ORIGINAL RESEARCH

Assessing Implementation of Social Screening Within US Health Care Settings: A Systematic Scoping Review

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Purpose: **Though a growing crop of health care reforms aims to encourage health care-based social screening, no literature has synthesized existing social screening implementation research to inform screening practice and policymaking.**

Methods: **Systematic scoping review of peer-reviewed literature on social screening implementation published 1/1/2011–2/17/2022. We applied a 2-concept search (health care-based screening; social risk factors) to PubMed and Embase. Studies had to explore the implementation of health care-based multi-domain social screening and describe 1+ outcome related to the reach, adoption, implementation, and/or maintenance of screening. Two reviewers extracted data related to key study elements, including sample, setting, and implementation outcomes.**

Results: **Forty-two articles met inclusion criteria. *Reach* (*n* = 7): We found differences in screening rates by patient race/ethnicity; findings varied across studies. Patients who preferred Spanish had lower screening rates than English-preferring patients. *Adoption* (*n* = 13): Workforce education and dedicated quality improvement projects increased screening adoption. *Implementation* (*n* = 32): Time was the most cited barrier to screening; administration time differed by tool/workforce/modality. Use of standardized screening tools/workflows improved screening integration. Use of community health workers and/or technology improved risk disclosure and facilitated screening in resource-limited settings. *Maintenance* (*n* = 1): Only 1 study reported on maintenance; results showed a drop in screening over 21 months.**

Conclusions: **Critical evidence gaps in social screening implementation persist. These include gaps in knowledge about effective strategies for integrating social screening into clinical workflows and ways to maximize screening equity. Future research should leverage the rapidly increasing number of screening initiatives to elevate and scale best practices. (J Am Board Fam Med 2023;00:000–000.)**

Keywords: **Implementation Science, Screening, Social Determinants of Health, Social Risk Factors, Scoping Review, Systematic Review**

Introduction

Based on the recognition that socioeconomic adversity influences health outcomes,[1] health care settings in the United States (US) are increasingly screening patients for nonmedical drivers of health, or social factors, such as food security and housing stability.[2,3] These efforts are likely to continue expanding as national health plan and hospital quality measures on social screening are adopted in 2023.[4–6] Social screening initiatives are anticipated to increase health care teams' awareness of social risks that adversely impact health and consequently to inform efforts to decrease social risk

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or otherwise accommodate risks in ways that will improve health outcomes and health equity.[7–9]

We undertook this systematic scoping review to assess the existing evidence on the implementation of social screening, including the workforce and workflows used to implement screening in different settings and populations, as well as the comparative impacts of different approaches on screening reach, adoption, implementation, and maintenance/sustainability.[10–12] Given that social screening has been championed as 1 component of multidimensional efforts to improve health equity,[7–9] we were especially interested in how different integration strategies affected implementation outcomes in diverse populations, including populations identifying with minoritized racial/ethnic groups and endorsing non-English language preferences.[13,14]

Methods

This systematic scoping review on implementation outcomes was developed as part of a larger report on health care-based social screening that also explored (1) the prevalence of social screening; (2) the properties of social screening tools; (3) patient/caregiver perspectives on screening; and (4) provider perspectives on screening.[2] In consultation with an experienced medical librarian, we outlined our review protocol and developed a 2-concept search reflecting both health care-based screening practices and specific social risk factors to find relevant articles. This search strategy was based on a 2019 systematic review of the peer-reviewed literature on the psychometric and pragmatic properties of social screening tools that identified research on screening for social risk factors.[15] We adapted the search for PubMed and Embase databases. See Appendix 1 for additional search information.

To be included as part of the overarching scoping review, articles had to 1) involve multi-domain social screening (ie, screen for 2 of more domains related to socioeconomic circumstances, such as housing stability, food security, transportation access, utilities security, or financial strain); 2) be based in a US health care setting; 3) be an original research study published in the academic peer-reviewed literature between 1/1/2011-2/17/2022. Our focus was on multi-domain screening given the interdependence of screening domains[16,17] and national policy measures/professional society recommendations on multi-domain screening.[18–23] To be included in the implementation outcomes review, specifically, studies also had to describe 1 or more outcomes related to screening reach, adoption, implementation, and/or maintenance of screening practices, based on the implementation science RE-AIM framework.[12,24]

The RE-AIM framework consists of 5 core domains for assessing implementation outcomes: reach, effectiveness, adoption, implementation, and maintenance.[12] These domains have evolved over time to more explicitly focus on the equity and sustainability of interventions.[12,24] *Reach* outcomes relate to the number or proportion of individuals who participated in an intervention; they generally are used to inform implementation strategies that increase access to evidence-based interventions. Reach equity outcomes may evaluate differences in who received an intervention based on demographic characteristics.[12] *Effectiveness* outcomes characterize intervention impacts on a range of more downstream outcomes, which can include but are not limited to participant acceptability as well as participant health, wellbeing, and quality of life. Effectiveness equity outcomes explore the differential impacts of an intervention on participant subpopulations.[12] *Adoption* outcomes focus on the number or proportion of settings or individuals delivering an intervention that participated in an intervention. Whereas reach focuses on the intervention's target population (eg, patients completing screening questionnaires), adoption focuses on the settings and populations tasked with delivering the intervention (eg, staff providing screening questionnaires). Adoption mediators can include organizational-, setting-, and individual-level characteristics that influence whether an intervention was delivered and also can inform the development of strategies to increase equity in intervention uptake.[12] *Implementation* outcomes reflect multiple aspects of how a particular intervention was delivered, including whether it was delivered as intended (fidelity); whether/what changes were made to adjust for implementing the intervention in different settings/populations (adaptation), which is particularly relevant to implementation equity; and intervention-related costs (including staff time and direct financial costs).[12] *Maintenance* outcomes assess whether/how well an intervention is sustained over time, including at the individual- and organizational-level. Maintenance equity outcomes might assess what policy-, community-, organizational-, and individual-level factors contribute to the long-term sustainability of an intervention in different settings/populations.[12]

In this scoping review, we included articles describing screening reach only if they described comparative reach, that is, compared the reach of screening before or after an intervention or compared screening reach in different patient populations, rather than just described reach resulting from 1 implementation approach. We also did not include studies on effectiveness in this review (eg, studies examining the impact of screening on social risk, health/wellness, health care utilization/cost) because these studies did not distinguish between the impacts of screening alone versus screening coupled with related interventions to assist with identified social risks, and their focus was on evaluating the assistance interventions, not the screening itself. Previous reviews have reported on other markers of social screening effectiveness, specifically the acceptability of screening for patients/caregivers and health care teams.[12,24–26] Findings related to acceptability research outcomes are covered in separate publications and not described here.[2,25,26] Table 1 provides additional information about how we applied these RE-AIM outcomes. Additional exclusion criteria included: 1) irretrievable full text or 2) insufficient information about screening implementation approach/outcomes.

