barbosa, 2022[11] Gryczynski, 2023[12] **Behavioral health incorporation** (intervention) vs. **Clinician support** (comparator)	Evaluate and iterate implementation	Audit and feedback	Audit and feedback	**Audit and feedback (intervention and comparator)** **Who delivered the implementation strategy:** Unclear **Steps taken:** Data on SBIRT services were extracted from the EHR on a bimonthly basis; written feedback was given to PCPs, focusing specifically on their adherence to the implementation model over the past 60 days. EHR data was analyzed at the clinic level and used to provide targeted feedback at quarterly booster trainings. **Who was engaged at each step:** PCPs (for individual-level feedback), clinic (for clinic-level feedback)
	Provide interactive assistance	Centralize technical assistance	Centralize technical assistance	**Centralize technical assistance (intervention and comparator)** **Who delivered the implementation strategy:** Implementation specialists **Steps taken:** Technical assistance was delivered by the implementation specialists for staff at each clinic; sites received technical assistance/ support and feedback for practice managers and providers. **Who was engaged at each step:** Clinic staff, practice managers, providers
	Develop relationships with internal and external partners	Identify and prepare champions	Identify and prepare champions	**Identify and prepare champions (intervention and comparator)** **Who delivered the implementation strategy:** Unclear **Steps taken:** Medical Director served as the project's Organizational Champion **Who was engaged at each step:** Medical Director

Study Comparison	Implementation Strategy Domain	Strategies used in the Intervention	Strategies used in the Comparator	Strategy Operationalization
	Train and educate stakeholders	Train and educate Conduct ongoing training	Train and educate Conduct ongoing training	**<u>Train and educate stakeholders (intervention)</u>** **Who delivered the implementation strategy:** Unclear **Steps taken:** PCPs were trained to provide brief advice, during which the patient was encouraged to accept a warm handoff to meet with a behavioral health counselor, and the proper documentation of activities in the EHR. PCPs and BHCs received 1-hour training on delivering brief interventions using principles of motivational interviewing. **Who was engaged at each step:** PCPs and BHCs **<u>Train and educate stakeholders (comparator)</u>** **Who delivered the implementation strategy:** Unclear **Steps taken:** PCPs were trained to conduct BIs of about 5- to 10-minute duration using motivational interviewing techniques focused on reducing or discontinuing their substance use. All primary care staff received a 1-hour training, orienting them to the project, the screening process, the appropriate responses to screenings. **Who was engaged at each step:** PCPs **<u>Conduct ongoing training (intervention)</u>** **Who delivered the implementation strategy:** Unclear **Steps taken:** Quarterly booster training **Who was engaged at each step:** All pediatric staff and BHCs **<u>Conduct ongoing training (comparator)</u>** **Who delivered the implementation strategy:** Unclear **Steps taken:** Quarterly booster training **Who was engaged at each step:** All pediatric staff
	Support clinicians	Change record system to facilitate relay of clinical data to providers Create new clinical team	Change record system to facilitate relay of clinical data to providers	**<u>Change record system to facilitate relay of clinical data to providers (intervention and comparator)</u>** **Who delivered the implementation strategy:** Unclear **Steps taken:** The EHR was modified to include screening results as well as a provider checklist indicating what services were provided in response to the screening results. **Who was engaged at each step:** PCPs **<u>Create new clinical team (intervention only)</u>** **Who delivered the implementation strategy:** Unclear **Steps taken:** Co-located behavioral health specialist that is incorporated into the clinical team via "the warm handoff" **Who was engaged at each step:** PCPs and BHCs

Study Comparison	Implementation Strategy Domain	Strategies used in the Intervention	Strategies used in the Comparator	Strategy Operationalization
Sterling 2015[13] **Behavioral health incorporation** (intervention) vs. **Clinician support** (comparator) or **No strategy** (comparator)	Evaluate and iterate implementation	Audit and provide feedback	Pediatrician Only Audit and provide feedback Usual Care No strategy	**Audit and provide feedback (intervention)** **Who delivered the implementation strategy:** unclear **Steps taken:** Feedback on rates of referral to the BHCP was provided at quarterly meetings, along with a review of the SBIRT protocol and skills, to reinforce fidelity and performance. **Who was engaged at each step:** Pediatrician **Audit and provide feedback (pediatrician only)** **Who delivered the implementation strategy:** unclear **Steps taken:** Feedback on SBIRT rates was provided at quarterly meetings, along with a review of the SBIRT protocol and skills, to reinforce fidelity and performance. **Who was engaged at each step:** Pediatrician
	Provide interactive assistance	Centralize technical assistance	Pediatrician Only Centralize technical assistance Usual Care No strategy	**Centralize technical assistance (intervention and pediatrician only)** **Who delivered the implementation strategy:** Unclear **Steps taken:** Made technical assistance and clinical consultation available as needed **Who was engaged at each step:** Pediatrician
	Train and educate stakeholders	Conduct educational meetings Distribute educational materials	Pediatrician Only Conduct educational meetings Distribute educational materials Usual Care No strategy	**Conduct educational meeting (intervention)** **Who delivered the implementation strategy:** Unclear **Steps taken:** One 60-minute session addressing motivational interviewing principles, patterns of hazardous substance use and common mental health symptoms, the manualized brief intervention protocol, educational resources, and protocols for specialty substance use and mental health treatment referral. **Who was engaged at each step:** Pediatrician and BHCP **Conduct educational meeting (pediatrician only)** **Who delivered the implementation strategy:** Unclear **Steps taken:** Three 60-minute sessions addressing motivational interviewing principles, patterns of hazardous substance use and common mental health symptoms, the manualized brief intervention protocol, educational resources, and protocols for specialty substance use and mental health treatment referral. **Who was engaged at each step:** Pediatrician **Distribute educational materials (intervention and pediatrician only)** **Who delivered the implementation strategy:** Unclear **Steps taken:** Provide training materials to pediatricians to view at their convenience **Who was engaged at each step:** Pediatrician

Study Comparison	Implementation Strategy Domain	Strategies used in the Intervention	Strategies used in the Comparator	Strategy Operationalization
	Support clinicians	Create new clinical team Reminders	Pediatrician Only Reminders Usual Care No strategy	**Create new clinical team (intervention only)** **Who delivered the implementation strategy:** unclear **Steps taken:** BHCP was added to the clinical team—pediatricians working in coordination with embedded BHCPs. **Who was engaged at each step:** Pediatricians and BHCP **Reminders (intervention and pediatrician only)** **Who delivered the implementation strategy:** Unclear **Steps taken:** Emails and staff meetings to address screening and assessment tools in the EHR and reminders on requirement to document clinical activities. **Who was engaged at each step:** Pediatrician
Knight 2019[14] Gibson, 2021[15] **Support clinicians** (intervention) vs. **Technology without reminders** (comparator)	Train and educate stakeholders	Make training dynamic	Make training dynamic	**Make training dynamic** **Who delivered the implementation strategy:** Not reported **Steps taken:** 1-hour orientation session that comprised a demonstration of the tablet computer program, a review of practitioner reports for various categories of risk, the study safety protocol, a 20-minute video showing examples of brief counseling based on suggested talking points, a 1-hour online training session with video examples of practitioner counseling, and a 1-hour motivational interviewing skills development training session. **Who was engaged at each step:** Practitioners
	Support clinicians	Reminders	N/A	**Reminders (intervention only)** **Who delivered the implementation strategy:** The cSBI office system **Steps taken:** Point of care decision support including screening results, risk level, talking points, and recommended followup plan provided to practitioner. Practitioners gave a printed Contract for Life to all patients and parents or guardians, if present, as a prevention strategy for high- and low-risk patients. **Who was engaged at each step:** Practitioners

Study Comparison	Implementation Strategy Domain	Strategies used in the Intervention	Strategies used in the Comparator	Strategy Operationalization
	Change infrastructure	Use information and communication technology	Use information and communication technology	**Use information and communication technology (intervention)** **Who delivered the implementation strategy:** The cSBI office system **Steps taken:** Patients complete risk screening using a tablet-based, cSBI system prior to PCP encounter; patients immediately receive CRAFFT score and level of risk; cSBI provides personalized risk feedback and psycho-educational content based on screen results; electronic delivery of prompts for practitioner talking points. **Who was engaged at each step:** Practitioners and patients **Use information and communication technology (comparator)** **Who delivered the implementation strategy:** The cSBI office system **Steps taken:** Patients complete risk screening using a tablet-based. **Who was engaged at each step:** Practitioners and patients

BHC = behavioral health clinician; BHCP = behavioral health care provider; BI = brief intervention; CRAFFT = car, relax, alone, forget, family or friends, trouble; cSBI = computer-delivered screening and practitioner-delivered brief intervention; EHR = electronic health record; PCP = primary care provider; SBIRT = screening, brief intervention, and referral to treatment; vs. = versus.

Table B-8. Detailed implementation strategies for included studies on general behavioral health

Study Comparison	Implementation Strategy Domain	Strategies used in the Intervention	Strategies used in the Comparator	Strategy Operationalization
Thompson 2016[16] **Technology** (intervention) vs. **No implementation strategy** (comparator)	Evaluate and iterate implementation	Monitoring the performance of the delivery	No implementation strategy	**Monitoring the performance of the delivery (intervention only)** **Who delivered the implementation strategy:** Study coordinators working as practice facilitators **Steps taken:** Fidelity monitoring was systematically reviewed weekly and issues were resolved in a variety of ways. **Who was engaged at each step:** Clinic staff
	Provide interactive assistance	Facilitation	No implementation strategy	**Facilitation (intervention only)** **Who delivered the implementation strategy:** Study coordinators working as practice facilitators **Steps taken:** Frequent visits were made to each clinic to ensure fidelity and to address any implementation issues. **Who was engaged at each step:** Clinic staff

Study Comparison	Implementation Strategy Domain	Strategies used in the Intervention	Strategies used in the Comparator	Strategy Operationalization
	Select, adapt, and tailor to context	Practice and setting	No implementation strategy	**Practice and setting (intervention only)** **Who delivered the implementation strategy:** Study coordinators working as practice facilitators **Steps taken:** Given practice differences, study coordinators had to work through site-specific adaptations, figuring out which were acceptable and which were too significantly different from the study protocol to be allowed. **Who was engaged at each step:** Clinic staff
	Train and educate stakeholders	Train and educate stakeholders[a]	No implementation strategy	**Train and educate stakeholders (intervention only)** **Who delivered the implementation strategy:** Study coordinators working as practice facilitators **Steps taken:** Study coordinators worked as practice facilitators, training clinic staff on the protocol. **Who was engaged at each step:** Clinic staff
	Change infrastructure	The use of Information and communication technology Change physical equipment	No implementation strategy	**Use of Information and communication technology (intervention only)** **Who delivered the implementation strategy:** Study team (specific individuals responsible not specified) **Steps taken:** Adaptation of GAPS into an HIT-enhanced HRA, accessible via tablet. The software aggregated the responses into a real-time report separately available via secure internet connection, highlighting high-risk behaviors. Reports could be printed or uploaded into the adolescent's medical record. **Who was engaged at each step:** Providers **Change Physical Equipment (intervention only)** **Who delivered the implementation strategy:** Study team (specific individuals responsible not specified) **Steps taken:** Implies practices were provided with iPads. The web-based system was primarily accessed through Wi-Fi-enabled iPads, and iPads with cellular data service were made available to clinics without Wi-Fi. Future practices that might want to use this platform would only have to cover costs for tablets and practice facilitation. **Who was engaged at each step:** Clinic staff

Study Comparison	Implementation Strategy Domain	Strategies used in the Intervention	Strategies used in the Comparator	Strategy Operationalization
Walter 2021[17] **Behavioral health incorporation with learning collaborative** (intervention) vs. **No comparator**	Provide interactive assistance	Clinical supervision Ongoing consultation	N/A	**<u>Clinical supervision (intervention only)</u>** **Who delivered the implementation strategy:** Integration managers, CAP consultants **Steps taken:** Integration managers provided BHCs with ~1 to 2 hours/month of individual telephonic consultation and 1 hour/month of televideo case consultations. CAPs provided telephone consultations to PCPs on demand 8 hours/day, 5 days/week. **Who was engaged at each step:** Practice PCPs **<u>Ongoing consultation (intervention only)</u>** **Who delivered the implementation strategy:** Program and integration managers, quality improvement consultants **Steps taken:** ~10 hours/year of in-person or televideo support were provided to PCPs, medical home CCs, and other practice staff. These group sessions addressed clinical and business workflows; billing and revenue cycle management; BHC hiring, contracting, and/or credentialing; crisis plans; linkages to specialty services; EHR documentation and decision support; and support for practice-individualized quality improvement projects. The sessions were supplemented by ~3 hours/month of individualized practice-based support. **Who was engaged at each step:** Practice PCPs, CCs, and other practice staff
	Develop relationships with internal and external partners	Change organizational culture	N/A	**<u>Change organizational culture (intervention only)</u>** **Who delivered the implementation strategy:** Off-site BHIP clinical/operational teams, executive leadership of the affiliated entities, Massachusetts Child Psychiatry Access Program **Steps taken:** Secure ongoing support from practice leadership. On-site teams were supported by off-site BHIP clinical; operational teams were supported by the executive leadership of the affiliated entities. **Who was engaged at each step:** On-site practice-based BH teams comprised of PCPs, BHCs hired by practices after program launch, and practices' medical home CCs

Study Comparison	Implementation Strategy Domain	Strategies used in the Intervention	Strategies used in the Comparator	Strategy Operationalization
	Train and educate stakeholders	Learning collaborative Conduct educational meetings	N/A	**<u>Learning collaborative (intervention only)</u>** **Who delivered the implementation strategy:** Affiliated academic medical center faculty **Steps taken:** Practices (1) designate ~1 PCP and ~1 additional clinical (BHC) and/or office staff to attend the BHIP education component and disseminate learned information throughout the practice; the core didactic BHIP education component (BHLC) was delivered by affiliated academic medical center faculty to practice-based BH teams in 10 1- or 2-hour sessions (17 hours total), primarily in the first enrollment year. Most sessions were delivered in person in a geographically central location, with several sessions delivered by televideo. Twenty Category 1 continuing medical education and 25 Type IV maintenance of certification credits were offered to physician BHLC participants through the affiliated medical school; discipline-specific credits were also offered to other professionals. BHLC activities targeted at key BH competencies for pediatricians delineated by the American Academy of Pediatrics, the core didactic sessions addressed purposes and processes of collaborative care; the stepped-care model of universal BH screening; focused assessment of BH problems, including the use of symptom rating scales; phenomenology, etiology, and management of mild and/or moderate presentations of the target disorders (anxiety, depression, and ADHD) and related problems (stress-trauma reactions, disruptive behavior, and suicide); guideline-congruent, first-line medications for target disorders; focused psychotherapy; guided self-management for patients and/or family with followup for subclinical problems; and referral to specialty BH care for severe, complex, unsafe, and/or refractory presentations. **Who was engaged at each step:** Practice PCPs and clinical and/or office staff **<u>Conduct educational meetings (intervention only)</u>** **Who delivered the implementation strategy:** Affiliated academic medical center faculty **Steps taken:** BHCs received 8 hours/year of additional didactic sessions targeted at their specific learning needs. **Who was engaged at each step:** BHCs

Study Comparison	Implementation Strategy Domain	Strategies used in the Intervention	Strategies used in the Comparator	Strategy Operationalization
	Support clinicians	Create new clinical team (to incorporate) Change record system to facilitate relay of clinical data to providers	N/A	**<u>Create new clinical team (to incorporate) (intervention only)</u>** **Who delivered the implementation strategy:** Participating practices **Steps taken:** Create BH care team; standardize roles, communication channels, clinical protocols, structures, processes, and outcomes for BH care; on-site, billable clinical services comprised BH screening by PCPs; BH assessment and treatment visits to PCPs and BHCs; and PCP prescription of psychotropic medications for anxiety, depression, and ADHD; unbilled BH care coordination was provided by CCs. **Who was engaged at each step:** N/A **<u>Change record system to facilitate relay of clinical data to providers (intervention only)</u>** **Who delivered the implementation strategy:** BHIP practice teams with support from program and integration managers and QI consultants **Steps taken:** Modified EHR to incorporate BH documentation, outcome and referral tracking, and billing. **Who was engaged at each step:** Participating practices
Richardson 2019[18] **Support clinicians** (intervention) vs. **Educational materials** (comparator)	Train and educate stakeholders	Distribute Educational Materials	Distribute Educational Materials	**<u>Distribute educational materials (intervention and comparator)</u>** **Who delivered the implementation strategy:** Unclear **Steps taken:** Clinicians received 15-minute online training module orienting them to the tool, how to interpret clinician summary, and a very brief overview of the tenets of motivational interviewing. **Who was engaged at each step:** Clinicians
	Support clinicians	Facilitate relay of clinical data to providers	N/A	**<u>Facilitate relay of clinical data to providers (intervention only)</u>** **Who delivered the implementation strategy:** Unclear **Steps taken:** Provide a 1-page clinician summary report that included a dashboard with flags categorizing the adolescent health risks as low, moderate, or high; provided individual screening responses. **Who was engaged at each step:** Clinicians
	Engage consumers	Prepare patients to be active participants	N/A	**<u>Prepare patients to be active participants (intervention only)</u>** **Who delivered the implementation strategy:** Screening application **Steps taken:** Delivery of personalized feedback to motivate healthier behaviors and to encourage discussions with the clinician during the well visit. **Who was engaged at each step:** Patients

