Workforce Models to Screen for and Address Patients' Unmet Social Needs in the Clinic Setting: A Scoping Review

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Abstract

Objectives: While healthcare organizations increasingly aim to address the social determinants of health (SDOH) in the clinic setting, there is little guidance on which staff are best equipped to assume this role. The present study is a scoping review of the peer-reviewed literature to characterize workforce models used to screen for and respond to patients' unmet social needs in ambulatory settings. **Methods:** Four online databases were used to identify papers published until February 2021. Eligible articles were original research studies or systematic reviews that described the implementation of a standardized assessment for multiple SDOH domains and resulting activities to respond to individual patient needs (eg, referral to community resources) in ambulatory care settings. **Results:** Of the 1569 articles identified, 65 met study eligibility criteria. Majority of studies had observational study designs (11% were randomized control trials). For screening-related activities, more articles reported using traditional healthcare staff (51%), such as medical providers, medical assistants, and front-desk staff, than social care staff (32%), such as social workers and student volunteers. In contrast, for response-related activities, more articles reported using social care staff (88%) than traditional healthcare staff (60%). While we found wide variations in specific team configurations and training for the roles, social care staff generally provided more intensive forms of assistance than traditional healthcare staff. **Conclusion:** While this review demonstrates the breadth of models for building or deploying a workforce to integrate health and social care, it also identifies the need for rigorous research on workforce development, implementation, and effectiveness.

Keywords

scoping review, social determinants of health, workforce, screening, ambulatory care

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Introduction

A growing evidence base has illustrated the impact of the social determinants of health (SDOH) on health outcomes.[1,2] According to the World Health Organization, SDOH encompass a broad set of economic, social, and political forces that shape the conditions in which all people live.[3] The United States Healthy People 2030 initiative organizes SDOH into 5 broad categories: economic stability, education, social and community context, health and health care, and neighborhood and built environment.[4] Downstream consequences of adverse SDOH at the patient-level include social needs associated with negative health outcomes, such as food insecurity, housing instability, and lack of transportation.[5,6] A multi-sector group of stakeholders including healthcare professional organizations, state governments, and federal agencies have called for action to screen patients for their unmet social needs and provide assistance within healthcare settings.[7-13] Screening activities often rely on standardized screening tools that can be self-administered on paper or

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tablet, or orally by clinic staff.[14,15] Assistance activities can include connecting patients with on-site clinic services (eg, food boxes), community-based organizations (eg, food pantries), and government benefits (eg, food stamps).[16]

While there has been emerging evidence on the implementation and effectiveness of interventions to identify and address patients' unmet social needs in the healthcare setting,[17,18] a recent National Academies of Sciences, Engineering, and Medicine (NASEM) report revealed there is little evidence on the types of workers that are used most frequently and in which settings, the specific roles of individual staff in interprofessional teams, and the training components for each workforce model.[19] The purpose of this scoping review of the peer-reviewed literature was to characterize the workforce models in ambulatory care settings to screen and respond to patients' unmet social needs. Specifically, we aim to describe the types of staff and combinations of staff employed in diverse settings, relevant activities conducted, and staff training provided to support workers in their role. This review seeks to be a resource for practitioners and administrators working to introduce or refine social needs interventions in their clinics and to help researchers identify areas for future workforce research.

Methods

We followed scoping review methodology and the PRISMA-ScR reporting guidelines which include identifying a research question; identifying relevant studies; study selection; charting the data; and collating, summarizing, and reporting the results.[20,21] While not formally registered, the review protocol can be requested from the corresponding author.

Information Sources and Search Strategy

To identify relevant articles, we searched the databases PubMed, Web of Science, CINAHL, and the Social Interventions Research and Evaluation Network (SIREN) Evidence and Resource Library for peer-reviewed literature published until February 2021. The search strategy was drafted collaboratively by the authors and received guidance from university librarians. Articles from the search of each database were first imported into Endnote[22] and then imported into Covidence,[23] to remove duplicates across databases.

Our search strategy consisted of terms from 3 main categories: the topical domain (the social determinants of health and unmet social needs), the intervention (screening for and responding to unmet social needs), and the setting (ambulatory care) (Supplemental Table S1). We then hand-searched reference lists of relevant articles to identify additional papers.

Eligibility Criteria

Included in the review were (1) peer-reviewed original empirical research or systematic reviews, (2) published in English, that (3) described the implementation of a standardized assessment of social needs (eg, using a structured screening tool) and response for multiple unmet social needs (eg, providing assistance to connect to relevant social care resources), and (4) were conducted in ambulatory, clinic-based care settings. Our review focuses on studies that screened for 2 or more domains in alignment with broader policy efforts at the state and national levels.[13,24]

Articles were excluded if (1) service delivery took place in inpatient, emergency, non-clinical community-based, or home-based settings; (2) the intervention only included screening for a single domain (eg, housing); or (3) classified as opinion, editorials, guidelines, descriptive studies on the prevalence of social needs without intervention to address them, descriptions of care practice without any quantitative or qualitative data, or study protocols.

Selection of Sources of Evidence

Two team members (SS, JPB) independently conducted a title and abstract screen according to our inclusion and exclusion criteria. We resolved discrepancies in article eligibility until consensus was reached. One team member (SS) then assessed all eligible articles for study inclusion at the full-text level. A second team member (JPB) evaluated any article for which eligibility was not clear and consensus was reached between reviewers.