Search results were uploaded to the systematic review platform, Covidence, and duplicates were removed.[27] The original search was conducted on 8/8/2021. Additional articles were uploaded to Covidence through 2/17/2022, based on a weekly PubMed alert created using our 8/8/2021 search and by expert referral.[28,29] Two reviewers from the study team (E.H.D., B.A., E.M.B., V.L., M.F.M., L.M.G.) independently reviewed each title/abstract to determine if the study met study inclusion criteria. The team met weekly to discuss and resolve discrepancies. When we reached more than 90% agreement between reviewers, the remainder of title/abstracts were reviewed by only 1 study team member. Each study selected from the title/abstract review for full text review was then reviewed by 2 of 4 reviewers (E.H.D., B.A., E.M.B., V.L.). When we again reached more than 90% agreement about inclusion, only 1 study team member assessed each of the remaining studies for inclusion based on the group's definitions. Included articles containing information about implementation outcomes were flagged by the initial reviewers. After all full-text articles were reviewed, 2 reviewers (E.H.D., B.A.) extracted data from the articles describing implementation outcomes into a templated

Table 1. Applying Relevant RE-AIM Categories to Social Screening Implementation Studies*

	Definitions†	Relevant outcomes applied to social screening implementation studies
Reach	The number or proportion of individuals who participate in an intervention (and who are the target of that intervention).	Comparative screening rates, including pre/post intervention, between clinical sites, or by patient sociodemographic characteristics.
Adoption	The number or proportion of individuals or settings that deliver the intervention.	Rates of screening by clinical workforce. These included proxies for workforce screening, including rates of electronic health record-documented social screening.
Implementation	The consistency with which an intervention is delivered, the time and cost of an intervention, and adaptions made to an intervention.	Perceived barriers/facilitators to screening implementation; time required for screening; comparative implementation approaches and program fidelity (e.g. across modality, workforce); and program costs.
Maintenance	The extent to which an intervention is sustained over time.	Rates of screening over time.

*Table originally published in De Marchis EH, Brown E, Aceves BA, et al. State of the Science on Social Screening in Healthcare Settings. San Francisco, CA: Social Interventions Research and Evaluation Network. San Francisco, CA: Social Interventions Research and Evaluation Network. Available online.[2] Reproduced with permission.

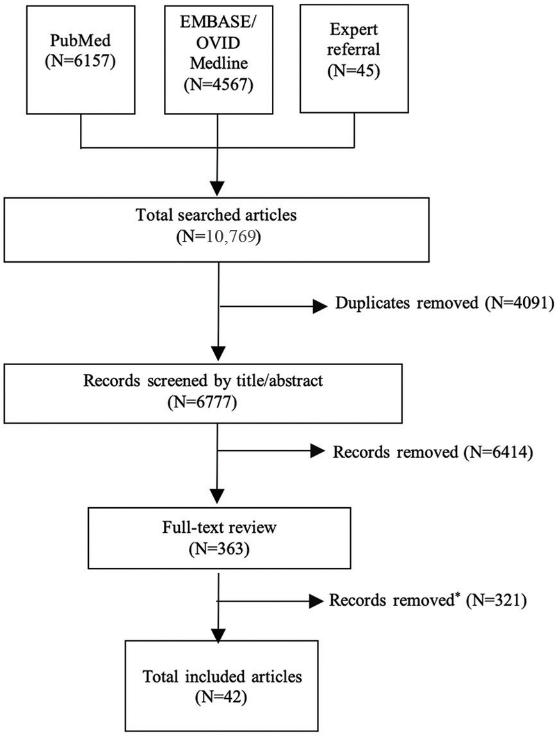
†Definitions based on Glasgow RE, Harden SM, Gaglio B, et al. RE-AIM Planning and Evaluation Framework: Adapting to New Science and Practice With a 20-Year Review. Front Public Health. 2019;7:64,[12] and Shelton RC, Chambers DA, Glasgow RE. An Extension of RE-AIM to Enhance Sustainability: Addressing Dynamic Context and Promoting Health Equity Over Time. Front Public Health. 2020;8:134.[24]

spreadsheet that was developed and tested by the study team before use. Extracted data included: study design, study sample (size and demographics), health care setting, type of data (qualitative/quantitative/mixed methods), and study outcomes related to each of the relevant implementation outcomes (reach, adoption, implementation, maintenance). The review followed the Preferred Reporting Items for Systematic reviews and Meta-Analyses extension for Scoping Reviews guidelines.[30]

Results

Our initial search yielded 6777 unique articles about social screening in health care settings; 363 of these articles were flagged for full-text review. Forty-two articles met all inclusion criteria for this implementation outcomes scoping review; all were unique implementation studies. (Figure 1). Six of 42 studies (14.3%) used experimental designs; the remainder were descriptive (85.7%). Twenty studies used quantitative data analysis (47.6%); 22 applied mixed/qualitative methods (52.4%). Ten articles included data from both health care clinicians/staff and patients (23.8%); 18 included patients only (42.9%) and 12 focused on clinicians/staff (28.6%). Study sample sizes ranged from 5 to 694 (median: 25.5) for studies including clinician/staff, and 7 to 100,097 (median, 588.5) for studies including patients. Twenty-nine studies (69.0%) took place in primary care settings; among them, 17 (59%) were in pediatric primary care settings. See Table 2 for a summary of these and additional study characteristics. See Table 3 for a summary of type of study data used, patient population, and setting, by RE-AIM domain.

Figure 1. PRISMA flow diagram.



*Records removed by the following exclusion category: not about social screening implementation (N=268), international setting (N=16), not original research (review article or perspective/commentary) (N=16), not in a healthcare setting (N=10), not on multi-domain social screening (N=8), full text irretrievable (N=3)

Reach

Seven studies looked at reach-related outcomes (21.4%); none used experimental designs (see Table 3 and 4).[31–37] All 7 used quantitative data; 2 (28.6%) included mixed methods.[35,36] Six of these descriptive studies (85.7%) compared the absolute number or proportion of patients screened across different settings/populations;[31–36] 1 study compared screening reach pre/post a workflow change.[37] No studies included a comparison group. A single retrospective chart review looked at how the type of workforce available to support resource referrals influenced screening reach.[34] The authors found that patients (both adult and pediatric) were screened at higher rates at primary care practices with a community-health worker (CHW) dedicated to social service support (28.8%) relative to practices without CHWs (15.3%) or CHWs not dedicated to social service support (12.7%).[34] A separate study in both adult and pediatric patients looked at how modality of screening affected reach by comparing screening rates in the emergency department (ED) setting when screening was conducted by staff who entered the patient room versus via a phone call into the patient room (a change made in response to the COVID-19 pandemic).[37] Rates were not significantly different between the 2 screening modes.[37]

All the articles describing reach-related outcomes reported on the race/ethnicity of the study setting population (see Table 2). Five studies (71.4%) explored variations in screening reach by patient race and/or ethnicity; reported differences were inconsistent. [31–33,36,37] For example, a study describing social screening in more than 100 community health centers (CHCs) found lower rates of screening in non-Hispanic White and Hispanic patients but higher rates of screening in non-

Table 2. Characteristics of Articles Included in Systematic Scoping Review (n = 42)