Study Comparison	Implementation Strategy Domain	Strategies used in the Intervention	Strategies used in the Comparator	Strategy Operationalization
Richardson 2021[19] **Support clinicians** (intervention) vs. **Educational materials** (comparator)	Train and educate stakeholders	Distribute educational materials	Distribute educational materials	**<u>Distribute educational materials (intervention and comparator)</u>** **Who delivered the implementation strategy:** Study team **Steps taken:** Clinicians receive 15-minute online training module orienting them to the electronic tool and how to interpret clinician summary. **Who was engaged at each step:** Clinicians
	Support clinicians	Facilitate relay of clinical data to providers	N/A	**<u>Facilitate relay of clinical data to providers (intervention only)</u>** **Who delivered the implementation strategy:** Study team **Steps taken:** The electronic tool generates a 1-page clinician summary of adolescent-reported behaviors. The report included a dashboard with flags categorizing the adolescent health risks as low, moderate or high within 6 different areas. Individual screening responses were provided below the dashboard so that clinicians could examine which specific behaviors resulted in a flag. **Who was engaged at each step:** Clinicians
	Engage consumers	Prepare patients to be active participants	N/A	**<u>Prepare patients to be active participants (intervention only)</u>** **Who delivered the implementation strategy:** Automated through electronic tool **Steps taken:** The electronic tool delivers personalized feedback based on adolescent responses through a combination of education, tips for change, and motivational messaging, including positive reinforcement for adolescents who did not engage in risks and messages to motivate behavior change when risks were present using a combination of nonnative feedback comparing adolescent-reported risks to peer reports, guidelines, and goal setting. This second version of the tool includes increased image-based feedback vs. text as well as added functionality to allow participants to choose to see more vs. less information on each topic and to receive more information about topics of interest in the form of a 1-time text or email. **Who was engaged at each step:** Patients

[a] Not enough information to code the specific ERIC-EPOC implementation strategy used in the study.

Abbreviations: ADHD = attention deficit hyperactivity disorder; BHC = behavioral health clinician; BHIP = behavioral health incorporation program; BHLC = behavioral health learning collaborative; CAP = child and adolescent psychiatrist; CC = care coordinator; EHR = electronic health record; EPOC = Effective Practice and Organisation of Care; ERIC = Expert Recommendations for Implementing Change GAPS = Guidelines for Adolescent Preventive Services; HIT = health information technology; HRA = health risk assessment; NA = not applicable; PCP = primary care provider; QI = quality improvement.

Contextual Question 1

We found two cluster RCTs conducted outside the United States that compared different strategies for implementing screening and either brief intervention or referral for a range of behavioral health risk factors.[21, 22] The first study assessed the use of a multicomponent implementation strategy versus a comparison arm receiving a single educational seminar to improve screening and counseling for multiple psychosocial risk factors among 901 adolescents and young adults ages 14 to 24 years.[21] The study was conducted in 40 general practices in Victoria, Australia, and involved at least one interested clinician (GP or nurse) at each practice. The study assessed a multicomponent **clinician training** implementation approach to introduce clinicians and practice support staff (i.e., receptionists and practice managers) at implementation practices to screening for health risk behaviors and help them integrate screening into office and clinical procedures.[21]

The second study assessed the integration of a 2.5-day training on managing common child mental health problems with SBI for GPs into an existing adult collaborative care program in Tehran, Iran.[22] A total of 49 GPs caring for 389 children ages 5 to 15 years (regardless of their reasons for seeking care) were enrolled in the study. This study assessed a **clinician training** implementation approach via an interactive 2.5-day training on managing common child mental health problems for GPs already practicing in an existing adult collaborative care program to help them more often identify child mental health problems, engage families, and provide brief interventions.[22]

Included Studies

KQ 1

1. Gryczynski J, Monico LB, Garrison K, et al. Sustainability of adolescent screening and brief intervention services in primary care after removal of implementation supports. J Stud Alcohol Drugs. 2023 Jan;84(1):103-8. doi: 10.15288/jsad.21-00324. PMID: 36799680.
2. Barbosa C, Cowell A, Dunlap L, et al. Costs and implementation effectiveness of generalist versus specialist models for adolescent screening and brief intervention in primary care. J Stud Alcohol Drugs. 2022 Mar;83(2):231-8. doi: 10.15288/jsad.2022.83.231. PMID: 35254246.
3. Richardson L, Parker EO, Zhou C, et al. Electronic health risk behavior screening with integrated feedback among adolescents in primary care: randomized controlled trial. J Med Internet Res. 2021 Mar 12;23(3):e24135. doi: 10.2196/24135. PMID: 33709942.
4. Gibson EB, Knight JR, Levinson JA, et al. Pediatric primary care provider perspectives on a computer-facilitated screening and brief intervention system for adolescent substance use. J Adolesc Health. 2021 Jul;69(1):157-61. doi: 10.1016/j.jadohealth.2020.09.037. PMID: 33143987.
5. Mitchell SG, Gryczynski J, Schwartz RP, et al. Adolescent SBIRT implementation: generalist vs. specialist models of service delivery in primary care. J Subst Abuse Treat. 2020 Apr;111:67-72. doi: 10.1016/j.jsat.2020.01.007. PMID: 32087839.
6. Lounsbury DW, Mitchell SG, Dusek KA, et al. Application of system dynamics to inform a model of adolescent SBIRT implementation in primary care settings. J Behav Health Serv Res. 2020 Apr;47(2):230-44. doi: 10.1007/s11414-019-09650-y. PMID: 31214935.
7. Harder VS, Barry SE, French S, et al. Improving adolescent depression screening in pediatric primary care. Acad Pediatr. 2019 Nov-Dec;19(8):925-33. doi: 10.1016/j.acap.2019.02.014. PMID: 30858080.

8. Gooding HC, Cheever E, Forman SF, et al. Implementation and evaluation of two educational strategies to improve screening for eating disorders in pediatric primary care. J Adolesc Health. 2017 May;60(5):606-11. doi: 10.1016/j.jadohealth.2016.12.002. PMID: 28109735.

9. Thompson LA, Wegman M, Muller K, et al. Improving adolescent health risk assessment: a multi-method pilot study. Matern Child Health J. 2016 Dec;20(12):2483-93. doi: 10.1007/s10995-016-2070-5. PMID: 27406154.

10. Sterling S, Kline-Simon AH, Satre DD, et al. Implementation of screening, brief intervention, and referral to treatment for adolescents in pediatric primary care: a cluster randomized trial. JAMA Pediatr. 2015 Nov;169(11):e153145. doi: 10.1001/jamapediatrics.2015.3145. PMID: 26523821.

11. Dalal M, Holcomb JM, Sundaresan D, et al. Identifying and responding to depression in adolescents in primary care: a quality improvement response. Clin Child Psychol Psychiatry. 2023 Apr;28(2):623-36. doi: 10.1177/13591045221105198. PMID: 35642512.

12. Walter HJ, Vernacchio L, Correa ET, et al. Five-phase replication of behavioral health integration in pediatric primary care. Pediatrics. 2021 Aug;148(2). doi: 10.1542/peds.2020-001073. PMID: 34210739.

13. Baum RA, Hoholik S, Maciejewski H, et al. Using practice facilitation to improve depression management in rural pediatric primary care practices. Pediatr Qual Saf. 2020 May-Jun;5(3):e295. doi: 10.1097/pq9.0000000000000295. PMID: 32656464.

14. Richardson LP, Zhou C, Gersh E, et al. Effect of electronic screening with personalized feedback on adolescent health risk behaviors in a primary care setting: a randomized clinical trial. JAMA Netw Open. 2019 May 3;2(5):e193581. doi: 10.1001/jamanetworkopen.2019.3581. PMID: 31074815.

15. Knight JR, Sherritt L, Gibson EB, et al. Effect of computer-based substance use screening and brief behavioral counseling vs usual care for youths in pediatric primary care: a pilot randomized clinical trial. JAMA Network Open. 2019;2(6):e196258-e. doi: 10.1001/jamanetworkopen.2019.6258.

CQ 1

1. Sanci L, Chondros P, Sawyer S, et al. Responding to young people's health risks in primary care: a cluster randomised trial of training clinicians in screening and motivational interviewing. PLoS One. 2015;10(9):e0137581. doi: 10.1371/journal.pone.0137581. PMID: 26422235.

2. Sharifi V, Shahrivar Z, Zarafshan H, et al. Effect of general practitioner training in a collaborative child mental health care program on children’s mental health outcomes in a low-resource setting: A cluster randomized trial. JAMA Psychiatry. 2023;80(1):22-30. doi: 10.1001/jamapsychiatry.2022.3989. PMID: 2023-58582-002.

Appendix C. Risk of Bias Assessments for Included Studies

Risk of bias ratings by study design for each included study are reported in **Table C-1, Table C-2, Table C-3,** and **Table C-4**. We report ratings for each domain, overall ratings, and comments justifying overall ratings when necessary. Domain and overall ratings apply to all outcomes in a study unless otherwise indicated.

Table C-1. Risk of bias ratings for randomized controlled trials

Study	Domain 1	Domain 2b	Domain 3	Domain 4	Domain 5	Overall	Comments
Knight 2019[14]	Some concerns	Some concerns	Some concerns	Low	Low	Some concerns	Potential deviations from the intervention (providers trained to provide counseling treated UC and cSBI participants) and missingness (individuals who engaged in substance use behaviors may be less likely to return for followup visits with provider).
Richardson 2019[18]	Low	Some concerns	Low	Low	Low	Some concerns	Bias would have most likely diluted the effect as being a part of the study and receiving training and education on the use of the tool and MI; may have resulted in an unintended boost in delivery of counseling by providers caring for patients randomized to UC.
Richardson 2021[19]	Low	Some concerns	Low	Low	Low	Some concerns	None

cSBI = computerized screening and brief intervention; MI = motivational interviewing; UC = usual care.
Domain 1: Bias due to randomization.
Domain 2b: Bias due to deviations from intended interventions (effect of adhering to intervention).
Domain 3: Bias due to missing data.
Domain 4: Bias in measurement of outcomes.
Domain 5: Bias in selection of the reported result.

Table C-2. Risk of bias ratings for cluster-randomized controlled trials

Study	Domain 1a	Domain 1b	Domain 2	Domain 3	Domain 4	Domain 5	Overall	Comments
Mitchell 2020[10]	Low	Low	Low	Low	Low	Low	Low	None
Sterling 2015[13]	Some concerns	Low	Low	Low	Low	Low	Some concerns	Some concerns with randomization due to baseline differences in the patient population

Domain 1a: Bias due to randomization.
Domain 1b: Bias due to the timing of identification or recruitment.
Domain 2: Bias due to deviations from intended interventions (effect of adhering to intervention).
Domain 3: Bias due to missing data.
Domain 4: Bias in measurement of outcomes.
Domain 5: Bias in selection of the reported result.

Table C-3. Risk of bias ratings for non-randomized controlled trials[a]

Study	Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Domain 6	Domain 7	Overall	Comments
Harder 2019[6]	High	Low	Low	No information	Low	Low	No information	High	High risk of bias due to confounding, no information about deviations from intended intervention or selection of reported results. Adjustment for some confounders, but residual confounding likely.
Dalal 2023[7]	High	Low	Low	No information	Low	No information	No information	High	Pediatricians self-selected into the QI group and were therefore more motivated to integrate what they learned through the study's active-learning activities than control providers would have been. This bias is not accounted for by the study's analysis and would have affected all outcomes.
Walter 2021[17]	High	Low	Low	No Information	Some concerns; low for adoption and penetration	Some concerns	Low	High	High risk of bias for the confounding domain and moderate ROB in the missing data domain, which leads to overall rating of high risk of bias.
Thompson 2016[16]	Some concerns	Some concerns	Low	No information	High	Low	No information	High	Missingness of data by group was not reported, and because potential ROB due to missing data was the most significant potential source of bias, it is unclear which direction the bias would favor.
Gooding 2017[9]	High	Low	Low	High	High; low for documented and self-reported ED screening rates	Low	No information	High	High risk of bias due to potential confounding. No adjustment for confounding and no information about deviations from intended intervention.

[a] To assess the risk of bias in the included studies, we used the Cochrane Risk of Bias 2 (RoB 2.0) tool for individually randomized parallel-group trials, the RoB 2 extension for cluster-randomized parallel-group trials, the Risk Of Bias In Non-randomized Studies of Interventions (ROBINS-I) tool for nonrandomized studies of interventions with concurrent controls, and the Effective Public Health Practice Project tool for interrupted time series analysis. Because the risk of bias tools use different terminologies for different risk of bias categories, we harmonized the terminology for this report. Further details are reported in Section 1.4.

ED = eating disorder; QI = quality improvement; ROB = risk of bias.

Domain 1: Bias due to confounding.

Domain 2: Bias due to selection of participants.

Domain 3: Bias in classification of interventions.

Domain 4: Bias due to deviations from intended interventions.
Domain 5: Bias due to missing data.
Domain 6: Bias in measurement of outcomes.
Domain 7: Bias in selection of the reported result.

Table C-4. Risk of bias ratings for interrupted time series studies[a]

Study	Domain 1	Domain 2	Domain 3	Domain 4	Domain 5	Domain 6	Domain 7	Comments
Baum 2020[8]	Some concerns	Some concerns	High	High	Some concerns	Some concerns	High	No adequate statistical analysis (i.e., only a simple time trend analysis was used). Also, insufficient reporting of baseline characteristics about providers across the 4 participating clinics to determine whether factors like lead physicians' years of experience may have potentially affected outcomes.

[a] To assess the risk of bias in the included studies, we used the Cochrane Risk of Bias 2 (RoB 2.0) tool for individually randomized parallel-group trials, the RoB 2 extension for cluster-randomized parallel-group trials, the Risk Of Bias In Non-randomized Studies of Interventions (ROBINS-I) tool for nonrandomized studies of interventions with concurrent controls, and the Effective Public Health Practice Project tool for interrupted time series analysis. Because the risk of bias tools use different terminologies for different risk of bias categories, we harmonized the terminology for this report. Further details are reported in Section 1.4.
Domain 1: Intervention independent of other changes.
Domain 2: Shape of the intervention effect pre-specified.
Domain 3: Intervention unlikely to affect data collection.
Domain 4: Knowledge of the allocated intervention adequately prevented during the study.
Domain 5: Incomplete outcome data adequately addressed.
Domain 6: Selective outcome reporting.
Domain 7: Other risks of bias.

Appendix D. Strength of Evidence Assessments

Detailed strength of evidence ratings for prioritized outcomes are reported in **Table D-1 to Table D-12**. We grouped studies by clinical area (depression, eating disorders, substance use, and general behavioral health) and implementation strategy comparison.

Table D-1. SOE ratings for studies comparing a learning collaborative to no implementation strategy for screening for depression and suicide risk

Strength of Evidence Assessment								No. of Patients		Effect		SOE and Direction of Effect
Outcome	No. of Studies	Study Design	Risk of Bias	Inconsistency	Indirectness	Imprecision	Other Considerations	Learning Collaborative	No Implementation Strategy	Relative (95% CI)	Absolute (95% CI)	
Proportion of Patients Screened (followup: range 6 months to 19 months)	2[6, 8]	Non-randomized studie	Very serious[a]	Not serious	Not serious	Serious	None	712/792 (89.9%)	579/772 (75.0%)	OR 3.53 (1.14 to 10.98)	164 more per 1,000 (from 24 more to 221 more)	⊕◯◯◯ Very low for greater effectivness of implemen-tation strategy
Sustainability (followup: mean 12 months)	2[6, 8]	Non-randomized studies	Very serious[a]	Not serious	Not serious	Not serious	None	Screening was consistent around 80% in the ITS study over 6 months following the intervention.				⊕◯◯◯ Very low for greater effectiveness of implemen-tation strategy
Initial plan of care in patients who screened positive (followup: mean 1 years)	1[6]	Non-randomized study	Very serious[b]	Not serious	Not serious	Not serious	None	105/129 (81.4%)	82/90 (91.1%)	OR 0.36 (0.11 to 1.16)	124 fewer per 1,000 (from 381 fewer to 11 more)	⊕◯◯◯ Very low for greater effectiveness of comparator strategy

[a] Inadequate statistical analysis in both studies; rated down 2 levels for risk of bias.