Author, Year	Provider Sample Size (n)	Patient Sample Size (n)	Study Design	Type of Data	Study Provider Population	Patient Population	Healthcare Setting	Study Setting	Race/ Ethnicity of Patient Population*
Beck et al., 2012[38]	n/a	639	Descriptive	Quantitative	Clinicians	Pediatrics	Primary Care	Urban	20% White 71% African American (AA) 9% other
Berry et al., 2020[72]	28	n/a	Descriptive; pilot	Qualitative	Leadership, frontline staff, volunteers, and primary care providers	Adults	Primary Care	Urban	90% "Patients of color"
Bittner et al., 2021[31]	n/a	100,097	Descriptive	Quantitative	n/a	Pediatrics	Primary Care	Rural, urban, suburban	4% Asian 4% Non-Hispanic (NH) Black 9% Hispanic or Latino 60% NH White 22% Other/unknown
Bleacher et al., 2019[32]	n/a	2018	Descriptive (case study)	Quantitative	n/a	All ages	Primary Care	Urban	60% White 13% AA
Broaddus-Shea et al., 2022[68]	10	20	Descriptive	Qualitative	Clinic staff involved in social screening / navigation	Adults	Primary care	Rural	2.5% Hispanic 7% NH White 0.5% Native American
Browne et al., 2021[69]	15	n/a	Descriptive	Qualitative	Community resource staff, managers from CHCs and hospitals	Population screened not specified	Primary Care	Not specified (intended to be nationally represent-ative)	n/a

Continued

Table 2. Continued

Author, Year	Provider Sample Size (n)	Patient Sample Size (n)	Study Design	Type of Data	Study Provider Population	Patient Population	Healthcare Setting	Study Setting	Race/ Ethnicity of Patient Population*
Buitron de la Vega et al., 2019[39]	n/a	1696	Descriptive	Quantitative	n/a	Adults	Primary Care	Urban	32% NH White 40% NH Black/AA 4% Native American/ American Indian 24% Declined <1% Hispanic/Latinx, Native Hawaiian/ Pacific islander (PI)
Byhoff et al., 2017[70]	n/a	n/a	Descriptive	Qualitative	n/a	All ages	Primary Care	Rural, urban, suburban	Health center characteristics: 56% NH White 27% NH Black/AA 16% Hispanic 13% Other
Chisolm et al., 2019[71]	24	n/a	Descriptive	Mixed methods	State Medicaid representatives	Medicaid population	State Medicaid medical directors	Not specified	n/a
Colvin et al., 2016[40]	87	n/a	Experimental (post-intervention with non-randomized comparison group)	Mixed methods	Pediatric, Med-Peds interns	Pediatrics	Inpatient	Urban	54% NH White 22% NH Black 15% Hispanic 22% Other 2% Asian/PI (API)/ Native American

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Table 2. Continued

Author, Year	Provider Sample Size (n)	Patient Sample Size (n)	Study Design	Type of Data	Study Provider Population	Patient Population	Healthcare Setting	Study Setting	Race/ Ethnicity of Patient Population*
Cottrell et al., 2019[33]	n/a	31,549	Descriptive	Quantitative	n/a	All ages	Primary Care	Not specified	30% NH White 31% NH Black 25% Hispanic 11% NH Other 4% Missing
Drake et al., 2021[66]	7+ (exact n unclear)	n/a	Descriptive	Qualitative	Clinical champions, administrators, and front-line staff involved in social screening program	All ages	Primary Care (Family medicine, Internal medicine, Pediatrics)	Rural, urban, suburban	n/a
Drake et al., 2021[65]	5	10	Descriptive	Qualitative	Clinical case managers	Adults	Primary Care	Unclear ("medium-sized city")	Interviewees: 80% NH 20% Hispanic Screened patients: 49% NH Black 35% Hispanic
Emengo et al., 2020[67]	n/a	7	Descriptive	Qualitative	n/a	Adult caregivers of pediatric patients	Primary Care	Urban	92% Non-White
Fiori et al., 2019[41]	n/a	4162	Descriptive	Mixed methods	Clinicians	Pediatrics	Primary Care	Urban	n/a
Fiori et al., 2021[34]	694	53,093	Descriptive (retrospective chart review)	Quantitative	Pediatric, family medicine, internal medicine clinicians	All ages	Primary Care	Urban	15% NH White 21% NH Black 23% Hispanic 19% API 16% American Indian/ Alaska Native

Continued

Table 2. Continued

Author, Year	Provider Sample Size (n)	Patient Sample Size (n)	Study Design	Type of Data	Study Provider Population	Patient Population	Healthcare Setting	Study Setting	Race/ Ethnicity of Patient Population*
Freibott et al., 2021[35]	5	662	Descriptive; quality improvement	Mixed methods	Hospital staff involved in screening	Mix of populations including adults, geriatric	Primary care; Specialty; Emergency dept	Rural, urban	Race: 62% White 11% Black 5% "Other" 22% Unknown Ethnicity: 26% Hispanic/Latinx
Garg et al., 2007[60]	45	200	Experimental (randomized trial)	Quantitative	Pediatric residents	Adult caregivers of pediatric patients	Primary Care	Urban	Caregivers: 91% Black
Godecker et al., 2013[61]	6	733	Descriptive	Quantitative	RNs, CHWs	Adults; pregnant women	Specialty (OB-GYN)	Urban	4% NH White 70% NH Black 5% Hispanic 18% API
Gold et al., 2018[36]	24	1130	Descriptive	Mixed methods	Care team members	All ages	Primary Care	Not specified	Patients screened: Site A: 90% White 7% Hispanic Site B: 85% White 20% Hispanic Site C: 71% White 15% Hispanic

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Table 2. Continued

Author, Year	Provider Sample Size (n)	Patient Sample Size (n)	Study Design	Type of Data	Study Provider Population	Patient Population	Healthcare Setting	Study Setting	Race/ Ethnicity of Patient Population*
Gottlieb et al., 2014[62]	n/a	538	Experimental (randomized trial)	Quantitative	n/a	Adult caregivers of pediatric patients	Emergency Dept	Urban	57% Hispanic 25% NH Black 5% NH White 13% Other/ Multiethnic
Greenwood-Ericksen et al., 2021[63]	23	n/a	Descriptive	Qualitative	Medical directors, CHWs, RN case managers across 5 CHCs	All ages	Primary Care	Rural, urban, suburban	n/a
Higginbotham et al., 2019[42]	n/a	53	Descriptive; quality improvement	Quantitative	n/a	Pediatrics	Primary Care	Rural	Predominantly White (percentage not provided)
Jones et al., 2021[64]	611	n/a	Descriptive	Quantitative	Physicians, nurse practitioners	Pediatrics	Primary Care (Family medicine and pediatrics)	Rural, urban, suburban	n/a
Kim et al., 2021[58]	61	327	Descriptive	Mixed methods	Staff involved with screening	Adults (Geriatric; aged 65+)	Primary Care	Urban	Clinic A: not described Clinic B: 59% AA 3% Hispanic 3% Asian Clinic C: >60% Hispanic Non-White 24% AA
Kocielnik et al., 2019[59]	n/a	30	Descriptive; pilot	Mixed methods	n/a	Adults	Emergency Dept.	Urban	20% White 27% Black/AA 30% Hispanic 7% Multiple race 13% Other/decline to answer

Continued

Table 2. Continued

Author, Year	Provider Sample Size (n)	Patient Sample Size (n)	Study Design	Type of Data	Study Provider Population	Patient Population	Healthcare Setting	Study Setting	Race/ Ethnicity of Patient Population*
LaForge et al., 2018[56]	n/a	n/a	Descriptive (case studies)	Qualitative	n/a	All ages	Primary Care	Not specified	n/a
Morgenlander et al., 2019[57]	65	n/a	Descriptive	Quantitative	Clinic directors	Pediatrics	Primary Care	Not specified (national survey of pediatric residency continuity clinic directors)	Patients from participating clinics: 28% had 26 to 50% White patients 22% had 26 to 50% Black patients 26% had 26 to 50% Hispanic patients
Murray et al., 2022[37]	n/a	1258	Descriptive	Quantitative	n/a	All ages	Emergency Dept	Urban	Patients screened pre- versus post-COVID: 43% versus 47% White 29% versus 18% Black 6% versus 3% American Indian 13% versus 16% Other 43% versus 48% Hispanic
Oldfield et al., 2021[53]	n/a	175	Descriptive	Quantitative	n/a	Adult caregivers of pediatric patients; Adolescent patients	Primary Care	Urban	82% Latinx caregivers 95% Latinx adolescents 49% Mixed Race/ Other caregivers 62% Mixed Race/ Other adolescents
O'Toole et al., 2013[43]	36	n/a	Experimental (pre-/post-intervention)	Mixed methods	Pediatric and Med-Peds residents	Pediatrics; All ages	Primary Care	Urban	n/a

Continued

Table 2. Continued

Author, Year	Provider Sample Size (n)	Patient Sample Size (n)	Study Design	Type of Data	Study Provider Population	Patient Population	Healthcare Setting	Study Setting	Race/ Ethnicity of Patient Population*
Page-Reeves et al., 2016[54]	n/a	3048	Descriptive; pilot	Quantitative	n/a	All ages	Primary Care	Urban	n/a
Palakshappa et al., 2021[55]	27	219	Descriptive (retrospective chart review)	Quantitative	Physicians, advanced practice practitioners, RNs, staff	Adults	Primary Care	Urban	23% NH White 64% NH Black 13% Hispanic 1% Other
Patel et al., 2018[44]	n/a	322	Experimental (pre-/post-intervention); retrospective chart review	Qualitative	Resident physicians	Pediatrics	Primary Care	Urban	54% Not Hispanic/ Latinx 8% Hispanic/Latinx 38% Unknown
Power-Hays et al., 2020[45]	n/a	132	Descriptive; quality improvement	Mixed methods	n/a	Pediatrics	Specialty clinic (hematology)	Urban	n/a
Sand, 2021[46]	n/a	78	Experimental (pre-/post-intervention); pilot	Quantitative	n/a	Adults	Primary Care	Not specified	62% White 13% Black 24% Hispanic 1% Asian
Schwartz et al., 2020[47]	373	n/a	Descriptive	Quantitative	Hospitalists, RNs	Pediatrics	Inpatient	Urban	n/a
Silva et al., 2021[48]	n/a	890	Descriptive (retrospective chart review)	Quantitative	Residents, faculty	Pediatrics	Primary Care	Urban	n/a
Sokol et al., 2021[52]	13	n/a	Descriptive	Qualitative	Physicians, Nurse practitioners	Pediatrics	10 different Pediatric settings	Not specified	n/a

Continued

Table 2. Continued

Author, Year	Provider Sample Size (n)	Patient Sample Size (n)	Study Design	Type of Data	Study Provider Population	Patient Population	Healthcare Setting	Study Setting	Race/ Ethnicity of Patient Population*
Vasan et al., 2020[49]	92	n/a	Descriptive	Quantitative	Residents	Pediatrics	Pediatric residents across multiple settings	Urban	n/a
Wallace et al., 2020[50]	n/a	210	Descriptive	Mixed methods	Staff	Adults	Emergency Dept	Urban	n/a
Wallace et al., 2021[51]	8	10 Patients in focus group; 2821 patients screened	Descriptive	Mixed methods	Registration staff	Adults	Emergency Dept	Urban	Focus group patients: 40% White 20% Black 10% API 20% Hispanic/Latinx Patients screened: 79% White 14% Hispanic/Latinx 4% Black/AA 2% Asian 12% Other

*Race/ethnicity categories are as reported in the original article.

Abbreviations: CHWs, community health workers; RN, registered nurse; CHCs, community health centers.

Table 3. Summary of Type of Study Data Used, Patient Populations, and Study Settings across RE-AIM Domains for Articles Included in Systematic Scoping Review (n = 42)

	Study Data			Patient Population				Study Setting				
	Quantitative	Qualitative	Mixed	Pediatric	Adult	All Ages	Other*	Primary Care	Emergency Department	Inpatient	Multiple	Other*
RE-AIM Category	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Reach (n = 7)	5 (71)[31–34,37]	0	2 (29)[35,36]	1 (14)[31]	1 (14)[35]	5 (71)[32–34,36,37]	0	5 (71)[31–34,36]	1 (14)[37]	0	1 (14)[35]	0
Adoption (n = 13)	8 (61)[34,38,39,42,46–49]	1 (8)[44]	4 (30)[40,41,43,45]	10 (77)[38,40–45,47–49]	2 (15)[39,46]	1 (8)[32]	0	9 (69)[34,38,39,41–44,46,48]	0	2 (15)[40,47]	1 (8)[49]	1 (8)[45]
Implementation (n = 32)	13 (41)[32,39,42,47,53–55,657,60–62,64,72]	9 (28)[52,56,63,65–70]	10 (31)[35,36,41,43,45,50,51,58,59,71]	12 (38)[41–43,45,47,52,53,60,62,64,67]	10 (31)[35,39,50,51,55,58,59,61,65,72]	8 (25)[32,36,54,56,63,66,68,70]	2 (6)[69,71]	22 (69) [32,36,39,41–43,53–58,60,63–70,72]	4 (13)[50,51,59,62]	1 (3)[47]	2 (6)[35,52]	3 (9)[45,61,71]
Maintenance (n = 1)	0	0	1 (100)[40]	1 (100)[40]	0	0	0	0	0	1 (100)[40]	0	0
Total (n = 42)	21 (50)[31–34,37–39,42,46–49,53–55,57,60–62,64,72]	10 (24)[44,52,56,63,65–70]	11 (26)[35,36,40,41,43,45,50,51,58,59,71]	18 (43)[31,38,40–45,47–49,52,53,60,62,64,67]	11 (26)[35,39,46,50,51,55,58,59,61,65,72]	11 (26)[32–34,36,37,54,56,63,66,68,70]	2 (5)[69,71]	29 (69)[31–34,36,38,39,41–44,46,48,53–58,60,63–70,72]	5 (12)[37,50,51,59,62]	2 (5)[40,47]	3 (7)[35,49,52]	3 (7)[45,61,71]

*Other: one article on implementation took place in primary care but did not specify what patients were screened (Browne et al[69]); another focused on Medicaid patients without any additional information provided on patient age or study setting (Chisolm et al[71]). Two articles took place in specialty settings (Power-Hays et al, adoption and implementation;[45] Godecker et al, implementation[61]).