[b] No adequate adjustment for confounders; intervention group was part of learning collaborative and had probably a more positive attitude toward screening than control group; rated down 2 levels for risk of bias.

CI = confidence interval; ITS = interrupted time series; OR = odds ratio; SOE = strength of evidence.

Table D-2. SOE ratings for studies comparing clinician support to no implementation strategy for screening for depression and suicide risk

Strength of Evidence Assessment								Effect	SOE and Direction of Effect
Outcome	**No. of Studies**	**Study Design**	**Risk of Bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other Considerations**	**Clinician Support**	
Proportion of Patients Screened (followup: mean 12 weeks; assessed with: Documented)	1[7]	Non-randomized study	Serious[a]	Not serious	Not serious	Not serious	None	Patients in the intervention group were significantly more likely to be screened than those in the control group after 12 weeks (94% vs. 89%, p<0.01).	⊕◯◯◯ Very low for greater effectiveness of implementa-tion strategy
Equity	1[7]	Non-randomized study	Serious[a]	Not serious	Not serious	Not serious	None	Comparable screening rates between racial minorities and White children (QI: 94.5% vs. 94.7%; non-QI: 89.7% vs. 90.7%)	⊕◯◯◯ Very low for comparable effectiveness

[a] No adequate adjustment for confounders; intervention group was part of learning collaborative and had probably a more positive attitude toward screening than control group; rated down 1 level for risk of bias.
CI = confidence interval; QI = quality improvement; SOE = strength of evidence

Table D-3. SOE ratings for studies comparing a learning collaborative to education for eating disorders

Strength of Evidence Assessment								№ of patients		Effect		SOE and Direction of Effect
Outcome	**No. of Studies**	**Study Design**	**Risk of Bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other Considerations**	**Learning Collaborative**	**Discrete Educational Strategy**	**Relative (95% CI)**	**Absolute (95% CI)**	
Proportion of Patients Screened (documented) (followup: mean 5 weeks)	1[9]	Non-randomized study	Very serious[a]	Not serious	Not serious	Not serious	None	112/509 (22.0%)	436/7592 (5.7%)	RR 3.84 (3.18 to 4.63)	163 more per 1,000 (from 125 more to 208 more)	⊕◯◯◯ Very low for greater effectiveness of implementation strategy
Proportion of High-Risk Patients Screened (documented) (followup: mean 5 weeks)	1[9]	Non-randomized study	Very serious[a]	Not serious	Not serious	Serious[b]	None	No significant difference in the change of documented screening for high-risk patients (active learning: +15.7 percentage points [14.3% to 30%]; print learning: +5.5 percentage points [3.2% to 8.7%]; p=0.9).				⊕◯◯◯ Very low for greater effectiveness of implementa-tion strategy

[a] No adjustment for confounders; intervention group was part of learning collaborative and had probably a more positive attitude toward screening than control group; rated down 2 levels for very serious bias.
[b] Only 65 patients were screened, which does not meet optimal information size; rated down 1 level for imprecision.
CI = confidence interval; RR = risk ratio; SOE = strength of evidence.

Table D-4. SOE ratings for studies comparing behavioral health incorporation plus clinician support to clinician support only for screening, brief advice, and brief intervention for alcohol tobacco, and other drug use

Strength of Evidence Assessment								Effect	SOE and Direction of Effect
Outcome	No. of Studies	Study Design	Risk of Bias	Inconsistency	Indirectness	Imprecision	Other Considerations		
Reach: Screening Provided in the Implementation Phase (followup: 20 months; assessed with: observation)	1[10]	Randomized trial	Not serious	Not serious	Not serious	Not serious	None	Counts: NR; 64.1% vs. 59.2%, p=0.52	⊕⊕⊕⊕ High for comparable effectiveness
Reach: Screening Provided in the Sustainability Phase (followup: 12 months; assessed with: observation)	1[10]	Randomized trial	Not serious	Not serious	Not serious	Not serious	None	Counts: NR; 73.9% vs. 65.6%, p-value NR	⊕⊕⊕⊕ High for comparable effectiveness
Sustainability: Brief Advice Provided in the Implementation Phase (followup: 20 months; assessed with: observation)	1[10]	Randomized trial	Not serious	Not serious	Serious[a]	Serious[b]	None	49/161 (30.4%) vs. 54/191 (28.3%); adj OR=0.84 (95% CI, 0.26 to 2.70)[c]	⊕⊕◯◯ Low for comparable effectiveness
Sustainability: Brief Advice Provided in the Sustainability Phase (followup: 12 months; assessed with: observation)	1[10]	Randomized trial	Not serious	Not serious	Serious[d]	Serious[b]	None	28/85 (32.9%) vs. 55/156 (35.3%), p=0.50	⊕⊕◯◯ Low for comparable effectiveness
Sustainability: Brief Intervention Provided in the Implementation Phase (followup: 20 months; assessed with: observation)	1[10]	Randomized trial	Not serious	Not serious	Serious[e]	Serious[b]	None	7/86 (8.1%) vs. 30/79 (38.0%); adj OR=0.15 (95% CI, 0.04 to 0.56)[c]	⊕⊕◯◯ Low for greater effectiveness of comparator
Sustainability: Brief Intervention Provided in the Sustainability Phase (followup: 12 months; assessed with: observation)	1[10]	Randomized trial	Not serious	Not serious	Serious[f]	Serious[b]	None	2/52 (3.8%) vs. 28/64 (43.8%), p<0.001	⊕⊕◯◯ Low for greater effectiveness of comparator

[a] Subgroup of individuals (352 of 9,639 visits) with a CRAFFT = 1; downgraded 1 level for indirectness.
[b] Does not meet optimal information size; downgraded 1 level for imprecision.
[c] Study authors reported adjusted OR for generalist vs. specialist; adj OR for specialist vs. generalist calculated.
[d] Subgroup of individuals (241 of 4,847 visits) with a CRAFFT = 1; downgraded 1 level for indirectness.
[e] Subgroup of individuals (165 of 9,639 visits) with a CRAFFT ≥ 2; downgraded 1 level for indirectness.
[f] Subgroup of individuals (116 of 4,847 visits) with a CRAFFT ≥ 2; downgraded 1 level for indirectness.
adj = adjusted; CI, = confidence interval; CRAFFT = car, relax, alone, forget, family or friends, trouble; NR = not reported; OR = odds ratio; SOE = strength of evidence.

Table D-5. SOE ratings for studies comparing clinician support plus behavioral health incorporation compared to clinician support and no behavioral health incorporation for SBIRT for alcohol, tobacco, and other drug use

Strength of Evidence Assessment								Effect	SOE and Direction of Effect
Outcome	**No. of Studies**	**Study Design**	**Risk of Bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other Considerations**		
Reach: Number of Assessments (followup: 24 months; assessed with: observation)	1[13]	Randomized trial	Not serious	Not serious	Not serious	Not serious	None	163/671 (24.3%) vs. 149/584 (25.5%); adj OR=0.93 (95% CI, 0.72 to 1.21)	⊕⊕⊕⊕ High for comparable effectiveness
Reach: Brief Intervention Provided (followup: 24 months; assessed with: observation)	1[13]	Randomized trial	Not serious	Not serious	Not serious	Serious[a]	None	171/671 (25.5%) vs. 96/579 (16.4%); adj OR=1.74 (95% CI, 1.31 to 2.31)	⊕⊕⊕◯ Moderate for greater effectiveness of implementation strategy
Reach: Referral to Specialty Treatment Provided (followup: 24 months; assessed with: observation)	1[13]	Randomized trial	Not serious	Not serious	Not serious	Very serious[b]	None	Counts: NR; adj OR=0.58 (95% CI, 0.43 to 0.78)	⊕⊕◯◯ Low for greater effectiveness of comparator

[a] Number of events does not meet optimal information size; downgraded 1 level for imprecision.
[b] Counts not reported; however, referral events cannot exceed brief intervention events and likely fewer; downgraded 2 levels for imprecision.
adj = adjusted; CI = confidence interval; NR = not reported; OR = odds ratio; SOE = strength of evidence.

Table D-6. SOE ratings for studies comparing clinician support to usual care for alcohol, tobacco, and other drug use

Strength of Evidence Assessment								Effect	SOE and Direction of Effect
Outcome	**No. of Studies**	**Study Design**	**Risk of Bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other Considerations**		
Reach: Brief Intervention Provided (followup: 24 months; assessed with: observation)	1[13]	Randomized trial	Not serious	Not serious	Not serious	Serious[a]	None	96/584 (16.4%) vs. 11/611 (1.8%); adj OR=10.37 (95% CI, 5.45 to 19.74)	⊕⊕⊕◯ Moderate for greater effectiveness of implementation strategy
Reach: Referral to Specialty Treatment (followup: 24 months; assessed with: observation)	1[13]	Randomized trial	Not serious	Not serious	Not serious	Very serious[b]	None	Counts: NR; adj OR=1.11 (95% CI, 0.83 to 1.49)[c]	⊕⊕◯◯ Low for comparable effectiveness

[a] Number of events does not meet optimal information size; downgraded 1 level for imprecision.
[b] Counts not reported; however, referral events cannot exceed brief intervention events and likely fewer; downgraded 2 levels for imprecision.
[c] Counts not reported.
adj = adjusted; CI = confidence interval; NR = not reported; OR = odds ratio; SOE = strength of evidence.

Table D-7. SOE ratings for studies comparing computer-facilitated screening and brief intervention to computerized screening followed by treatment as usual for alcohol, tobacco, and other drug use among high-risk adolescents[a]

Strength of Evidence Assessment								Effect	SOE and Direction of Effect
Outcome	**No. of Studies**	**Study Design**	**Risk of Bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other Considerations**		
Mental health: Time to First Post-visit Alcohol Use (followup: 12 months; assessed with: youth self-report)	1[14]	Randomized trial	Not serious	Not serious	Not serious	Serious[b]	None	Time to first use of alcohol, median days (IQR) cSBI: 97 (51 to 222) UC: 44 (21 to 143) adj HR=0.69 (0.47 to 1.02)	⊕⊕⊕◯ Moderate for greater effectiveness of implementation strategy
Mental Health: Time to first Post-visit Heavy Episodic Drinking (followup: 12 months; assessed with: youth self-report)	1[14]	Randomized trial	Not serious	Not serious	Not serious	Serious[b]	None	Time to first heavy episodic alcohol use, median days (IQR) cSBI: 366 (124 to 366) UC: 213 (51 to 366); adj HR=0.66 (0.40 to 1.10)	⊕⊕⊕◯ Moderate for comparable effectiveness
Mental Health: Time to First Post-visit Cannabis Use (followup: 12 months; assessed with: youth self-report)	1[14]	Randomized trial	Not serious	Not serious	Not serious	Serious[b]	None	Time to first cannabis use, median days (IQR) cSBI: 101 (33 to 226) UC: 83 (27 to 152); adj HR=0.62 (0.41 to 0.94)	⊕⊕⊕◯ Moderate for greater effectiveness of implementation strategy

[a] Patients who reported any substance use or riding risk at baseline.

[b] Number of events does not meet optimal information size; downgraded 1 level for imprecision.

adj = adjusted; cSBI = computerized screening and brief intervention; HR = hazard ratio; IQR = interquartile range; SOE = strength of evidence; UC = usual care.

Table D-8. SOE ratings for studies comparing computer-facilitated screening and brief intervention to computerized screening followed by treatment as usual for alcohol, tobacco, and other drug use among low-risk adolescents[a]

Strength of Evidence Assessment								Effect	SOE and Direction of Effect
Outcome	**No. of Studies**	**Study Design**	**Risk of Bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other Considerations**		
Mental Health: Time to First Post-visit Alcohol Use (followup: 12 months; assessed with: youth self-report)	1[14]	Randomized trial	Not serious	Not serious	Not serious	Serious[b]	None	Time to first use of alcohol, median days (IQR) cSBI: 366 (338 to 366) UC: 366 (334 to 366); adj HR=0.87 (0.57 to 1.31)	⊕⊕⊕◯ Moderate for comparable effectiveness
Mental Health: Time to First Post-visit Cannabis use (followup: 12 months; assessed with: youth self-report)	1[14]	Randomized trial	Not serious	Not serious	Not serious	Serious[b]	None	Time to first cannabis use, median days (IQR) cSBI: 366 (366 to 366) UC: 366 (366 to 366); adj HR=0.76 (0.44 to 1.32)	⊕⊕⊕◯ Moderate for comparable effectiveness

[a] Patients who reported no substance use or riding risk at baseline.

[b] Small sample size and wide confidence interval; downgraded 1 level for imprecision.

adj = adjusted; cSBI = computerized screening and brief intervention; HR = hazard ratio; IQR = interquartile range; SOE = strength of evidence; UC = usual care.

Table D-9. SOE ratings for studies comparing computer-facilitated screening and brief intervention to computerized screening followed by treatment as usual for alcohol, tobacco, and other drug use among high-risk adolescents[a]

Strength of Evidence Assessment								Effect	SOE and Direction of Effect
Outcome	**No. of Studies**	**Study Design**	**Risk of Bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other Considerations**		
Address a positive screen: Delivery of advice to avoid cannabis or alcohol use; delivery of information about health risks of cannabis and alcohol use	1[14]	Randomized trial	Not serious	Not serious	Not serious	Serious[b]	None	***brief advice for alcohol use***: 105/148 (70.9) vs. 36/63 (57.1); adj RR: 1.21 (0.95 to 1.52) ***brief advice for cannabis use***: 122/148 (82.4) vs. 37/63 (58.7); adj RR: 1.36 (1.09 to 1.69) ***information about health risks of alcohol use***: 132/148 (89.2) vs. 47/63 (74.6); adj RR: 1.22 (1.04 to 1.44) ***information about health risks of cannabis use***: 117/148 (79.1) vs. 40/63 (63.5) adj RR: 1.34 (1.09 to 1.65) adj RR ranged from 1.21 to 1.36	⊕⊕⊕◯ Moderate for greater effectiveness of implementation strategy

[a] Patients who reported any substance use or riding risk at baseline.
[b] Number of events did not reach the threshold for optimal information size; rated down 1 level for imprecision
adj = adjusted; cSBI = computerized screening and brief intervention; HR = hazard ratio; IQR = interquartile range; SOE = strength of evidence; UC = usual care.

Table D-10. SOE ratings for studies comparing a clinician support-based implementation strategy compared to educational materials for screening and brief intervention for protective factors and risk behaviors

Strength of evidence assessment								№ of patients		Effect	SOE and Direction of Effect
Outcome	No. of Studies	Study Design	Risk of Bias	Inconsistency	Indirectness	Imprecision	Other Considerations	Clinician Support	Educational Materials		
Mental Health (risk score) (followup: 3 months; assessed with: Check Yourself; Scale from: 0 to 21)	2[18, 19]	Randomized trials	Not serious	Not serious	Not serious	Not serious	None	292	308	MD 0.19 lower (95% CI, 0.54 lower to 0.17 higher)	⊕⊕⊕⊕ High for comparable effectiveness
Mental Health (risk score) (followup: 6 months; assessed with: Check Yourself)	1[19]	Randomized trial	Not serious	Not serious	Not serious	Serious[a]	None	145	155	MD 0.12 lower (95% CI, 0.29 lower to 0.52 higher)	⊕⊕⊕◯ Moderate for comparable effectiveness
Address a positive screen (counseling for moderate risk behaviors)	2[18, 19]	Randomized trials	Not serious	Not serious	Not serious	Not serious	None	-	-	Rate ratio 1.33 (95% CI, 1.10 to 1.56)	⊕⊕⊕⊕ High for greater effectiveness of implementation strategy
Address a positive screen (counseling for moderate or high risk behaviora)	2[18, 19]	Randomized trials	Not serious	Not serious	Not serious	Not serious	None	-	-	Rate ratio 1.33 (95% CI, 1.11 to 1.56)	⊕⊕⊕⊕ High for greater effectiveness of implementation strategy

[a] Only 200 patients were screened, which does not meet optimal information size; rated down 1 level for imprecision.
CI = confidence interval; MD = mean difference; SOE = strength of evidence.