Table 4. Article Outcomes by Included RE-AIM Categories (Reach, Adoption, Implementation, and Maintenance) (n = 42)

Author, Year	Outcomes
	Reach outcomes (n = 7)
Bittner et al., 2021[31]	Patients who were identified as Non-Hispanic White had higher rates of completed screens; patients classified as "Other/unknown" race/ethnicity had lower rates of completed screens. Medicaid-insured patients with completed screens were more likely to be Hispanic/Latino or Non-Hispanic Black.
Bleacher et al., 2019[32]	Although patients identified as AA race made up 13% of patients eligible for screening, they made up only 11% of those screened; versus patients identified as White made up 60% of the screening eligible population but 62% of those screened.
Cottrell et al., 2019[33]	A greater proportion of Hispanic patients were screened for social risks (32% vs 25% of patients not screened).
Fiori et al., 2021[34]	Patients who received care at a practice with a CHW focusing on social service support were more likely to be screened as compared with practices without a CHW or a CHW not focused on social service support (29% vs 15% and 13%, respectively). 26% of active pediatrics patients, 20% of internal medicine patients and 19% of family medicine patients were screened.
Freibott et al., 2021[35]	Hospital 1: 271/289 94% patients asked to participate were screened; 28/271 (11%) declined to answer need-based questions; 100% of patients were screened at Hospital 2 to 4.
Gold et al., 2018[36]	At one clinic site (B), a greater proportion of patients identified as Hispanic were screened, compared with the clinic patient population. At another (site C), a greater proportion of patients identified as Asian race were screened. Across all clinics, a lower proportion of patients who prefer to speak Spanish were screened compared with patients preferring to speak English.
Murray et al., 2022[37]	In the pre-COVID period, 666/16,674 potentially eligible patients were screened in person, and 592/11,309 potentially eligible patients were screened in ED by phone in the post-COVID period. Potentially eligible = patients with Medicaid/Medicare insurance (target population) who were seen in the ED during the study period.
	Adoption outcomes (n = 13)
Beck et al., 2012[38]	Indirectly evaluated clinician screening practices.* 81% of caregivers had 1/7 social history questions documented; >50% had all 7 social history questions documented (mean 4.5 questions).
Buitron de la Vega et al., 2019[39]	Indirectly evaluated healthcare team screening practices. Among 85/1696 patients screened on a paper screener instead of directly on an EHR-embedded tool, 75% were integrated into the electronic health record (EHR) by medical assistances. 82% of patients who screened positive on the social screener had ICD-10 codes added to their visit diagnoses (367/445).
Colvin et al., 2016[40]	Indirectly evaluated clinician screening practices. Intervention interns who received training on social screening using behavioral change strategies (e.g. reminders/cues to screen) included information on patients social risks in their admission history and physicals (H&P) for 82% of their inpatient pediatric patients versus 17% in the control group.
Fiori et al., 2019[41]	Indirectly evaluated clinician screening practices. On average, 76% of providers had patients screened during well-child visits over an 11-month period (engaged = >50% of eligible patients were screened).
Fiori et al., 2021[34]	Indirectly evaluated clinician screening practices. Active clinician participation in social screening was defined as whether social screener results were present in a patient note in the EHR. Screening participation varied among clinicians: 13% of clinicians had social screener results documented in 1 to 5 patient notes over the study period. Pediatric providers were the largest proportion of clinicians actively participating ins screening (55%), followed by internal medicine (49%) and family medicine clinicians (49%).
Higginbotham et al., 2019[42]	Indirectly evaluated staff screening practices. Staff administered screening was completed for 63% of patients/families overall; screening rates varied from 68% week 1, 45% week 2, 77% week 3.
O'Toole et al., 2013[43]	Directly evaluated clinician screening practices. After intervention training, intervention residents screened patients more frequently for familial support, utility issues, and housing conditions (based on direct observation).
Patel et al., 2018[44]	Indirectly evaluated clinician screening practices. An intervention to increase resident screening (trained residents on screening and local resources; included visual reminders to screen) increased documentation of screening in patient notes for two domains, income and housing.
Power-Hays et al., 2020[45]	Indirectly evaluated healthcare team screening practices. A quality improvement project to increase the number of completed social screening surveys found that the percentage of completed screenings varied per month from 23% (attributed to short staffing) to 89% at its highest (attributing to changing the responsibility of distributing the social screened from the clinician to the clinical assistant).
Sand, 2021[46]	Indirectly evaluated clinician screening practices. An intervention to train clinicians increased the number of documentations of social screening post-intervention from 44% (n = 16) to 93% (n = 39) of new patient visits.

Continued

Table 4. Continued

Author, Year	Outcomes
Schwartz et al., 2020[47]	Directly evaluated clinician screening practices. 29% of hospitalists and 41% of nurses (RNs) reported frequently screening hospitalized patients for 1+ social risk; 97% of hospitalists and 65% of RNs reported not using a specific screening tool.
Silva et al., 2021[48]	Indirectly evaluated clinician screening practices. Comparisons of screening percentages and patient populations between clinician groups: 91% of families seen by residents were screened for 1+ SDH (95% CI: 88.4% to 93.4%) versus 96% of faculty patients (95% CI: 94.3% to 98.2%). Families were screened less frequently for food insecurity and financial insecurity by residents compared with faculty (79.3% vs 92.5%, $P < .05$; 79.9% vs 93.6%, $P < .05$; respectively). A similar percentage of families were screened for school absence by residents and faculty (83.9% and 86.1%, $P = .78$).
Vasan et al., 2020[49]	Directly evaluated clinician screening practices. More residents reported screening within outpatients settings compared with inpatient settings.
	Implementation outcomes (n = 32**)**
Berry et al., 2020[72]	*Facilitators/Adaptations*: Screens increased after integrating screening into existing workflow. Each clinic modified a tool adapted to their workflow and patient population. *Barriers*: Staff burden (one site switched to using volunteers); lack of time to discuss screening results with patients; patient literacy, limited English proficiency, concerns about immigration status, screening fatigue.
Bleacher et al., 2019[32]	*Facilitators*: Practice-wide data sharing on screening rates increased screening activities. Using multiple communication strategies (email, meetings daily huddles) helped to communicate about screening. A physician champion helped increase awareness about the importance of screening and progress screening efforts. Concerns about lack of time to screen declined during pilot screening implementation.
Broaddus-Shea et al., 2022[68]	*Facilitators*: Frame screening as standard and not singling out patients; normalize social needs; assure patients about privacy; clarify purpose of screening; describe relationship between social needs and health; emphasize benefits to the community; respect patient autonomy; build trusting relationships; treat screening as ongoing process; draw on trauma-informed care; offer resources first; understand and acknowledge social and structural barriers to assistance. *Barriers*: Lack of framing/introduction of screening; lack of time to follow up with patients after positive screens. Concerns about confidentiality.
Browne et al., 2021[69]	*Barriers*: Managers noted that patients had difficulty completing screening before their appointments due to discomfort with technology and lack of time.
Buitron de la Vega et al., 2019[39]	*Time:* Medical assistants (MAs) took an average of 1 minute to enter responses from screening into patients' EHR.
Byhoff et al., 2017[70]	*Adaptations*: 41% of health centers reported that screening was self-reported. Most commonly "other" staff were reported as screening patients (24%), followed by MAs (22%); social workers/ case managers (18%); providers (16%); front desk (12%); RNs (10%). 40% of screening was conducted before, during, or after a visit; new patients were most frequently targeted; most health centers (63%) used the EHR to record social information directly.
Chisolm et al., 2019[71]	*Adaptations*: Lack of social risk data standardization across clinics made it difficult to use it to evaluate for health disparities.
Drake et al., 2021[65]	*Facilitators*: Clinicians reported that specific, evidence-based patient engagement techniques, such as empathic communication and motivational interviewing, facilitated implementation and delivery of the screening assessment. Patients appreciated not feeling rushed and acknowledged the benefit of empathic communication with healthcare team. *Barriers*: Clinicians noted that EHR documentation could be time consuming. It was unclear who should conduct screening. Time was a barrier to screening efforts.
Drake et al., 2021[66]	*Cost*: The study estimated costs of social care programs at 4 FQHCs; costs included referral and case management activities beyond screening. Variability in program costs between FQHCs was attributed to personnel cost. *Adaptation*: There was variability in screening activates across FQHCs, including the use of customized EHR flowsheets.
Emengo et al., 2020[67]	*Facilitators*: Caregivers preferred to receive the screening survey while waiting for a visit (to make best use of time); caregivers expressed a preference for trained navigators vs physician to screen due to a perception that navigators had more time. Caregivers appreciated when their clinicians were aware of the screening results.
Fiori et al., 2019[41]	*Facilitators:* Developed a standardized process for screening during well-child visits. A 'provider champion'–a designated clinician based at the health center who led ongoing program quality improvement–was used to coach community health workers (CHWs), and lead program adaptions. 'Administrative liaisons'–clinical site leaders engaged with the program–provided overall leadership, direction, and supervision. Clinic met regularly to review progress and concerns, and make changes as needed.

Continued

Table 4. Continued

Author, Year	Outcomes
Freibott et al., 2021[35]	*Facilitators*: Having a short, easy to use screening tool. *Barriers*: Lack of a standardized referral process made screening difficult to sustain or justify. *Adaptations*: Hospitals were given flexibility regarding who/when/how to screen.
Garg et al., 2007[60]	*Facilitators*: Caregivers in intervention group (residents trained to screen caregivers) discussed a greater number of family psychosocial topics (2.9 vs 1.8) with their resident clinician and had fewer unmet desires for discussion (0.46 vs 1.41) compared with caregivers in control arm. *Time*: 91% of residents reported screening added <5 minutes to the visit and 55% of residents reported screening added <2 minutes to their visits.
Godecker et al., 2013[61]	*Facilitators/Workforce*: CHWs were able to capture more social risk information compared with RNs (patients disclosed more risks). *Cost/Workforce*: CHWs were able to conduct screening at 56% reduced costs compared with RNs.
Gold et al., 2018[36]	*Facilitators*: Workflow customization, based on barriers encountered during implementation of screening/EHR documentation, facilitated expanding screening. Having an EHR-savvy clinic champion at each site facilitates screening/documentation efforts; served as a resource to screening implementation. Embedding social screening within the EHR facilitated screening. *Barriers:* Paper based screening created an extra step for staff to input screening. The EHR social risk tool was perceived by some as contributing to social risk data being in multiple places in EHR. Other barriers included: lack of staff EHR expertise/competencies, the tool needing to be customized at each site, differences in EHR security access by staff role.
Gottlieb et al., 2014[62]	*Facilitators/Modality*: Caregivers who responded to computer-based survey versus face-to-face had higher disclosure of interpersonal violence/threats in the home, financial strain, child's safety, lack of/inadequate health insurance, income, and overall number of positive social risk domains.
Greenwood-Ericksen et al., 2021[63]	*Facilitators*: Standardized screening to avoid missing important needs and standardize comparisons across subgroups; CHW roles (patients more willing to talk to CHWs, but CHWs also had limited time). *Barriers:* Not using evidence to select tools; time constraints; inconsistencies in practices; having to add in paper screens to EHR. Funding often determined who was screened (i.e. what patients were targeted). *Adaptations*: All FQHCs tailored screenings for specific subgroups, but details not provided. There was significant variability within and across sites regarding who screened, how and when screening was done, whether screening tools with integrated within EHR.
Higginbotham et al., 2019[42]	*Facilitators*: Hypothesized facilitator to increasing adoption was having screening in brightly colored folders and easily accessible to staff.
Jones et al., 2021[64]	*Adaptation:* Highlighted variability in clinician screening practices. More than 1/3rd of providers noted using informal practices to screen for social risks, asking questions differently depending on the client and family. Close to 50% reported using paper or electronic self-complete screening tools; face-to-face screening was less common.
Kim et al., 2021[58]	*Facilitators*: Primary Care Liaison (PCL) educated 61 interprofessional primary care providers/staff on how to identify and refer patients to address unmet social needs. PCL provided way to screen patients for social needs after hospitalization.
Kocielnik et al., 2019[59]	*Facilitators/Modality*: Low health literacy participants preferred using a Chatbot over online version of survey (Chatbot was perceived as engaging and caring) versus high literacy patients preferred online survey (Chatbot was perceived as robotic, disingenuous). Some participants reported being more comfortable disclosing social risks to a Chatbot versus others felt more comfortable disclosing on online survey; not split by literacy level. *Time/Modality*: The Chatbot took longer to complete than the survey for both high and low literacy patients.
LaForge et al., 2018[56]	*Adaptations*: All organizations noted significant flexibility in who administered screening and when screening was done. Two organizations noted making changes to their tools after piloting; Kaiser's YCLS tool was shortened and translated into different languages; Mosaic Medical discontinued using their own screening tool for OCHIN's screening tool after 2 years.
Morgenlander et al., 2019[57]	*Barriers*: Lack of time (68%), resources (50%), and training to administer and address positive screens (47%). 9% reported inadequate evidence as a barrier. *Adaptations*: Clinics used validated screening instruments (31%), instruments developed by the staff (28%), or adaptations of validated instruments (16%). Most surveys were administered by paper forms (55%), done at well visits (47%), and done by the primary care provider (51%).
O'Toole et al., 2013[43]	*Time*: Intervention residents spent more time screening for social risks (median increase of 165 seconds vs control residents median increase of 30 seconds).

Continued

Table 4. Continued

Author, Year	Outcomes
Oldfield et al., 2021[53]	*Time*: Surveys were administered via tablet and took caregivers 5.6 minutes to complete versus 3.9 minutes for adolescents. *Adaptations*: Most screens took place during well-child preventive visits versus follow-up or urgent visits.
Page-Reeves et al., 2016[54]	*Facilitators*: Patients who completed screen with MA face-to-face had higher rates of screening positive for social risks.
Palakshappa et al., 2021[55]	*Facilitators*: Healthcare teams thought the mobile system aligned with how they thought screening should be done, and providers perceived the system as easy to use. Sent automated message in EHR to notify clinician seeing patient and clinic's patient navigator if they screened positive. *Barriers*: 43/219 (19.6%) patients required assistance with the tablet to complete tool; relied on study coordinator to assist patients if needed assistance completing screening.
Power-Hays et al., 2020[45]	*Facilitators*: Changing responsibility of survey distribution from physician to clinical assistants; sharing data at staff meetings on high patient needs and patient satisfaction; giving screener to all patients for non-sick/non-urgent visits; posting reminders in exam rooms. *Barriers:* Temporary staff shortages.
Schwartz et al., 2020[47]	*Facilitators*: Hospitalists reported doing more screening if they felt that screening was clinically relevant (e.g. there were concerns about language barriers, access to health care, insurance, transportation barriers, abuse, parent education/literacy), and doing more screening if they felt more competent at it. *Barriers*: Lack of time, resources, and a standardized inpatient social screening tool.
Sokol et al., 2021[52]	*Facilitators*: Having systematic screening as part of workflow (e.g. through EHR checkbox); clinician involvement with screening process to build patient trust. Desire for explicit processes for screening frequency and screening rationale to provide transparency for families. *Barriers*: Time.
Wallace et al., 2020[50]	*Barriers*: Staff expressed discomfort asking questions they believe to be stigmatizing. *Fidelity*: Staff used their own judgement to determine who to screen and how (which could be based on patient appearance or insurance type).
Wallace et al., 2021[51]	*Facilitators*: Patients noted that the perceived sincerity of screening staff impacted their receptivity to screening. *Barriers*: Staff noted discomfort with screening and perception of screening futility. Patients expressed concerns about stigma and privacy. *Fidelity*: Staff would tailor the screening using their "professional intuition;" decide how to frame screening/when to screen based on this intuition (including based on patient appearance).
	Maintenance outcomes (n = 1)
Colvin et al., 2016[40]	30/43 intervention interns (70%) stopped using the screening tool during the maintenance period, whereas 13 (30%) continued screening until the end of the 21-month post-intervention period.