Table D-11. SOE ratings for studies comparing a behavioral health incorporation strategy to no strategy for implementing a behavioral health stepped-care model

Strength of Evidence Assessment								Effect	SOE and Direction of Effect
Outcome	**No. of Studies**	**Study Design**	**Risk of Bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other Considerations**		
Reach (screening for risky behaviors at well visits)	1[17]	Non-randomized study	Serious[a]	Not serious	Not serious	Not serious	None	Behavioral health screening increased from 55.6% in the control period to 73.9% in the implementation period, with an adjusted odds ratio (95% CI) of 1.25 (1.21 to 1.29); p <0.001.	⊕◯◯◯ Very low for greater effectiveness of implementation strategy
Address Positive Screen (primary care behavioral health visits)	1[17]	Non-randomized study	Serious[a]	Not serious	Not serious	Not serious	None	Behavioral health visits to address positive screen increased from 107 visits per 1,000 patient-years in the control period to 177 visits per 1,000 patient-years in the implementation period, with an adjusted rate ratio (95% CI) of 1.2 (1.1 to 1.3); p<0.001 adjusted for secular trends.	⊕◯◯◯ Very low for greater effectiveness of implementation strategy
Initiation of Treatment (psychotherapy visits)	1[17]	Non-randomized study	Serious[a]	Not serious	Not serious	Not serious	Strong association	Psychotherapy visits increased from 15 visits per 1,000 patient-years in the control period to 176 visits per 1,000 patient-years in the implementation period, with an adjusted rate ratio (95% CI) of 6.7 (5.8 to 7.7); p<0.001 adjusted for secular trends.	⊕⊕◯◯ Low for greater effectiveness of implementation strategy
Initiation of Treatment (guideline-congruent ADHD prescription)	1[17]	Non-randomized study	Serious[a]	Not serious	Not serious	Not serious	None	No difference in guideline-congruent prescribing for ADHD medications between the control period and implementation period [Control period: 254 rates per 1,000 patient-years, implementation period: 362 rates per 1,000 patient-years, adjusted rate ratio (95% CI): 1.01 (0.96 to 1.07); p=0.60].	⊕◯◯◯ Very low for comparable effectiveness
Initiation of Treatment (guideline-congruent SSRI prescription)	1[17]	Non-randomized study	Serious[a]	Not serious	Not serious	Not serious	None	Guideline-congruent SSRI prescriptions increased from 57 per 1,000 patient-years in the control period to 190 per 1,000 patient-years in the implementation period, with an adjusted rate ratio (95% CI) of 1.3 (1.2 to 1.4); p<0.001.	⊕◯◯◯ Very low for greater effectivenes of implementation strategy

[a] Study was high risk of bias; rated down 1 level for risk of bias.

ADHD = attention deficit hyperactivity disorder; CI = confidence interval; SSRI = selective serotonin reuptake inhibitor; SOE = strength of evidence.

Table D-12. SOE ratings for a technology-based strategy compared to no strategy for implementing screening for risky behaviors and emotions

Strength of Evidence Assessment								Effect	SOE and Direction of Effect
Outcome	**No. of Studies**	**Study Design**	**Risk of Bias**	**Inconsistency**	**Indirectness**	**Imprecision**	**Other Considerations**		
Reach (rate of screening)	1[16]	Non-randomized study	Serious[a]	Not serious	Not serious	Serious[b]	None	Adolescents in the intervention group were more likely to report receiving screening for risky behaviors (0.36 vs. 0.05, p=0.03) and screening for depression, mental health, emotions problems and healthy relationships (0.42 vs. 0.08, p<0.01).	⊕◯◯◯ Very low for greater effectiveness of implementation strategy

[a] Moderate risk of bias for confounding domain because sites were in charge of recruitment. Serious risk of bias in the missing data domain due to >50% missing data. This makes for an overall serious risk of bias.
[b] Lack of precision due to high rate of missing data.
SOE = strength of evidence.

Appendix E. Detailed Findings

Key Question 1. Detailed Evidence Tables

Table E-1. Evidence from studies on depression

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Harder, 2019[6] Nonrandomized controlled trial **QI Learning Collaborative** (intervention) vs. **No Strategy** (comparator) Risk of bias: High	**Reach** Screened for depression in 2012 (when learning collaborative occurred, using annual sample) Intervention: 264/792 (37%) Comparator: 261/772 (39%) p=0.37 Screened for depression in 2014 (during 1-year followup, using annual sample) Intervention: 712/792 (90%) Comparator: 579/772 (75%) p<0.001 AOR 3.53 (95% CI, 1.14 to 10.98, p<0.05) **Fidelity** Screened using **a validated tool** in 2014 (during 1-year followup, using annual sample) Intervention: 607/792 (77%) Comparator: 246/772 (32%) Chi-square=316.1, P<0.001 AOR: 37.51 (95% CI, 7.67 to 183.48, p<0.0005)	**Address a Positive Screen** Patients who screened positive with **an initial plan of** care documented in 2014 (during 1-year followup, using annual sample) Intervention: 105/129 (81%) Comparator: 82/90 (91%) p=0.05 AOR: 0.36 (95% CI, 0.11 to 1.16)	**Mental Health** Screened positive in 2014 (during 1-year followup, using annual sample) Intervention: 129/712 (18%) Comparator: 90/579 (16%)	NR	N/A
Dalal, 2023[7] Nonrandomized controlled trial	**Reach** PSC-17 first-stage screening rates among children Intervention: 836[a] (93.8%) Comparator: 1,565[a] (89.1%) Between-group p<0.001	**Equity** Reach: First-stage PSC-17 screening rates among Non-White and/or Hispanic children	**Mental Health** Risk prevalence in first-stage screening with PSC-17-OVR Intervention: 76 (8.5%) Comparator: 176[a] (10.0%)	NR	NR

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Support clinicians (intervention) vs. **No strategy** (comparator) Risk of bias: High	**Fidelity** Second-stage PHQ-9 screening following a positive PSC-17 screen Intervention: 80 (54.8%) Comparator: 46 (16.4%) Between-group p<0.001 Provider use of tools to facilitate implementation: Although this study provided a standardized template ("Smart Phrase") in the EHR to help guide QI-participating pediatricians, only about half of the group consistently used the template and the rest relied on documentation with free text notes.	Intervention: Not reported (94.5%) Comparator: Not reported (89.7%) PSC-17 first-stage screening rates among on-Hispanic White children Intervention: Not reported (94.7%) Comparator: Not reported (90.7%) Between-group p's not reported, but no statistically significant difference in first-stage screening rates between children from racial/ethnic minority groups and non-Hispanic White children within either the QI arm (p=0.95) or non-QI arm (p=0.65) Fidelity: Second-stage PHQ-9 screening following a positive PSC-17 screen among non-White and/or Hispanic children Intervention: Not reported (69.2%) Comparator: Not reported (19.4%) Second-stage PHQ-9 screening following a positive PSC-17 screen among non-Hispanic White children Intervention: Not	Risk prevalence in first-stage screening with PSC-17-INT Intervention: 133 (14.9%) Comparator: 246[a] (14.0%) Risk prevalence in first-stage screening with either or both PSC-17-OVR and PSC-17-INT Intervention: 146 (16.4%) Comparator: 279[a] (15.9%)		

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Support clinicians (intervention) vs. **No strategy** (comparator) Risk of bias: High (continued)		reported (56.3%) Comparator: Not reported (15.8%) Between-group p's not reported, but no statistically significant difference in first-stage screening rates between children from racial/ethnic minority groups and non-Hispanic White children within either the QI arm (p=0.39) or non-QI arm (p=0.64)			
Baum 2020[8] Interrupted time series (quality improvement centerline shift analysis) **Learning collaborative** (intervention) vs. **No comparator** Risk of bias: High	**Reach** Rate of screening at participating practices Baseline: 0% 3 months: 28% 6 months: 81% 9 months: 86% **Sustainability** 6 months after the intervention, screening was consistent at around 80% once practices standardized the process for form completion.	NR	NR	Change from baseline in documentation of the depression bundle Pre-intervention: 59% 6 months: 86% 12 months: 100%	NR

[a] Value calculated by authors

AOR = adjusted odds ratio; CI = confidence interval; EHR = electronic health record; NR = not reported; PHQ-9 = Patient Health Questionnaire; PSC-INT = Pediatric Symptom Checklist internalizing subscale; PSC-OVR = Pediatric Symptom Checklist overall psychosocial functioning = QI, quality improvement; vs. = versus.

Table E-2. Evidence from studies on eating disorders

Study Characteristics	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Gooding, 2017[9] Nonrandomized controlled trial **Learning collaborative** (intervention) vs. **Educational materials** (comparator) Risk of bias: High	**Reach** Percentage of patients screened (documented) Pre-intervention Intervention: 11/232 (4.7%) Comparator: 167/3,673 (4.5%) Post-intervention Intervention: 112/509 (22%) Comparator: 436/7,592 (5.7%) Absolute difference Intervention: 17.3 (95% CI, 12.7 to 21.8) Comparator: 1.2 (95% CI, 0.3 to 2.1) p<0.001 Percentage of patients screened (self-reported) Pre-intervention Intervention: 65.9% Comparator: 45.6% Post-intervention Intervention: 70.8% Comparator: 49.7% Absolute difference Intervention: 4.9 Comparator: 4.1 p=0.8	NR	NR	Estimated prevalence of eating disorders in the United States by practitioners during pre-period (perceived need for screening) Intervention: 13% Comparator: 10% p=0.559 Median knowledge score among practitioners (range) out of 12 Intervention: 11 (6-12) Comparator: 7 (1-10) Practitioners in the active-learning group reported greater increases in satisfaction with the training they had received regarding eating disorder screening and diagnosis relative to the print-learning group (p<0.01). Changes in satisfaction with the training to medically monitor patients with an eating disorder were not significantly different between the active-learning and print-learning groups.	Percentage of high-risk patients screened (documented) Pre-intervention Intervention: 3/21 (14.3%) Comparator: 10/312 (3.2%) Post-intervention Intervention: 12/40 (30%) Comparator: 53/611 (8.7%) Absolute difference Intervention: 15.7 (95% CI, -4.9 to 36.4) Comparator: 5.5 (95% CI, 2.8 to 8.4) p=0.9 Percentage of high-risk patients screened (self-reported) Pre-intervention Intervention: 80.0% Comparator: 83.5% Post-intervention Intervention: 89.2% Comparator: 85.6% Absolute difference Intervention: 9.2% Comparator: 2.2% p=0.2

CI, confidence interval; NR = not reported.

Table E-3. Evidence from studies on alcohol, tobacco, and substance use disorders

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Mitchell, 2020[10] Gryczynski, 2023[12] Cluster randomized controlled trial **Behavioral health incorporation** (intervention) vs. **Clinician support** (comparator) Risk of bias: Low	**Implementation Costs** SBIRT marginal cost per patient with a positive screen for brief intervention Intervention: $6.72 Comparator: $6.05 **Reach** Patients screened Implementation phase Intervention: 64.1% Comparator: 59.2% Intervention vs. comparator: p=0.52 **Sustainability** Patients screened Sustainability phase Intervention: 73.9% Comparator: 65.6% Implementation and sustainability phase Intervention vs. comparator: OR=1.3 (95% CI, 0.5 to 3.3)[a] Screening provided Implementation phase: 62% Sustainability phase: 70% Sustainability vs. implementation: OR=1.20 (95% CI, 1.01 to 1.43) Intervention vs. comparator: NS Phase x condition: p=0.12 Implementation and sustainability phases Intervention: 77/246 (31.3%) Comparator: 109/347 (31.4%)	**Address a positive screen** Brief advice provided Implementation phase Intervention: 49/161 (30.4%) Comparator: 54/191 (28.3%) Intervention vs comparator: p=0.77 Intervention vs. Comparator: adj OR=0.84 (95% CI: 0.26 to 2.70) Brief intervention provided Intervention: 7/86 (8.1%) Comparator: 30/79 (38.0%) Comparator vs. intervention: adj OR=6.53 (1.79 to 23.90), p=0.005 Intervention vs. comparator: adj OR=0.15 (0.04 to 0.56)[a] Referral to treatment at an outside agency Intervention: 3 Comparator: 1	**Mental Health** Brief advice indicated (Substance use with CRAFFT=1) visits, N (%)[a] Intervention: 161/5406 (3.0%)[a] Comparator: 191/4233 (4.5%)[a] Positive screen/Brief intervention indicated (CRAFFT ≥2) visits, N Intervention: 83 Comparator: 77	**Program cost** SBIRT for 1 year, per site Intervention: $13,548 Comparator: $12,081	N/A

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Mitchell, 2020[10] Gryczynski, 2023[12] Cluster randomized controlled trial **Behavioral health incorporation** (intervention) vs. **Clinician support** (comparator) Risk of bias: Low (continued)	Intervention vs. comparator: OR=0.69 (95% CI: 0.23 to 2.17) Sustainability phase, n/N (%) Intervention: 2/52 (3.8%) Comparator: 28/64 (43.8%) Intervention vs. comparator: p<0.001 Implementation and sustainability phases Intervention: 9/138 (6.5) Comparator: 58/143 (40.1) Intervention vs. comparator: OR=0.12 (95% CI: 0.04 to 0.36) Phase x condition: p=0.34 Brief advice provided Implementation phase Intervention: 49/161 (30.4%) Comparator: 54/191 (28.3%) Intervention vs comparator: p=0.77 Intervention vs. comparator: adj OR=0.84 (95% CI: 0.26 to 2.70) Sustainability phase Intervention: 28/85 (32.9%) Comparator: 55/156 (35.3%) Intervention vs. comparator: p=0.50 Implementation vs. sustainability phases: p = 0.83 Condition x phase: p=0.78 Brief intervention provided Intervention: 7/86 (8.1%) Comparator: 30/79 (38.0%)				

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Mitchell, 2020[10] Gryczynski, 2023[12] Cluster randomized controlled trial **Behavioral health incorporation** (intervention) vs. **Clinician support** (comparator) Risk of bias: Low (continued)	Comparator vs. intervention: adj OR=6.53 (1.79 to 23.90), p=0.005 Intervention vs. comparator: adj OR=0.15 (0.04 to 0.56)[a] **Fidelity** Received feedback only (although feedback and brief intervention is recommended), N (%) Intervention: 9 (10.8%) Comparator: 8 (10.4%) Patient declined brief intervention Intervention: 21/86 Comparator: 3/79				
Sterling, 2015[13] Cluster randomized controlled trial **Behavioral health incorporation** (intervention) vs. **Clinician support** (comparator) or **No strategy** (comparator) Risk of bias: Some concerns	**Reach** Total number of assessments, N (%) Intervention: 163 (24.3%) Comparator: 149 (25.5%) Intervention vs. Comparator: p= 0.44 Intervention vs. Comparator: adj OR=0.93 (95% CI: 0.72 to 1.21), p=0.60	**Address a Positive Screen** Provided brief interventions, N (%) Intervention: 171 (25.5%) Comparator (N=579): 96 (16.4%) UC (N=611): 11 (1.8%) Likelihood of receiving brief intervention, adj OR (95% CI) Intervention vs. Comparator: 1.74 (1.31 to 2.31), p < 0.001 Comparator vs. UC: 10.37 (5.45 to 19.74), p<0.001	**Mental Health** Endorsed mental health symptoms, N (%) Intervention: 244 (13.1) Comparator: 274 (17.6) UC: 263 (14.9) Prevalence of depression symptoms, N (%) Intervention: 220 (11 .9) Comparator: 248 (15.9) UC: 243 (13.7) Prevalence of substance use symptoms Intervention vs. Comparator vs. UC:	NR	Among pediatricians with patients eligible for assessments, brief interventions, and referrals (n=14), pediatricians who attended at least 2 trainings (7 of 14 pediatricians) vs. pediatricians who did not attend at least 2 trainings: Conducted more assessments: p<0.001 Provided more brief interventions: p<0.001

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
		Intervention vs UC: 18.09 (9.69 to 33.77), p<0.001 Referrals to specialty treatment (substance use only, mental health only, or substance use and mental health) Intervention vs. Comparator: favors Comparator, p<0.001 Comparator vs. UC: favors Comparator, p<0.001 Likelihood of receiving referral, adj OR (95% CI) Intervention vs. Comparator: 0.58 (0.43 to 0.78), p<0.001 Comparator vs. UC: 1.11 (0.83 to 1.49), p=0.48 Intervention vs. UC: 0.65 (0.48 to 0.89), p=0.006	NS Screening triggered assessment, N Intervention: 16 Comparator: 14 UC: 16 Patients eligible for assessments, brief interventions, and referrals, N Intervention: 671 Comparator: 584 UC: 616		
Knight, 2019[14] Gibson, 2021[15] Randomized controlled trial **Support clinicians** (intervention) vs.	NR	**Address a Positive Screen (other than through initiation of treatment)** *Intervention effect cohort (i.e., high-risk patients)*	**Mental Health** *Intervention effect cohort (i.e., high-risk patients)* (N=211; Intervention: 148; Comparator: 63)[b] Time to first post-visit use of alcohol,	**Self-efficacy** Providers confidence in discussing substance use with patients increased at least slightly Intervention vs. Comparator: 81.7%	NR