*Studies on adoption that are listed as having indirectly evaluated screening practices evaluated the number/proportion of clinicians/staff who conducted screening by analyzing the number/proportion of patient notes with documented screening results or number of completed screens.
Abbreviations: AA, African American; CHWs, community health workers; RN, registered nurse; ED, Emergency Department; EHR, Electronic health records; ICD-10 codes, International classification of diseases codes (10th Revision); CI,confidence interval; FQHCs, Federally qualified health centers.

Hispanic Black patients, as compared with the proportion of these groups in the overall patient population.[33] In contrast, a study in 1 academic primary care clinic found that Black patients were underrepresented among screened patients and White patients were over-represented.[32] Two of the 5 studies that explored differences by race/ethnicity in screening reach also explored differences by language; both found lower rates of screening among patients who preferred to speak Spanish.[33,36]

Adoption

Thirteen studies reported screening adoption rates by clinical team members (33.3%) (Table 3 and 4).[34,38–49] Four of these articles (30.8%) involved experimental designs (postintervention with a nonrandomized comparison group[40] [the only study on adoption with a comparison group] and pre-/postdesigns[43,44,46]). Eight of 13 studies (61.5%) exclusively used quantitative data.[34,38,39,42,46–49] (See Table 3) 10 studies (76.9%) indirectly evaluated the number/proportion of clinicians/staff who conducted screening by analyzing the number/proportion of patient notes with documented screening results or number of completed screens;[34,38–42,44–46,48] the remaining 3 studies more directly assessed adoption outcomes. One observed pediatric resident physicians during clinical encounters[43] and 2 surveyed pediatric clinicians about screening practices.[47,49] Ten of the 13 articles in this group looked at screening adoption specifically among clinicians (eg, physicians, nurse practitioners);[34,38,40,41,43,44,46–49] the others included screening practices among other health care staff (eg, medical assistants [MA], registered nurses [RN]).[39,42,45] Substantial heterogeneity in implementation approaches (eg, who conducted the screening and how) and in study methodology (eg, how adoption was measured) makes it difficult to synthesize findings across studies. All 4 of the articles using an experimental design reported an increase in screening adoption after clinician education/training around screening,[40,43,44,46] 3 of which targeted pediatric resident physicians.[40,43,44] Two additional descriptive studies in pediatric settings reported an increase in screening adoption after continuous quality improvement interventions (eg, plan-do-study-act cycles).[42,45]

Implementation

Thirty-two articles included information on screening implementation outcomes, including barriers/facilitators to screening, screening fidelity (whether the screening was implemented as intended) and adaptations (how screening implementation was changed), time to screen (both to administer screening and/or for patients to complete), workforce and modality for screening, and screening costs (76.2%) (Table 3 and 4).[32,35,36,39,41–43,45,47,50–72] As described in sections above, some of these articles also looked at how reach and/or adoption varied by different implementation approaches. Three articles (9.4%) used experimental designs (randomized trials[60,62] [the only 2 articles on implementation outcomes that used a comparison group] and pre-/postdesign[43]). Across the 32 articles, 13 (40.6%) exclusively used quantitative data[32,39,42,47,53–55,57,60–62,64,72] versus 9 (28.1%) exclusively used qualitative data.[52,56,63,65–70] (See Table 3) Common facilitators to screening included: consistent communication about screening progress and processes with the health care team,[32,41,45,68] clear introduction and framing of the screening rationale and processes with patients/caregivers,[52,68] and training health care teams on empathic inquiry and trauma-informed care.[65,68] Commonly cited barriers to implementation included staffing availability and time.[45,47,57,63,65,68,69,72]

Sixteen descriptive studies (50.0%) commented on screening implementation fidelity and adaptations.[35,36,41,45,50,51,53,56,57,63,64,66,70–72] Two of them reported that frontline ED staff used their own judgment or “intuition” to determine when/whom to screen.[50,51] Fourteen additional studies mentioned that implementation adaptations were made (eg, who could conduct screening was broadened, changes were made to the screening tool, clinics standardized the introduction to the screening tool[41,63,71]), but lacked details on what was changed, why, or what effect the modifications had on screening implementation outcomes. Five descriptive studies reported that having a standardized process for screening helped to normalize screening for patients and improved integration in the clinical workflow.[41,52,63,68,72]

Five of the 32 studies described the time it took to conduct screening (15.6%).[39,43,53,59,60] Two studies using an experimental design to increase screening in pediatric resident physicians; both reported that screening typically added less than 2 to 5 minutes to visits.[43,60] One descriptive study compared time to complete screening by modality, reporting that on average it took just more than 9 minutes for adult ED patients to self-administer a screening tool by Chatbot versus less than 7 minutes when screening was completed as an online survey.[59] The Chatbot was preferred by patients with low literacy and reduced ED personnel time.[59]

Although some studies provided information about who conducted screening, only 1 descriptive study directly compared the impact of different screening workforces on a nonreach or nonadoption implementation outcome.[61] This study was based in an obstetrics clinic and found that patients were more likely to disclose social risks when screened by CHWs versus RNs.[61]

Two studies looked a modality of screening. Both were based in EDs and compared the influence of different screening modality on disclosure rates or experience of care.[59,62] One randomized trial in a pediatric ED found that tablet-based screening had higher social risk disclosure rates compared with face-to-face screening;[62] the other descriptive study found that the aforementioned Chatbot improved screening experience in adult patients with low literacy who needed additional assistance completing screening.[59]

Two of 32 studies described the financial costs of screening (6.3%).[61,66] One estimated costs calculated based on qualitative interviews with CHC leaders and found that cost varied considerably by workforce involved in screening program planning, training, development, and implementation.[66] A second study (the aforementioned obstetrics-based study) reported that it was less expensive to have CHWs conduct social screening than RNs.[61]

Maintenance

Only 1 of the 42 studies in the review reported screening maintenance outcomes (2.4%) (Table 3 and 4). This study used an experimental pre-/post-design without a comparison group. Over the 21-month period after a social screening educational intervention, the study found a significant drop in pediatric residents' screening rates of hospitalized patients.[40] The median duration of continued screening was 8 months.[40]

Discussion

Based on the recent growth in both interest and activity around social screening in the US health care sector,[2–4] it is an important time to examine and identify evidence gaps related to screening implementation. In this systematic scoping review, we found 42 articles that described outcomes related to screening implementation. Despite the number of studies, the evidence on implementation does not yet clearly indicate which approaches to screening are most feasible and sustainable in busy clinical settings. This is in part because the existing studies were primarily cross-sectional, descriptive, and involved small sample sizes. No articles on reach or maintenance included a comparison group. Only 1 article on adoption and 2 articles on implementation used a comparison group.[40,60,62] These design limitations, along with the variability in implementation approaches across studies, limit the generalizability of findings. We can nonetheless use this synthesis to highlight topics where future research is most needed to fill outstanding knowledge gaps.

There is markedly little evidence in the existing literature on screening equity, including unanswered questions around how different implementation strategies affect implementation outcomes in different populations and settings. This is striking given the assumption that social screening initiatives are anticipated to increase health care teams' awareness of patient social risks that adversely impact health and consequently to lead to activities to decrease social risk or otherwise accommodate risks in ways that will improve health outcomes and health equity.[7–9] In the 5 studies that evaluated screening by patient demographic characteristics like race, ethnicity, and language, screening rates differed by race/ethnicity but no consistent patterns were identified,[31–33,36,37] and screening was lower among patients who preferred to speak Spanish.[33,36] In addition, interviews from 2 ED-based studies reported frontline staff may be influenced by their own biases in determining which patients to screen.[50,51] Prior research has demonstrated how provider bias can negatively impact the delivery of care and health outcomes.[73] Because screening is often linked with interventions, similar practices in social screening have the potential to worsen disparities. No studies in this review explicitly examined strategies to improve rates of screening across different race/ethnic/language groups.

The most frequently cited implementation barrier to screening was time, though administration time differed by tool and screening modality. Studies reported a wide range of time required for screening (1 to 9 minutes). Even at the low end, the additive effects of these screenings across a clinic day and/or in conjunction with multiple other screening intake requirements could be substantial for clinical team-administered surveys. There were few data on if/how time for screening differs across diverse patient populations (eg, populations who prefer a non-English language) or how to reduce the burden of screening administration time across patient populations, though 1 descriptive study suggested that device-assisted screening may reduce screening burden in patients with low literacy.[59]

The lack of research on screening time relates to the overall inadequate psychometric and pragmatic property testing of available screening tools.[2,15] Although social screening tools are frequently referred to as "validated" in the literature, none that we are aware of meet gold standard tool development/testing standards.[2,15] Given the recognition that time is a frequent barrier to screening, some health care systems are experimenting with a single-item prescreener.[74] Additional work is needed to compare both the validity/reliability of and the implementation of different length tools, including the possibility of a single-item screener.

We found very limited evidence on implementation design elements, for example, screening workforce or screening modality, that can improve reach, adoption, or maintenance of screening. For instance, although few studies included CHWs, 3 descriptive studies suggested that including CHWs can positively influence screening reach, patient risk disclosure, and cost efficiency.[41,61,63] Other studies, including 1 randomized trial, indicated that new technologies, for example, digital device-assisted screening, also might have a positive role in facilitating social screening reach and risk disclosure.[59,62] Both screening workforce and screening modality should be the subject of future rigorous and comparative effectiveness evaluations. These types of studies should be conducted in settings serving diverse patient populations and with limited staff capacity, where more support is essential to achieving equitable screening implementation and improving patient experiences with screening.

Finally, several studies, including those using experimental designs,[40,43,44,46] suggest that health professional education/training and continuous quality improvement projects can positively impact clinician/staff adoption of screening practices. These findings are consistent with results of a prior systematic review that found health professional education/training can positively impact provider perspectives and behaviors related to social screening.[26] Existing social screening implementation guidelines and best practice recommendations include an emphasis on continuous workforce education/training.[32,75]

Limitations

This review should be interpreted considering its limitations. First, this is a systematic scoping review, which by design is intended to be a preliminary assessment of the evidence on a topic.[76] A scoping review was appropriate given that this is the first attempt to evaluate the evidence on social screening implementation[76] and the rapid recent growth in both social screening and related research. Due to study heterogeneity, findings were challenging to synthesize and may not be generalizable. Second, the review was limited to peer-reviewed studies published in academic journals between January 2011 and February 2022. It is possible that we missed relevant gray literature in our review and/or that relevant research has been published since then. Third, this review focused on screening, not health care teams' response to identified social risks, which can include using sharing decision making to adjust medical care and connecting patients with resources (ie, assistance). This was by design, to concentrate our scoping review on 1 aspect of social and medical care integration. We would like to acknowledge, however, that there are many reasons to screen individual patients for social risks.[9] We focused on screening reach, adoption, implementation, and maintenance as a first step in understanding the potential impacts of social screening interventions.

Conclusion

Despite an increasing number of efforts to integrate social screening into the delivery of health care, few studies have compared different approaches to sufficiently guide best implementation practices, for example, practices that maximize screening reach, adoption, and maintenance in different clinical settings. Many opportunities exist to improve implementation research in this area. These should begin by surfacing facilitators and barriers to screening efforts and move on to comparing different implementation strategies, including how different strategies may affect populations experiencing socioeconomic marginalization, racism and discrimination, and other structural/systematic barriers to health that may benefit most from social interventions. As payers and health care systems contemplate quality metrics for social screening, elevating what works/does not work and for whom can help to avert unintended harms of future social screening efforts.

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Study authors have full access to and control of study data.

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Appendix.

Database search details

PubMed search strategy (n = 6157)

Concept 1: Health care-based screening

("survey"[tiab] OR "questionnaire"[tiab] OR "measurement"[tiab] OR "instrument"[tiab] OR "screen*"[tiab] OR "tool"[tiab])

AND

Concept 2: Social risk factors

("Social Conditions"[tiab] OR "social risk*"[tiab] OR "SDOH"[tiab] OR "determinants of health"[tiab] OR "structural determinant*"[tiab] OR "social factor*"[tiab] OR "behavioral determinant*"[tiab] OR "social determinant*"[tiab] OR "social need*"[tiab] OR "basic needs"[tiab] OR "basic need" [tiab])

AND

("English"[Language] AND 2011/01/01:2021/08/08[Date - Publication])

Embase search strategy (n = 4564)

Concept 1: Health care-based screening

('survey':ab,ti OR 'questionnaire':ab,ti OR 'measurement':ab,ti OR 'instrument':ab,ti OR 'screen*':ab,ti OR 'tool':ab,ti)

AND

Concept 2: Social risk factors

('Social Conditions':ab,ti OR 'social risk*':ab,ti OR 'SDOH':ab,ti OR 'determinants of health':ab,ti OR 'structural determinant*':ab,ti OR 'social factor*':ab,ti OR 'behavioral determinant*':ab,ti OR 'social determinant*':ab,ti OR 'social need*':ab,ti OR 'basic needs':ab,ti OR 'basic need':ab,ti)

AND

[english]/lim AND [1-1-2011]/S.D. NOT [08 to 09-2021]/S.D. AND ([embase]/lim OR [medline]/lim)