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Technology without reminders (comparator) Risk of bias: Some concerns		Youth reported receiving advise about cannabis use, adj RR Intervention vs. Comparator: 1.36 (95% CI, 1.09 to 1.69) Youth reported receiving advise about avoiding alcohol use, adj RR Intervention vs. US: 1.21 (95% CI, 0.95 to 1.52) Youth reported receiving advise about not riding with an impaired driver, adj RR (95% CI) Intervention vs. Comparator: 1.31 (1.09 to 1.57) Youth reported receiving advice about not driving while impaired, adj RR (95% CI) Intervention vs. Comparator: 1.24 (1.03 to 1.50) Youth reported receiving information about the health risks of alcohol use, adj RR (95% CI)	median days (IQR) Intervention: 97 (51 to 222) Comparator: 44 (21 to 143) Intervention vs. Comparator: adj HR (95% CI) = 0.69 (0.47 to 1.02) Time to first post-visit heavy episodic drinking, median days (IQR) Intervention: 366 (124 to 366) Comparator: 213 (51 to 366) Intervention vs Comparator: adj HR (95% CI) = 0.66 (0.40 to 1.10) Time to first post-visit cannabis use, median days (IQR) Intervention: 101 (33 to 226) Comparator: 83 (27 to 152) Intervention vs. Comparator: adj HR (95% CI) = 0.62 (0.41 to 0.94) Met criteria for high risk of substance use, N (%) 59 (28.1) *Prevention effect*	vs. 80% Providers confidence in discussing substance use with patients increased greatly or moderately Community practice PCPs vs. Hospital-based PCPs: 60.0% vs. 25.0%, p = 0.013	

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Technology without reminders (comparator) Risk of bias: Some concerns (continued)		Intervention vs. Comparator: 1.22 (1.04 to 1.44) Youth reported receiving information about the health risks of cannabis use, adj RR (95% CI) Intervention vs. Comparator: 1.34 (1.09 to 1.65) Youth reported receiving the Contract for Life, N (%) Intervention: 42/55 (76.4) Comparator: 141/178 (79.2) Youth reported receiving advise about alcohol use Intervention vs. Comparator: NS Youth reported being asked to return for a followup visit, N (%)[a] Intervention: 27/59[b] (45.8) Comparator: 6/23 (26.1) Intervention vs. Comparator: NS	*cohort (i.e., low-risk patients)* (N=658; Intervention: 478, Comparator: 180) Time to first post-visit alcohol use, median days (IQR) Intervention: 366 (338 to 366) Comparator: 366 (334 to 366) Intervention vs Comparator: adj HR (95% CI) = 0.87 (0.57 to 1.31) Time to first post-visit cannabis use, median days (IQR) Intervention: 366 (366 to 366) Comparator: 366 (366 to 366) Intervention vs. Comparator: adj HR (95% CI) = 0.76 (0.44 to 1.32) **Satisfaction: Patient acceptability** *Intervention effect cohort* Rating of the advise received: Intervention vs. Comparator: no difference Satisfaction with visit		

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Technology without reminders (comparator) Risk of bias: Some concerns (continued)		*Prevention effect cohort (i.e., low-risk patients)* Youth reported receiving advice about avoiding alcohol use, adj RR Intervention vs. Comparator: 1.30 (95% CI, 1.17 to 1.43)	Intervention vs. Comparator: no difference *Prevention effect cohort* Rating of information received as excellent or good: Intervention vs. Comparator: favors Intervention Overall satisfaction Intervention vs. Comparator: no difference		

[a] value calculated by review authors.
[b] Among 59 patients in the cSBI group with risk levels.
adj = adjusted; BHCP = behavioral health care provider; CI = confidence interval; CRAFFT = car, relax, alone, family or friends, trouble; cSBI = computerized screening and brief intervention; HR = hazard ratio; IQR = interquartile range; N/A = not applicable; NS = not significant; OR = odds ratio; RR = relative risk; SBIRT = screening, brief intervention, referral to treatment; UC = usual care; vs. = versus.

Table E-4. Evidence from studies on general behavioral health assessments

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Thompson, 2016[16] Nonrandomized controlled trial **Technology** (intervention) vs. **No implementation strategy** (comparator) Risk of bias: High	**Reach** Adolescents in the intervention group reported significantly higher rates of screening and counseling for depression, mental health, emotions and relationships, as reflected in Young Adult Health Care Survey (YAHCS) Emotions and Relationships domain scores below: YAHCS Risky Behaviors domain score, mean (SE) (adjusted for gender, race/ethnicity, and age) Intervention: 0.36 (0.06) Comparator: 0.05 (0.11) YAHCS Emotions and relationships domain score, mean (SE) (adjusted for gender, race/ethnicity, and age) Intervention: 0.42 (0.05) Comparator: 0.08 (0.09) Difference between groups: p<0.01 Each domain score could range from 0 to 1, with 1 being the highest possible. The higher the	NR	**Satisfaction** Adolescents in the intervention group reported significantly higher rates of receiving care that was private and confidential than those in the comparator group. Importantly, these responses were not significantly different by gender, race/ethnicity, or age. YAHCS Private and confidential quality domain score, mean (SE) (adjusted for gender, race/ethnicity, and age) Intervention: 0.85 (0.04) Comparator: 0.57 (0.03) Difference between groups: p<0.0001 Gender differences were observed across both groups for one domain; females reported higher levels of helpfulness of screening and counseling compared to males: Females mean 0.84, SE 0.05; Males mean 0.61, SE 0.05 Difference between groups: p<0.01	NR	NR

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Thompson, 2016[16] Nonrandomized controlled trial **Technology** (intervention) vs. **No implementation strategy** (comparator) Risk of bias: High (continued)	number, the higher report of screening.				
Walter, 2021[17] Nonrandomized controlled trial (stepped-wedge trial) **Behavioral health incorporation with learning collaborative** (intervention) vs. **No comparator** Risk of bias: High	**Penetration** BH screening at well visits by program phase (see Figure 3): Across the combined BHIP phases, universal BH screening increased from 55.6% in the pre-implementation period to 73.9% in the continuation period. Adjusted odds ratio (95% CI): 1.25 (1.21 to 1.29); P<.001. **Adoption** Incorporation of BH In the pre-implementation phase, only 2 practices had incorporated a BHC (3%). By third quarter 2019, 37 BHCs had been incorporated into	**Address a Positive Screen (other than through initiation of treatment)** PCP BH visits across the combined BHIP phases (see Figures 5 and S) (N visits per 1,000 patient-years) Pre-implementation period: 107 Continuation period: 177 Adjusted rate ratio (95% CI): 1.2 (1.1 to 1.3); p<0.001 adjusted for secular trends **Initiation of Treatment** Psychotherapy visits across the combined BHIP phases (see Figure 4) (N visits per 1,000 patient-years) Pre-implementation period: 15 Continuation period: 176 Adjusted rate ratio (95% CI): 6.7 (5.8 to 7.7); p<0.001	**Mental Health** Leading diagnoses among 9,290 unique patients with psychotherapy visits N[a] (%) Stress-related: 3,029 (32.6%) Anxiety: 2,499 (26.9%) Depression: 660 (7.1%) ADHD: 622 (6.7%) Co-occurring anxiety and depression: 632 (6.8%)	Provider types by implementation phase, mean Phase 1 (start date: July 2013) Physicians: 6.9 NPs: 3.5 PAs: 0 Phase 2 (start date: September 2014) Physicians: 3.1 NPs and/or PAs: 2.0 Phase 3 (start date: June 2015) Physicians: 3.4 NPs: 1.0 PAs: 0 Phase 4 (start date: June 2016) Physicians: 4.5 NPs: 1.4 PAs: 0 Phase 5 (start date: June 2017)	NR

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Walter, 2021[17] Nonrandomized controlled trial (stepped-wedge trial) **Behavioral health incorporation with learning collaborative** (intervention) vs. **No comparator** Risk of bias: High (continued)	the 59 practices (63%). Incorporation of BHCs among larger vs. smaller practices Larger practices (≥3 PCPs): 77% Smaller practices (1 to 2 PCPs): 13% Between-group p<0.001	adjusted for secular trends Guideline-congruent ADHD prescription rates per 1,000 patient-years (see Figure 6) Pre-implementation period: 254 Continuation period: 362 Adjusted rate ratio (95% CI): 1.01 (0.96 to 1.07); p=0.60) Guideline-congruent selective SSRI prescription rates per 1,000 patient-years (see Figure 6) Pre-implementation period: 57 Continuation period: 190 Adjusted rate ratio (95% CI): 1.3 (1.2 to 1.4); p<0.001 **Efficiency** Data at pre-implementation and continuation periods were not reported, but in that period of time, ED BH visits did not significantly change (see Figure 7). Adjusted rate ratio (95% CI): 0.9 (0.8 to 1.1); p=0.46		Physicians: 3.7 NPs: 2.7 PAs: 0 Practice patient panel size, mean Phase 1 (start date: July 2013): 7,765 Phase 2 (start date: September 2014): 4,037 Phase 3 (start date: June 2015): 3,195 Phase 4 (start date: June 2016): 4,726 Phase 5 (start date: June 2017): 5,012 Patients per PCP, mean Phase 1 (start date: July 2013): 747 Phase 2 (start date: September 2014): 792 Phase 3 (start date: June 2015): 726 Phase 4 (start date: June 2016): 801 Phase 5 (start date: June 2017): 783 Engagement in implementation strategy over observation period, n (%) Practice participation in ≥1 BHLC session: 59 (100%) PCP participation in ≥1 BHLC session: 125 (35%) Physicians earning CME credits by	

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Walter, 2021[17] Nonrandomized controlled trial (stepped-wedge trial) **Behavioral health incorporation with learning collaborative** (intervention) vs. **No comparator** Risk of bias: High (continued)				completing attendance, quality project, and survey participation requirements: 97 (27%) Practice use of BHIP and/or MCPAP consultation component: 42 (71%) PCP use of BHIP and/or MCPAP consultation component: 155 (44%) Feasibility (see Table 5) Phase 1 practices surveyed that achieved all incorporation readiness domains (leadership, resources, administrative mechanisms, screening, clinical management, family centeredness, care coordination, and quality improvement): 12 (100%) Phase 1-5 practices that participated in BHIP program components (education, consultation, and integrated practice transformation): 59 (100%) Phase 1-5 PCPs that participated in the didactic learning community sessions: 125 (35%) Phase 1-5 PCPs that used child psychiatry consultation: 155 (44%) Phase 1-5 practices that	

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Walter, 2021[17] Nonrandomized controlled trial (stepped-wedge trial) **Behavioral health incorporation with learning collaborative** (intervention) vs. **No comparator** Risk of bias: High (continued)				hired incorporated BHCs: 37 (63%) Provider knowledge/self-efficacy (see Table 5) Phase 1-3 PCPs surveyed who reported BHIP participation had achieved the following: increased their knowledge about symptom rating scales, guided self-management, psychotropic medications, and level-of-care decisions; imparted greater confidence in their ability to manage BH problems; improved the quality of their BH care: 66 (>90%)	
Richardson, 2019[18] Randomized controlled trial **Support clinicians** (intervention) vs. **Educational materials** (comparator) Risk of bias: Some concerns	NR	**Address a Positive Screen (other than through initiation of treatment)**: Received counseling for reported moderate- and high-risk behaviors, aRR (95% CI) Intervention vs. Comparator: 1.32 (1.07 to 1.63) Received counseling for reported high-risk behavior, N (%) Intervention group: 40/105 (38.1) Comparator group: 21/87	**Mental Health** Moderate risk behaviors reported, n Intervention: 314 Comparator: 319 High risk behaviors reported, n Intervention group: 105 Comparator: 87 Risk score at baseline, mean (SD) Intervention: 3.71 (2.79) Comparator: 3.39 (2.27) Intervention vs. Comparator: P=0.48	NR	Change in number of high-risk behaviors, aRR (95% CI) Intervention vs. Comparator: 0.61 (0.43 to 0.88) Change in the number of moderate-risk behaviors, aRR (95% CI) Intervention vs. Comparator:

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Richardson, 2019[18] Randomized controlled trial **Support clinicians** (intervention) vs. **Educational materials** (comparator) Risk of bias: Some concerns (continued)		(24.1) aRR (95%) Intervention vs. Comparator: 1.61 (0.95 to 2.73) Received counseling for moderate-risk behavior, N (%) Intervention group: 160/314 (51.0) Comparator group: 130/319 (40.8) aRR (95%) Intervention vs. Comparator: 1.28 (1.02 to 1.62) Received counseling for no risk behaviors, aRR (95%) Intervention vs. Comparator: 1.02 (0.77 to 1.36)	Risk score at 3 months, mean (SD) Intervention: 2.89 (2.41) Comparator: 3.25 (2.37) Intervention vs. Comparator: P=0.08 On mixed-effects linear regression analysis, youths in the intervention group had a significantly greater decrease in risk behavior scores at 3 months compared with those in the Comparator group (β=-0.48; 95% CI, -0.89 to -0.02; P=0.02). When examining for effect modification by moderate-risk or high-risk behavior status, the intervention had a significant effect on reduction in the number of high-risk behaviors in the intervention group vs the Comparator group (aRR, 0.61; 95% CI, 0.43 to 0.88), but not on the number of moderate-risk behaviors (aRR, 0.91; 95% CI, 0.78 to 1.07).		0.91 (0.78 to 1.07)

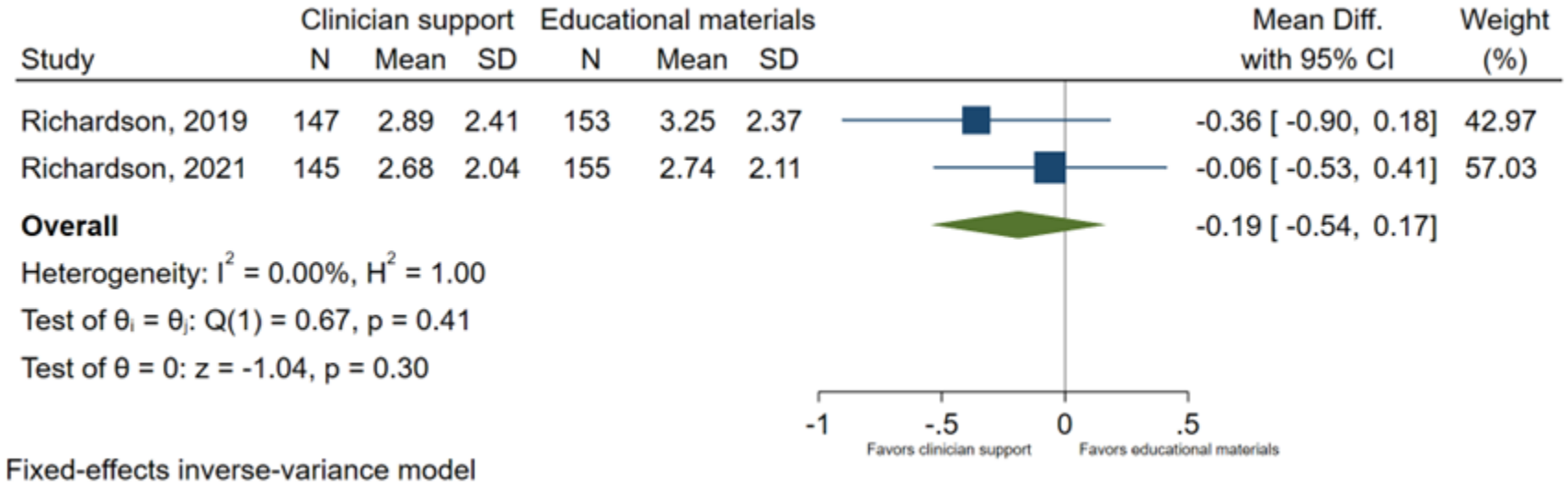
Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Richardson 2021[19] Nonrandomized controlled trial **Support clinicians** (intervention) vs. **Educational materials** (comparator) Risk of bias: some concerns	NR	**Address a Positive Screen (other than through initiation of treatment)** Received clinician counseling for moderate and high-risk behaviors, aRR (95% CI) Intervention vs. control: 1.36 (1.04 to 1.78) Received clinician counseling for no/low risk behaviors, aRR (95% CI) Intervention vs. control: 1.12 (0.85 to 1.48) Received clinician counseling for moderate risk behaviors, aRR (95% CI) Intervention vs. control: 1.40 (1.09 to 1.80) Received clinician counseling for high risk behaviors, aRR (95% CI) Intervention vs. control: 1.70 (1.06 to 2.74)	**Mental Health** Depression at 6 months, n (%) Intervention (n=145): 18 (12.4%) Control (n=139): 14 (10.1% Marijuana use at 6 months, n (%) Intervention (n=145): 5 (3.4%) Control (n=139): 3 (2.2%) Alcohol use at 6 months, n (%) Intervention (n=145): 4 (2.8%) Control (n=139): 4 (2.9%) Tobacco use at 6 months, n (%) Intervention: 3 (2.1%) Control: 1 (0.7%) No significant differences in the reduction of risk behaviors were observed between the adolescents of the intervention and control groups, P=NR Risk behavior score at 3 months, mean (SD) Intervention: 2.68 (2.04) Control: 2.74 (2.11) Intervention vs. control: P = .81 Score difference: 0.15, β=-0.15 (95% CI, -0.25 to 0.55), P=0.47 Risk behavior score at 6 months, mean (SD) Intervention: 2.58 (1.87) Control: 2.76 (2.05) Intervention vs. control: P = .45 Score difference: 0.12, β=-0.12 (95% CI, -0.29 to 0.52), P=0.57	NR	NR

Study	Implementation Outcomes	Service Outcomes	Patient Outcomes	Other Factors	Subgroups, Effect Modifiers
Richardson 2021[19] (continued)			Difference in reduction of risk behaviors between groups at 3 months β=-0.33 (95% CI, -0.62 to -0.05), P=0.02 Difference in reduction of risk behaviors between groups at 6 months β=-0.29 (95% CI, -0.57 to -0.01), P=0.05 No significant differences in risk scores between the intervention and control groups at 3 or 6 months, P=NR **Patient Satisfaction** Satisfaction with the well-care visit process[a] Intervention vs. control: no significant difference		

[a] Controlling for age, gender, and clinic as a random effect

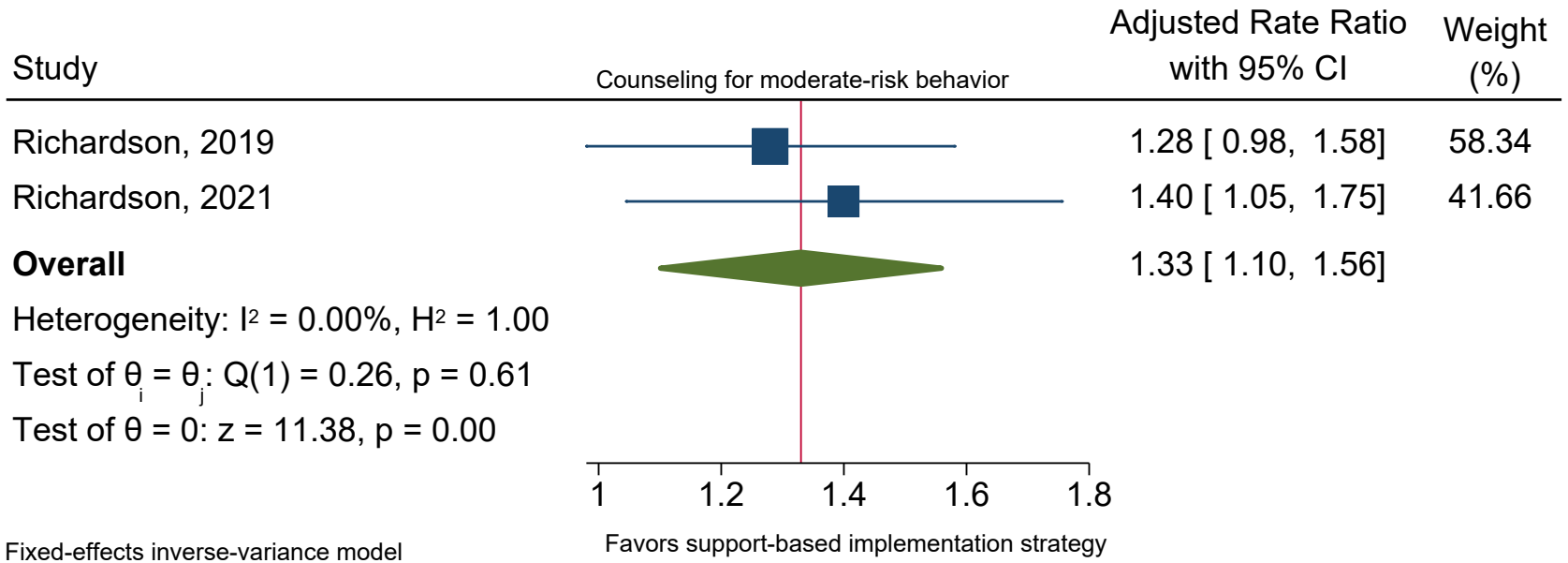
ADHD = attention deficit hyperactivity Disorder; BH = behavioral health; BHC = behavioral health clinician; BHIP = behavioral health incorporation program; CI = confidence interval; ED = emergency department; HRA = health risk assessment; MCPAP = Massachusetts Child Psychiatry Access Program; NR = not reported; NP = nurse practitioner; PA = physician assistant; PCP = primary care provider; aRR = adjusted risk ratio; SD = standard deviation; SE = standard error; vs. = versus.

Figure E-1. Meta-analysis comparing the impact of a clinician support strategy with educational materials on risk behavior score at 3 months



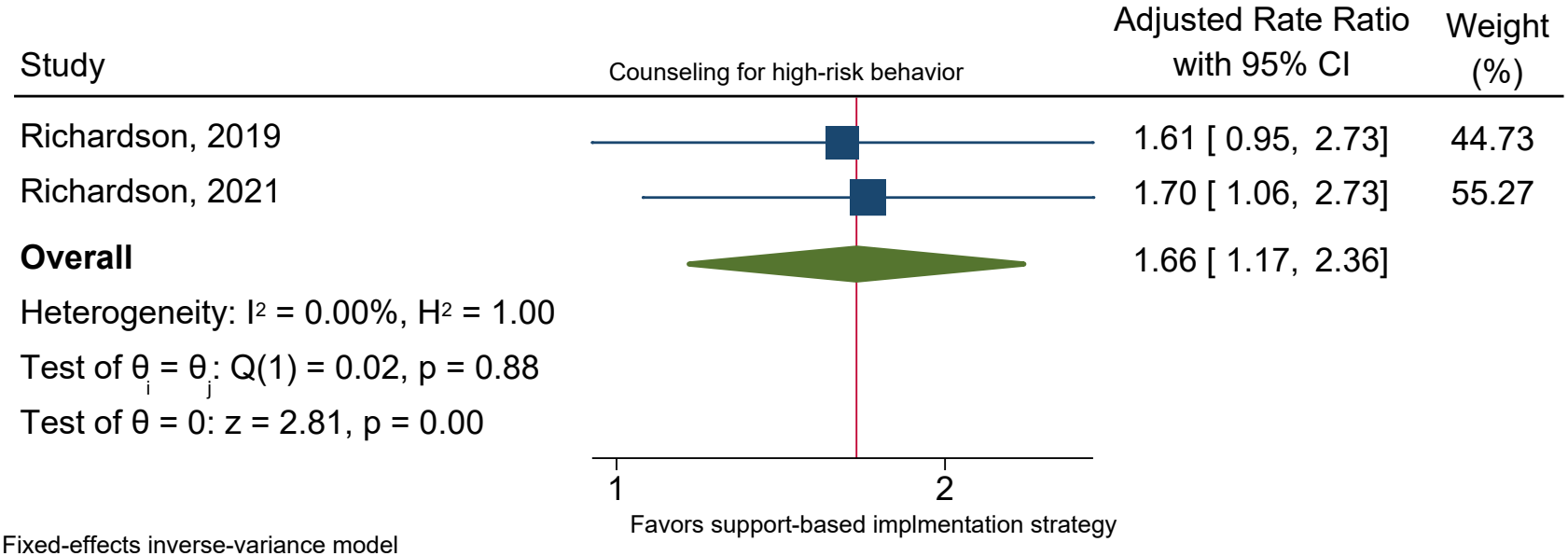
CI = confidence interval; diff = difference; SD = standard deviation.

Figure E-2. Meta-analysis comparing the impact of a clinician support strategy with educational materials on receipt of clinician counseling for moderate risk behaviors



CI = confidence interval

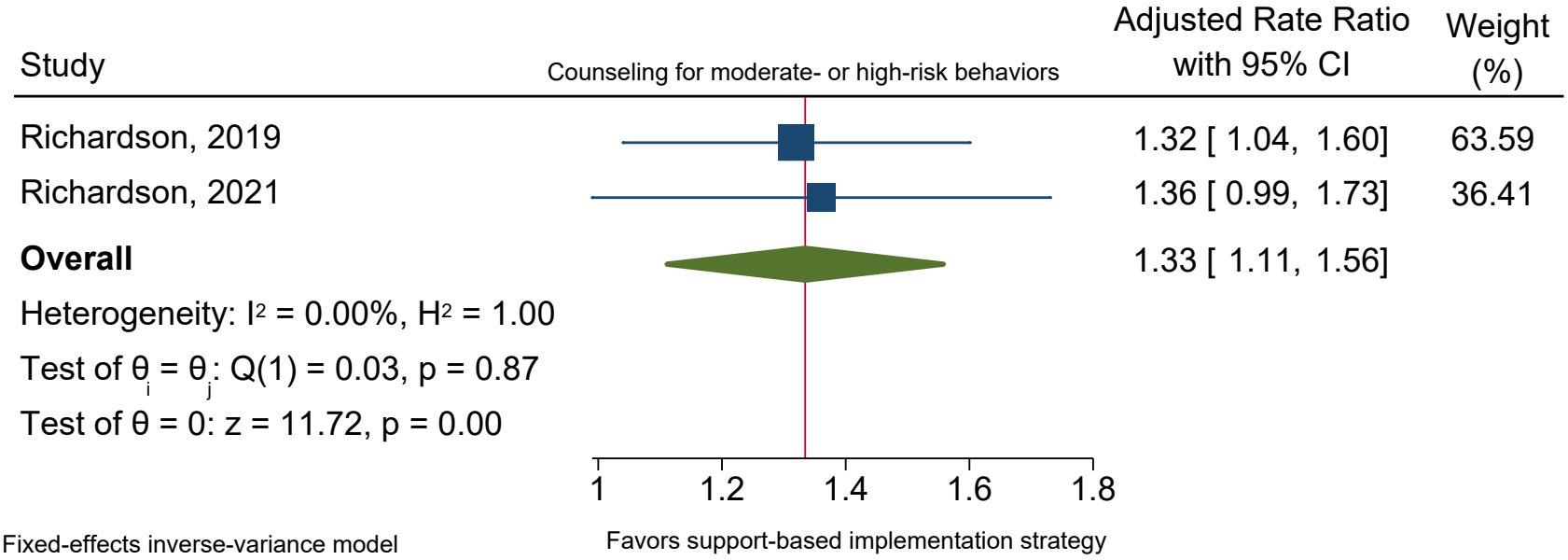
Figure E-3. Meta-analysis comparing the impact of a clinician support strategy with educational materials on receipt of clinician counseling for high risk behaviors



Fixed-effects inverse-variance model

CI = confidence interval

Figure E-4. Meta-analysis comparing the impact of a clinician support strategy with educational materials on receipt of clinician counseling for moderate or high risk behaviors



CI = confidence interval

Appendix F. Excluded Studies

1. Brabyn S, Araya R, Barkham M, et al. The second Randomised Evaluation of the Effectiveness, Cost-Effectiveness and Acceptability of Computerised Therapy (REEACT-2) trial: does the provision of telephone support enhance the effectiveness of computer-delivered cognitive behaviour therapy? A randomised controlled trial. Health Technol Assess. 2016 Nov;20(89):1-64. doi: 10.3310/hta20890. PMID: 27922448. Exclusion Code: X1: ineligible population.
2. Newbury-Birch D, Scott S, O'Donnell A, et al. Public health research. A pilot feasibility cluster randomised controlled trial of screening and brief alcohol intervention to prevent hazardous drinking in young people aged 14–15 years in a high school setting (SIPS JR-HIGH). Southampton (UK): NIHR Journals Library; 2014. Exclusion Code: X1: ineligible population.
3. Titov N, Dear BF, Johnston L, et al. Improving adherence and clinical outcomes in self-guided internet treatment for anxiety and depression: randomised controlled trial. PLoS One. 2013;8(7):e62873. doi: 10.1371/journal.pone.0062873. PMID: 23843932. Exclusion Code: X1: ineligible population.
4. Eisen JC, Marko-Holguin M, Fogel J, et al. Pilot study of implementation of an internet-based depression prevention intervention (catch-it) for adolescents in 12 us primary care practices: clinical and management/organizational behavioral perspectives. Prim Care Companion CNS Disord. 2013;15(6). doi: 10.4088/PCC.10m01065. PMID: 24800110. Exclusion Code: X1: ineligible population.
5. Wells KB, Tang L, Carlson GA, et al. Treatment of youth depression in primary care under usual practice conditions: observational findings from youth partners in care. J Child Adolesc Psychopharmacol. 2012 Feb;22(1):80-90. doi: 10.1089/cap.2011.0074. PMID: 22251025. Exclusion Code: X1: ineligible population.
6. Manfredi C, Cho YI, Warnecke R, et al. Dissemination strategies to improve implementation of the PHS smoking cessation guideline in MCH public health clinics: experimental evaluation results and contextual factors. Health Educ Res. 2011 Apr;26(2):348-60. doi: 10.1093/her/cyr010. PMID: 21398375. Exclusion Code: X1: ineligible population.
7. Torrey WC, Cepeda M, Castro S, et al. Implementing technology-supported care for depression and alcohol use disorder in primary care in Colombia: preliminary findings. Psychiatr Serv. 2020 Jul 1;71(7):678-83. doi: 10.1176/appi.ps.201900457. PMID: 32151216. Exclusion Code: X1: ineligible population.
8. Lundin A, Danielsson AK, Hallgren M, et al. Effect of screening and advising on alcohol habits in Sweden: a repeated population survey following nationwide implementation of screening and brief intervention. Alcohol Alcohol. 2017 Mar 9;52(2):190-6. doi: 10.1093/alcalc/agw086. PMID: 28182210. Exclusion Code: X1: ineligible population.
9. Van Voorhees BW. A randomized controlled trial of a primary care internet based depression prevention intervention for adolescents (CATCH-IT): 12-month outcomes. Journal of investigative medicine. 2010;58(4):654. doi: 10.231/JIM.0b013e3181d85541. PMID: CN-01760682. Exclusion Code: X1: ineligible population.
10. Radovic A, Li Y, Landsittel D, et al. A social media website (supporting our valued adolescents) to support treatment uptake for adolescents with depression or anxiety: pilot randomized controlled trial. JMIR mental health. 2022;9(10):e35313. doi: 10.2196/35313. PMID: CN-02474676. Exclusion Code: X1: ineligible population.
11. Nagamitsu S, Kanie A, Sakashita K, et al. Adolescent Health Promotion Interventions Using Well-Care Visits and a Smartphone Cognitive Behavioral Therapy App: Randomized Controlled Trial. JMIR Mhealth Uhealth. 2022 May 23;10(5):e34154. doi: 10.2196/34154. PMID: 35604760. Exclusion Code: X2: ineligible clinical intervention.
12. Young E, Green L, Goldfarb R, et al. Caring for children with mental health or developmental and behavioural disorders: Perspectives of family health teams on roles and barriers to care. Can Fam Physician. 2020 Oct;66(10):750-7. PMID: 33077456. Exclusion Code: X2: ineligible clinical intervention.

13. Terry JD, Weist MD, Strait GG, et al. Motivational Interviewing to Promote the Effectiveness of Selective Prevention: an Integrated School-Based Approach. Prev Sci. 2021 Aug;22(6):799-810. doi: 10.1007/s11121-020-01124-4. PMID: 32451788. Exclusion Code: X2: ineligible clinical intervention.

14. Ristkari T, Kurki M, Suominen A, et al. Web-Based Parent Training Intervention With Telephone Coaching for Disruptive Behavior in 4-Year-Old Children in Real-World Practice: Implementation Study. J Med Internet Res. 2019 Apr 11;21(4):e11446. doi: 10.2196/11446. PMID: 30973337. Exclusion Code: X2: ineligible clinical intervention.

15. St George SM, Huang S, Vidot DC, et al. Factors associated with the implementation of the Familias Unidas intervention in a type 3 translational trial. Transl Behav Med. 2016 Mar;6(1):105-14. doi: 10.1007/s13142-015-0344-x. PMID: 27012258. Exclusion Code: X2: ineligible clinical intervention.

16. Robling M, Bekkers MJ, Bell K, et al. Effectiveness of a nurse-led intensive home-visitation programme for first-time teenage mothers (Building Blocks): a pragmatic randomised controlled trial. Lancet. 2016 Jan 9;387(10014):146-55. doi: 10.1016/s0140-6736(15)00392-x. PMID: 26474809. Exclusion Code: X2: ineligible clinical intervention.

17. Sanci L, Grabsch B, Chondros P, et al. The prevention access and risk taking in young people (PARTY) project protocol: a cluster randomised controlled trial of health risk screening and motivational interviewing for young people presenting to general practice. BMC Public Health. 2012 Jun 6;12:400. doi: 10.1186/1471-2458-12-400. PMID: 22672481. Exclusion Code: X2: ineligible clinical intervention.

18. Pass L, Lejuez CW, Reynolds S. Brief Behavioural Activation (Brief BA) for Adolescent Depression: A Pilot Study. Behav Cogn Psychother. 2018 Mar;46(2):182-94. doi: 10.1017/s1352465817000443. PMID: 28756787. Exclusion Code: X2: ineligible clinical intervention.

19. Velasco V, Griffin KW, Botvin GJ. Preventing Adolescent Substance Use Through an Evidence-Based Program: Effects of the Italian Adaptation of Life Skills Training. Prev Sci. 2017 May;18(4):394-405. doi: 10.1007/s11121-017-0776-2. PMID: 28353126. Exclusion Code: X2: ineligible clinical intervention.

20. Giannotta F, Özdemir M, Stattin H. The implementation integrity of parenting programs: Which aspects are most important? Child & Youth Care Forum. 2019;48(6):917-33. doi: 10.1007/s10566-019-09514-8. PMID: 2019-43675-001. Exclusion Code: X2: ineligible clinical intervention.

21. Friedman S, Calderon B, Gonzalez A, et al. Pediatric Practice Redesign with Group Well Child Care Visits: A Multi-Site Study. Maternal & Child Health Journal. 2021;25(8):1265-73. doi: 10.1007/s10995-021-03146-y. PMID: 151401920. Language: English. Entry Date: 20210719. Revision Date: 20220801. Publication Type: Journal Article. Exclusion Code: X2: ineligible clinical intervention.

22. Stemmler M, Kötter C, Bühler A, et al. Prevention of familial transmission of depression through a family-oriented programme targeting parenting as well as the child's social competence. Journal of Children's Services. 2013;8(1):5-20. doi: 10.1108/17466661311309754. PMID: 86132679. Language: English. Entry Date: 20130319. Revision Date: 20200507. Publication Type: Journal Article. Exclusion Code: X2: ineligible clinical intervention.

23. Lawrence CN, Rosanbalm KD, Dodge KA. Multiple Response System: Evaluation of Policy Change in North Carolina's Child Welfare System. Children & Youth Services Review. 2011;33(11):2355-65. doi: 10.1016/j.childyouth.2011.08.007. PMID: 104594326. Language: English. Entry Date: 20120106. Revision Date: 20200708. Publication Type: Journal Article. Exclusion Code: X2: ineligible clinical intervention.

24. Pullmann MD, Dorsey S, Duong MT, et al. Expect the Unexpected: A Qualitative Study of the Ripple Effects of Children's Mental Health Services Implementation Efforts. Implement Res Pract. 2022;3. doi: 10.1177/26334895221120797. PMID: 36504561. Exclusion Code: X2: ineligible clinical intervention.

25. Haug S, Boumparis N, Wenger A, et al. Efficacy of a Mobile App-Based Coaching Program for Addiction Prevention among Apprentices: A Cluster-Randomized Controlled Trial. Int J Environ Res Public Health. 2022 Nov 25;19(23). doi: 10.3390/ijerph192315730. PMID: 36497804. Exclusion Code: X3: no implementation strategy.

26. Galán CA, Shaw DS, O'Rourke F, et al. Substance Use Screening and Prevention for Adolescents in Pediatric Primary Care: A Randomized Clinical Trial using the Family Check-Up. Res Child Adolesc Psychopathol. 2023 Feb;51(2):151-63. doi: 10.1007/s10802-022-00978-2. PMID: 36208361. Exclusion Code: X3: no implementation strategy.

27. Pfarrwaller E, Meynard A, Reyre A, et al. Excessive substance use screening to encourage behaviour change among young people in primary care: Pilot study in preparation for a randomized trial. Addict Behav. 2019 Nov;98:106049. doi: 10.1016/j.addbeh.2019.106049. PMID: 31330465. Exclusion Code: X3: no implementation strategy.

28. Walton MA, Resko S, Barry KL, et al. A randomized controlled trial testing the efficacy of a brief cannabis universal prevention program among adolescents in primary care. Addiction. 2014 May;109(5):786-97. doi: 10.1111/add.12469. PMID: 24372937. Exclusion Code: X3: no implementation strategy.

29. Kiewik M, VanDerNagel JEL, Engels RCME, et al. The efficacy of an e-learning prevention program for substance use among adolescents with intellectual disabilities: A pilot study. Research in Developmental Disabilities. 2017;63:160-6. doi: 10.1016/j.ridd.2016.09.021. PMID: 2016-54495-001. Exclusion Code: X3: no implementation strategy.

30. Pina AA, Gonzales NA, Mazza GL, et al. Streamlined Prevention and Early Intervention for Pediatric Anxiety Disorders: a Randomized Controlled Trial. Prevention science. 2020;21(4):487-97. doi: 10.1007/s11121-019-01066-6. PMID: CN-02074805. Exclusion Code: X3: no implementation strategy.

31. Berkel C, Knox DC, Flemotomos N, et al. A machine learning approach to improve implementation monitoring of family-based preventive interventions in primary care. Implement Res Pract. 2023 Jan-Dec;4:26334895231187906. doi: 10.1177/26334895231187906. PMID: 37790171. Exclusion Code: X4: ineligible or no comparator.

32. Levy S, Wisk LE, Minegishi M, et al. Association of Screening and Brief Intervention With Substance Use in Massachusetts Middle and High Schools. JAMA Netw Open. 2022 Aug 1;5(8):e2226886. doi: 10.1001/jamanetworkopen.2022.26886. PMID: 35972741. Exclusion Code: X4: ineligible or no comparator.

33. Bossenbroek R, Poppelaars M, Creemers DHM, et al. Trajectories of Symptom Change in School-Based Prevention Programs for Adolescent Girls with Subclinical Depression. J Youth Adolesc. 2022 Apr;51(4):659-72. doi: 10.1007/s10964-022-01578-5. PMID: 35113294. Exclusion Code: X4: ineligible or no comparator.

34. Roche JS, Philyaw-Kotov ML, Sigel E, et al. Implementation of a youth violence prevention programme in primary care. Inj Prev. 2022 Jun;28(3):231-7. doi: 10.1136/injuryprev-2021-044293. PMID: 34716179. Exclusion Code: X4: ineligible or no comparator.

35. Deluca P, Coulton S, Alam MF, et al. Programme Grants for Applied Research. Screening and brief interventions for adolescent alcohol use disorders presenting through emergency departments: a research programme including two RCTs. Southampton (UK): NIHR Journals Library; 2020. Exclusion Code: X4: ineligible or no comparator.

36. Corathers S, Mara CA, Chundi PK, et al. Depression Screening of Adolescents With Diabetes: 5-Years of Implementation and Outcomes. J Am Acad Child Adolesc Psychiatry. 2019 Jun;58(6):628-32. doi: 10.1016/j.jaac.2019.01.013. PMID: 30802493. Exclusion Code: X4: ineligible or no comparator.

37. Frehn JL, Li JN, Liu KR, et al. Implementation of a universal screening and follow-up care system for pediatric developmental and behavioral health in federally qualified health center sites. Fam Syst Health. 2023 May 25. doi: 10.1037/fsh0000803. PMID: 37227827. Exclusion Code: X4: ineligible or no comparator.

38. Alinsky RH, Percy K, Adger H, Jr., et al. Substance use screening, brief intervention, and referral to treatment in pediatric practice: a quality improvement project in the maryland adolescent and young adult health collaborative improvement and innovation network. Clin Pediatr (Phila). 2020 May;59(4-5):429-35. doi: 10.1177/0009922820902441. PMID: 31994409. Exclusion Code: X4: ineligible or no comparator.

39. Goodyear-Smith F, Corter A, Suh H. Electronic screening for lifestyle issues and mental health in youth: a community-based participatory research approach. BMC Med Inform Decis Mak. 2016 Nov 8;16(1):140. doi: 10.1186/s12911-016-0379-z. PMID: 27821128. Exclusion Code: X4: ineligible or no comparator.

40. Buchholz M, Burnett B, Margolis KL, et al. Early childhood behavioral health integration activities and HealthySteps: Sustaining practice, averting costs. Clinical Practice in Pediatric Psychology. 2018;6(2):140-51. doi: 10.1037/cpp0000239. PMID: 2018-26978-005. Exclusion Code: X4: ineligible or no comparator.

41. Whitaker K, Fortier A, Bruns EJ, et al. How do school mental health services vary across contexts? Lessons learned from two efforts to implement a research-based strategy. School Mental Health: A Multidisciplinary Research and Practice Journal. 2018;10(2):134-46. doi: 10.1007/s12310-017-9243-2. PMID: 2018-10108-001. Exclusion Code: X4: ineligible or no comparator.

42. Patterson BL, Gregg WM, Biggers C, et al. Improving delivery of EPSDT well-child care at acute visits in an academic pediatric practice. Pediatrics. 2012;130(4):e988-e95. doi: 10.1542/peds.2012-0355. PMID: 2013-17399-030. Exclusion Code: X4: ineligible or no comparator.

43. Pop R, Kinney R, Grannemann B, et al. VitalSign⁶: Screening, diagnosis, and treatment of depression for adolescents presenting to pediatric primary and specialty care settings. Journal of the American Academy of Child & Adolescent Psychiatry. 2019;58(6):632-5. doi: 10.1016/j.jaac.2019.01.019. PMID: 2019-40364-011. Exclusion Code: X4: ineligible or no comparator.

44. Wintersteen MB, Diamond GS. Youth suicide prevention in primary care: A model program and its impact on psychiatric emergency referrals. Clinical Practice in Pediatric Psychology. 2013;1(3):295-305. doi: 10.1037/cpp0000028. PMID: 2013-32235-009. Exclusion Code: X4: ineligible or no comparator.

45. NCT. Supportive Text Messages to Reduce Mood Symptoms and Problem Drinking- Randomised Controlled Pilot Trials. https://clinicaltrials.gov/show/NCT02327858. 2014. PMID: CN-02032645. Exclusion Code: X4: ineligible or no comparator.

46. NCT. Pilot Study of an Internet-based Program for Prevention and Early Intervention of Adolescent Depression. https://clinicaltrials.gov/show/NCT03047512. 2017. PMID: CN-01598313. Exclusion Code: X4: ineligible or no comparator.

47. NCT. The Canadian Underage Substance Use Prevention Trial. https://clinicaltrials.gov/show/NCT04198974. 2019. PMID: CN-02053187. Exclusion Code: X4: ineligible or no comparator.

48. NCT. Young People's Health Assessment as Treatment and Health Guide. https://clinicaltrials.gov/show/NCT03817255. 2019. PMID: CN-01918943. Exclusion Code: X4: ineligible or no comparator.

49. NCT. Mobile Phone Based Peer Support to Prevent Postpartum Depression Among Adolescent Mothers. https://clinicaltrials.gov/show/NCT02818075. 2016. PMID: CN-01559466. Exclusion Code: X4: ineligible or no comparator.

50. NCT. Alerta Cannabis: evaluation of Web-based Tailored Intervention. https://clinicaltrials.gov/show/NCT05849636. 2023. PMID: CN-02560008. Exclusion Code: X4: ineligible or no comparator.

51. Kolko DJ, Campo J, Kilbourne AM, et al. Collaborative Care Outcomes for Pediatric Behavioral Health Problems: A Cluster Randomized Trial. Pediatrics. 2014;133(4):e981-e92. doi: 10.1542/peds.2013-2516. Exclusion Code: X4: ineligible or no comparator.

52. Aalborg AE, Miller BA, Husson G, et al. Implementation of adolescent family-based substance use prevention programs in health care settings: Comparisons across conditions and programs. Health Educ J. 2012 Jan 1;71(1):53-61. doi: 10.1177/0017896910386209. PMID: 22984294. Exclusion Code: X6: ineligible timing.

53. Linnemayr S, Zutshi R, Shadel W, et al. Text Messaging Intervention for Young Smokers Experiencing Homelessness: Lessons Learned From a Randomized Controlled Trial. JMIR Mhealth Uhealth. 2021 Apr 1;9(4):e23989. doi: 10.2196/23989. PMID: 33792551. Exclusion Code: X7: ineligible setting.

54. Alderson H, Kaner E, Brown R, et al. Public Health Research. Behaviour change interventions to reduce risky substance use and improve mental health in children in care: the SOLID three-arm feasibility RCT. Southampton (UK): NIHR Journals Library; 2020. Exclusion Code: X7: ineligible setting.

55. García-Escalera J, Valiente RM, Sandín B, et al. The Unified Protocol for Transdiagnostic Treatment of Emotional Disorders in Adolescents (UP-A) Adapted as a School-Based Anxiety and Depression Prevention Program: An Initial Cluster Randomized Wait-List-Controlled Trial. Behav Ther. 2020 May;51(3):461-73. doi: 10.1016/j.beth.2019.08.003. PMID: 32402261. Exclusion Code: X7: ineligible setting.

56. Lyon AR, Cook CR, Duong MT, et al. The influence of a blended, theoretically-informed pre-implementation strategy on school-based clinician implementation of an evidence-based trauma intervention. Implement Sci. 2019 May 30;14(1):54. doi: 10.1186/s13012-019-0905-3. PMID: 31146788. Exclusion Code: X7: ineligible setting.

57. Sayal K, Taylor JA, Valentine A, et al. Effectiveness and cost-effectiveness of a brief school-based group programme for parents of children at risk of ADHD: a cluster randomised controlled trial. Child Care Health Dev. 2016 Jul;42(4):521-33. doi: 10.1111/cch.12349. PMID: 27272608. Exclusion Code: X7: ineligible setting.

58. Winther J, Carlsson A, Vance A. A pilot study of a school-based prevention and early intervention program to reduce oppositional defiant disorder/conduct disorder. Early Interv Psychiatry. 2014 May;8(2):181-9. doi: 10.1111/eip.12050. PMID: 23734628. Exclusion Code: X7: ineligible setting.

59. Leyenaar JK, Tolpadi A, Parast L, et al. Collaborative to Increase Lethal Means Counseling for Caregivers of Youth With Suicidality. Pediatrics. 2022 Dec 1;150(6). doi: 10.1542/peds.2021-055271. PMID: 36321386. Exclusion Code: X7: ineligible setting.

60. Hermens ML, Oud M, Sinnema H, et al. The multidisciplinary depression guideline for children and adolescents: an implementation study. Eur Child Adolesc Psychiatry. 2015 Oct;24(10):1207-18. doi: 10.1007/s00787-014-0670-4. PMID: 25589437. Exclusion Code: X7: ineligible setting.

61. Marsiglia FF, Kulis SS, Kiehne E, et al. Adolescent substance-use prevention and legalization of marijuana in Uruguay: A feasibility trial of the keepin' it REAL prevention program. Journal of Substance Use. 2018;23(5):457-65. doi: 10.1080/14659891.2017.1358308. PMID: 2018-35494-003. Exclusion Code: X7: ineligible setting.

62. Serravalle AN. Behavioral health consultation program to identify youth with at-risk behaviors within the state of Delaware: ProQuest Information & Learning; 2018. Exclusion Code: X7: ineligible setting.

63. Hower KI, Pförtner T-K, Pfaff H, et al. Child-oriented drug counseling in Germany: Evaluating the implementation of the program 'fitkids' and its association with readiness for change. Human Service Organizations: Management, Leadership & Governance. 2019;43(5):421-42. doi: 10.1080/23303131.2019.1661929. PMID: 2019-56979-001. Exclusion Code: X7: ineligible setting.

64. van Starrenburg MLA, Kuijpers RCMW, Kleinjan M, et al. Effectiveness of a cognitive behavioral therapy-based indicated prevention program for children with elevated anxiety levels: A randomized controlled trial. Prevention Science. 2017;18(1):31-9. doi: 10.1007/s11121-016-0725-5. PMID: 2016-54373-001. Exclusion Code: X7: ineligible setting.

65. Nkongho IJ. Evaluation of a Hong Kong school-based mental health program (Growing Up With Kely): ProQuest Information & Learning; 2017. Exclusion Code: X7: ineligible setting.

66. Battal J, Pearrow MM, Kaye AJ. Implementing a comprehensive behavioral health model for social, emotional, and behavioral development in an urban district: An applied study. Psychology in the Schools. 2020;57(9):1475-91. doi: 10.1002/pits.22420. PMID: 2020-51446-001. Exclusion Code: X7: ineligible setting.

67. McManus JQ. School nurses identifying at-risk adolescents for depression: ProQuest Information & Learning; 2021. Exclusion Code: X7: ineligible setting.

68. Newbury-Birch D, O'Neil S, O'Donnell A, et al. A pilot feasiblity C-RCT of screening and brief alcohol intervention in young people aged 14-15 in a high school setting: sips Jr-high. Alcoholism: clinical and experimental research. 2014;38:127A. PMID: CN-01042292. Exclusion Code: X7: ineligible setting.

69. Irshad S, Kiran T, Chaudhry N, et al. Feasibility and acceptability of culturally adapted school-based suicide prevention programme among adolescents in Pakistan. Journal of psychosomatic research. 2023;169. doi: 10.1016/j.jpsychores.2023.111271. PMID: CN-02572103. Exclusion Code: X7: ineligible setting.

70. Tahlil T, Woodman RJ, Coveney J, et al. Six-months follow-up of a cluster randomized trial of school-based smoking prevention education programs in Aceh, Indonesia. BMC public health. 2015;15:1088. doi: 10.1186/s12889-015-2428-4. PMID: CN-01169268. Exclusion Code: X7: ineligible setting.

71. Robling M, Bekkers M-J, Bell K, et al. Effectiveness of a nurse-led intensive homevisitation programme for first-time teenage mothers (Building Blocks): a pragmatic randomised controlled trial. MIDIRS Midwifery Digest. 2016;26(1):87-8. PMID: 127645666. Language: English. Entry Date: 20180201. Revision Date: 20180420. Publication Type: Journal Article. Exclusion Code: X7: ineligible setting.

72. Donohue P, Goodman-Scott E, Jennifer B-B. Using Universal Screening for Early Identification of Students at Risk: A Case Example from the Field. Professional School Counseling. 2015;19(1):1096-2409-19.1.133. doi: 10.5330/1096-2409-19.1.133. Exclusion Code: X7: ineligible setting.

73. Schleider JL, Dobias M, Fassler J, et al. Promoting Treatment Access Following Pediatric Primary Care Depression Screening: Randomized Trial of Web-Based, Single-Session Interventions for Parents and Youths. J Am Acad Child Adolesc Psychiatry. 2020 Jun;59(6):770-3. doi: 10.1016/j.jaac.2020.01.025. PMID: 32666919. Exclusion Code: X8: ineligible study design.

74. Thabrew H, D'Silva S, Darragh M, et al. Comparison of YouthCHAT, an Electronic Composite Psychosocial Screener, With a Clinician Interview Assessment for Young People: Randomized Controlled Trial. J Med Internet Res. 2019 Dec 3;21(12):e13911. doi: 10.2196/13911. PMID: 31793890. Exclusion Code: X8: ineligible study design.

75. Lattie EG, Ho J, Sargent E, et al. Teens Engaged in Collaborative Health: The Feasibility and Acceptability of an Online Skill-Building Intervention for Adolescents at Risk for Depression. Internet Interv. 2017 Jun;8:15-26. doi: 10.1016/j.invent.2017.02.003. PMID: 28584734. Exclusion Code: X8: ineligible study design.

76. Malik K, Shetty T, Mathur S, et al. Feasibility and Acceptability of a Remote Stepped Care Mental Health Programme for Adolescents during the COVID-19 Pandemic in India. Int J Environ Res Public Health. 2023 Jan 17;20(3). doi: 10.3390/ijerph20031722. PMID: 36767090. Exclusion Code: X8: ineligible study design.

77. Polaha J, Schetzina KE, Baker K, et al. Adoption and reach of behavioral health services for behavior problems in pediatric primary care. Fam Syst Health. 2018 Dec;36(4):507-12. doi: 10.1037/fsh0000380. PMID: 30589323. Exclusion Code: X8: ineligible study design.

78. Godoy L, Long M, Marschall D, et al. Behavioral Health Integration in Health Care Settings: Lessons Learned from a Pediatric Hospital Primary Care System. J Clin Psychol Med Settings. 2017 Dec;24(3-4):245-58. doi: 10.1007/s10880-017-9509-8. PMID: 28929269. Exclusion Code: X8: ineligible study design.

79. Wilson MP. Improving school policy on social and emotional development: Examining social and emotional development policy in early childhood programs: ProQuest Information & Learning; 2015. Exclusion Code: X8: ineligible study design.

80. Overgaard KR, Oerbeck B, Friis S, et al. Screening with an ADHD-specific rating scale in preschoolers: A cross-cultural comparison of the Early Childhood Inventory-4. Psychological Assessment. 2019;31(8):985-94. doi: 10.1037/pas0000722. PMID: 2019-18758-001. Exclusion Code: X8: ineligible study design.

81. NCT. An internet-based program for prevention and early intervention of adolescent depression. https://clinicaltrials.gov/show/NCT02780232. 2016. PMID: CN-01558472. Exclusion Code: X8: ineligible study design.

82. Ha YS, Choi YH. Effectiveness of the self-determination theory based a motivational interviewing YOU-TURN program for smoking cessation among adolescents. Journal of Korean Academy of Nursing. 2015;45(3):347-56. doi: 10.4040/jkan.2015.45.3.347. PMID: CN-01157946. Exclusion Code: X8: ineligible study design.

83. Ha YS, Choi YH. Effectiveness of a motivational interviewing smoking cessation program on cessation change in adolescents. Journal of Korean Academy of Nursing. 2012;42(1):19-27. doi: 10.4040/jkan.2012.42.1.19. PMID: CN-00832543. Exclusion Code: X8: ineligible study design.

84. Barrera M, Solomon A, Chung J, et al. Psychosocial screening implementation and mental health outcomes in the patients, caregivers and siblings. Pediatric blood & cancer. 2018;65:S563. doi: 10.1002/pbc.27455. PMID: CN-01653608. Exclusion Code: X8: ineligible study design.

85. Sanchez NL, Jimenez V, Haemer M, et al. Lifestyle + mindfulness pilot trial in latinx teens at risk for type 2 diabetes (T2D). Diabetes. 2020;69. doi: 10.2337/db20-1250-P. PMID: CN-02203837. Exclusion Code: X8: ineligible study design.

86. NCT. Implementation of prevention and intervention of maternal perinatal depression to strengthen maternal and child health. https://clinicaltrials.gov/show/NCT04069091. 2019. PMID: CN-01983767. Exclusion Code: X8: ineligible study design.

87. Tanney MR, Desir KC, Lehman BM, et al. 246. Adolescent Trials Network (ATN)- Scale It up (SIU): TMI project -tailored motivational intervention (TMI) effectiveness trial in multidisciplinary adolescent HIV care settings: implementation at an adolescent HIV clinical site in Philadelphia. Society for Adolescent Health and Medicine, Adolescent Health: Transforming Risk to Wellness, 11-14 March 2020, San Diego, California. Journal of Adolescent Health. 2020;66:S124-S5. doi: 10.1016/j.jadohealth.2019.11.249. PMID: 141170462. Language: English. Entry Date: 20200122. Revision Date: 20200122. Publication Type: Journal Article. Exclusion Code: X8: ineligible study design.

88. Alinsky R, Percy K, Adger H, et al. 152. Substance use screening, brief intervention, and referral to treatment (SBIRT) in pediatric practice: a quality improvement project in the Maryland Adolescent and Young Adult Health Collaborative Improvement and Innovation Network. SAHM Annual Meeting, Psychological Well-Being: International Transcultural Perspectives, March 6-9, 2019, Washington, DC, USA. Journal of Adolescent Health. 2019;64:S78-S. doi: 10.1016/j.jadohealth.2018.10.168. PMID: 134423117. Language: English. Entry Date: 20190205. Revision Date: 20190205. Publication Type: Journal Article. Exclusion Code: X8: ineligible study design.

89. NCT. Efficacy of centervention-ATOD: an implementation tool for dissemination of evidence-based programs for substance abuse. https://clinicaltrials.gov/show/NCT03084406. 2017. PMID: CN-01562708. Exclusion Code: X9: ineligible article type.

90. NCT. Online system for identifying and addressing teen depression in primary care. https://clinicaltrials.gov/show/NCT04489485. 2020. PMID: CN-02180956. Exclusion Code: X9: ineligible article type.

91. NCT. A clinical trial of SBIRT services in school-based health centers. https://clinicaltrials.gov/show/NCT02387489. 2015. PMID: CN-01504966. Exclusion Code: X9: ineligible article type.

92. Coker TR, Porras-Javier L, Zhang L, et al. Improved access to mental health care using a telehealth-enhanced referral process in pediatric primary care: a cluster randomized trial. Journal of the American Academy of Child and Adolescent Psychiatry. 2018;57(10):S222. doi: 10.1016/j.jaac.2018.09.282. PMID: CN-01653032. Exclusion Code: X9: ineligible article type.

93. NCT. Online system for primary care to prevent and address teen substance use. https://clinicaltrials.gov/show/NCT04689997. 2020. PMID: CN-02233547. Exclusion Code: X9: ineligible article type.

94. NCT. Reducing unmet mental health need of African-American children. https://clinicaltrials.gov/show/NCT05450094. 2022. PMID: CN-02423678. Exclusion Code: X9: ineligible article type.

95. Condon TP, Rosero D, Ramos MM. Addressing adolescent substance abuse in New Mexico by Engaging the state-funded school based health system: implementation of screening, brief intervention and referral to rreatment (SBIRT). Journal of Adolescent Health. 2017;60:S122-S3. doi: 10.1016/j.jadohealth.2016.10.420. PMID: 122721207. Language: English. Entry Date: 20170513. Revision Date: 20170513. Publication Type: Journal Article. Exclusion Code: X9: ineligible article type.

96. Adams ZW, Denne SC. Improving care for adolescents with substance use disorder: more than screening. Pediatric Research. 2021;89(4):720-1. doi: 10.1038/s41390-020-01314-4. PMID: 149848421. Corporate Author: Pediatric Policy Council. Language: English. Entry Date: 20211104. Revision Date: 20211104. Publication Type: Journal Article. Exclusion Code: X9: ineligible article type.

.

Appendix G. Appendix References

1. Powell BJ, Waltz TJ, Chinman MJ, et al. A refined compilation of implementation strategies: results from the Expert Recommendations for Implementing Change (ERIC) project. Implementation Science. 2015 2015/02/12;10(1):21. doi: 10.1186/s13012-015-0209-1.
2. Effective Practice and Organisaton of Care (EPOC). EPOC resources for review authors. Cochrane Effective Practice and Organisation of Care; 2013. epoc.cochrane.org/resources/epoc-resources/review-authors. Accessed on May 6, 2023.
3. Effective Practice and Organisation of Care (EPOC). EPOC taxonomy. 2015. https://epoc.cochrane.org/epoc-taxonomy May 10, 2023.
4. Sterne JAC, Savovic J, Page MJ, et al. RoB 2: a revised tool for assessing risk of bias in randomised trials. BMJ. 2019 Aug 28;366:l4898. doi: 10.1136/bmj.l4898. PMID: 31462531.
5. Zeng L, Brignardello-Petersen R, Hultcrantz M, et al. GRADE Guidance 34: update on rating imprecision using a minimally contextualized approach. J Clin Epidemiol. 2022 Oct;150:216-24. doi: 10.1016/j.jclinepi.2022.07.014. PMID: 35934265.
6. Harder VS, Barry SE, French S, et al. Improving adolescent depression screening in pediatric primary care. Acad Pediatr. 2019 Nov-Dec;19(8):925-33. doi: 10.1016/j.acap.2019.02.014. PMID: 30858080.
7. Dalal M, Holcomb JM, Sundaresan D, et al. Identifying and responding to depression in adolescents in primary care: a quality improvement response. Clin Child Psychol Psychiatry. 2023 Apr;28(2):623-36. doi: 10.1177/13591045221105198. PMID: 35642512.
8. Baum RA, Hoholik S, Maciejewski H, et al. Using practice facilitation to improve depression management in rural pediatric primary care practices. Pediatr Qual Saf. 2020 May-Jun;5(3):e295. doi: 10.1097/pq9.0000000000000295. PMID: 32656464.
9. Gooding HC, Cheever E, Forman SF, et al. Implementation and evaluation of two educational strategies to improve screening for eating disorders in pediatric primary care. J Adolesc Health. 2017 May;60(5):606-11. doi: 10.1016/j.jadohealth.2016.12.002. PMID: 28109735.
10. Mitchell SG, Gryczynski J, Schwartz RP, et al. Adolescent SBIRT implementation: generalist vs. specialist models of service delivery in primary care. J Subst Abuse Treat. 2020 Apr;111:67-72. doi: 10.1016/j.jsat.2020.01.007. PMID: 32087839.
11. Barbosa C, Cowell A, Dunlap L, et al. Costs and implementation effectiveness of generalist versus specialist models for adolescent screening and brief intervention in primary care. J Stud Alcohol Drugs. 2022 Mar;83(2):231-8. doi: 10.15288/jsad.2022.83.231. PMID: 35254246.
12. Gryczynski J, Monico LB, Garrison K, et al. Sustainability of adolescent screening and brief intervention services in primary care after removal of implementation supports. J Stud Alcohol Drugs. 2023

Jan;84(1):103-8. doi: 10.15288/jsad.21-00324. PMID: 36799680.
13. Sterling S, Kline-Simon AH, Satre DD, et al. Implementation of screening, brief intervention, and referral to treatment for adolescents in pediatric primary care: a cluster randomized trial. JAMA Pediatr. 2015 Nov;169(11):e153145. doi: 10.1001/jamapediatrics.2015.3145. PMID: 26523821.
14. Knight JR, Sherritt L, Gibson EB, et al. Effect of computer-based substance use screening and brief behavioral counseling vs usual care for youths in pediatric primary care: a pilot randomized clinical trial. JAMA Network Open. 2019;2(6):e196258-e. doi: 10.1001/jamanetworkopen.2019.6258.
15. Gibson EB, Knight JR, Levinson JA, et al. Pediatric primary care provider perspectives on a computer-facilitated screening and brief intervention system for adolescent substance use. J Adolesc Health. 2021 Jul;69(1):157-61. doi: 10.1016/j.jadohealth.2020.09.037. PMID: 33143987.
16. Thompson LA, Wegman M, Muller K, et al. Improving adolescent health risk assessment: a multi-method pilot study. Matern Child Health J. 2016 Dec;20(12):2483-93. doi: 10.1007/s10995-016-2070-5. PMID: 27406154.
17. Walter HJ, Vernacchio L, Correa ET, et al. Five-phase replication of behavioral health integration in pediatric primary care. Pediatrics. 2021 Aug;148(2). doi: 10.1542/peds.2020-001073. PMID: 34210739.
18. Richardson LP, Zhou C, Gersh E, et al. Effect of electronic screening with personalized feedback on adolescent health risk behaviors in a primary care setting: a randomized clinical trial. JAMA Netw Open. 2019 May 3;2(5):e193581. doi: 10.1001/jamanetworkopen.2019.3581. PMID: 31074815.
19. Richardson L, Parker EO, Zhou C, et al. Electronic health risk behavior screening with integrated feedback among adolescents in primary care: randomized controlled trial. J Med Internet Res. 2021 Mar 12;23(3):e24135. doi: 10.2196/24135. PMID: 33709942.
20. Proctor EK, Powell BJ, McMillen JC. Implementation strategies: recommendations for specifying and reporting. Implement Sci. 2013 Dec 1;8:139. doi: 10.1186/1748-5908-8-139. PMID: 24289295.
21. Sanci L, Chondros P, Sawyer S, et al. Responding to young people's health risks in primary care: a cluster randomised trial of training clinicians in screening and motivational interviewing. PLoS One. 2015;10(9):e0137581. doi: 10.1371/journal.pone.0137581. PMID: 26422235.
22. Sharifi V, Shahrivar Z, Zarafshan H, et al. Effect of general practitioner training in a collaborative child mental health care program on children’s mental health outcomes in a low-resource setting: A cluster randomized trial. JAMA Psychiatry. 2023;80(1):22-30. doi: 10.1001/jamapsychiatry.2022.3989. PMID: 2023-58582-002.