Data Charting Process and Data Items

A data-charting Excel template was developed by 2 reviewers to determine which variables to extract. One team member (SS) extracted data from all articles that met inclusion criteria. Data were obtained on study characteristics (study design, institutional and geographic setting, patient population), and workforce components. Workforce model components were loosely informed by the World Health Organization's Human Resources for Health (HRH) Action Framework and the previously mentioned NASEM report.[19,25] We chose to abstract the type(s) of worker used for screening and response to unmet social needs, activities conducted by workers, and training. Another team member (JX) conducted data extraction for a random sample of 20% of the included articles for data validation, revealing a 79% agreement. Each discrepancy was reviewed and resolved by consensus, and the data extraction tables were revised accordingly.

Synthesis of Results

With input and review from the full team, 1 team member (SS) first organized articles by study design and summarized

by geographic setting, institutional setting, and patient population targeted. Articles were then grouped by modes of social needs screening, response activities, and training activities, and reported by type of worker used.

Type of worker was further synthesized in alignment with the NASEM report, which categorizes the types of workers that can be used for identifying and responding to social needs as (a) the traditional healthcare workforce, and (b) the social care workforce.[20] The traditional healthcare workforce consists of clinical staff (eg, doctors, advanced practice providers, nurses, medical assistants) and front-desk/administrative staff. The social care workforce consists of a broader mix of workers with various levels of training, and includes both paid roles (eg, social workers, case managers, patient navigators, patient advocates, community resource specialists, community health workers, etc.) and volunteers.

Results

Selection of Sources of Evidence

After duplicates were removed from 1725 articles identified, there were a total of 1569 unique citations. Based on screening the title and abstract, 1364 were excluded and 205 full text articles were retrieved and assessed for eligibility. Of these, 65 studies were considered eligible for this review (Figure 1).

Characteristics of Sources of Evidence

Of the 65 papers included in the review,[26-90] only 7 reported using randomized control trial designs[26-32] (Table 1). The remainder reported using observational study designs (eg, pre-post studies, feasibility studies, pilot studies).[33-90] Fifty-eight studies were conducted with primary care patients,[29-31,33-70,72-74,76,78-89] 4 took place in a specialty clinics,[32,71,75,77] 1 took place in urgent care,[27] and 3 took place across multiple settings (eg, primary, specialty, and urgent care).[26,28,90] Majority of studies reported including academic sites (n = 40),[29,34-39,41-44,47-59,62,63,65,66,71,72,75,77-80,82,84,85,89,90] including urban sites (n=48),[26-30,32,34-56,61-63,65-68,71,72,75,77,79-81,83,87-90] and including the pediatric and adolescent population (n=40).[26-30,35-39,43-45,47,51-53,55,56,59,61,62,64,66,68-70,72-76,79-83,85,89,90]

Workforce Models

All included studies were required to both identify by screening and respond to patients' unmet social needs. To describe the structure of workforce models performing these activities, studies were first sorted by mode of administration used for screening. We found 37 studies used self-administered

screening with patients,[29,30,32,34,41,42-46,48,52-54,56,59,61,62,64-66,68,69,71-73,75-77,79,80-84,86,87] 24 studies used clinician-administered screening,[26-28,31,33,35-40,47,49-51,57,60,63,74,78,85,88-90] 3 studies used both,[55,58,70] and 1 study did not mention the mode screening administration[67] (Figure 2). We then categorized the workforce associated with each screening administration type and the roles who responded to identified needs. The 65 studies reviewed used many different arrangements described below.

In summary, for screening-related activities, 33 studies included the traditional healthcare workforce, such as clinical and front-desk staff,[35-41,44-48,52,55,58,61,62,64,66,69,70,72,73,75-77,79,83,84,86,87,89,90] 21 included the social care workforce, including paid and volunteer staff,[26-28,31,33,40,43,49-51,53,57,60,63,72,74,78,80,82,85,88] 7 included research staff,[29,30,32,65,67,68,71] and 6 did not mention the specific type of worker.[34,42,54,56,59,81] For assistance-related activities, 39 studies included the traditional healthcare workforce,[29,30,35-48,53-56,59,61,62,64,66,68,69,72,73,75-77,79-81,86,87,89,90] 57 included the social care workforce,[26-28,30,31,33-37,40-57,59-67,69,70,72,74-90] and 4 included research staff.[32,65,68,71]

Screening and Responding to Unmet Needs

Self-administered. Of the 37 models that use self-administered screening, 21 used front desk staff or medical assistants to give patients a paper form or tablet to complete the screening questions at check-in or during registration, or had medical assistants distribute the screen while rooming a patient.[41,42,45,46,48,52,61,62,64,66,72,73,75-77,79,83,84,86,87] In some models, after patients completed the screener, a medical assistant, nurse, or volunteer documented the screen in the electronic health record and/or transported the screen on paper to another provider.[41,46,48,61,75,79,87] Two models included nurses in distributing self-administrated screening surveys.[44,73] In 3 articles, resource specialists used a web-based platform on laptops to administer an social needs screen that allowed patients to choose problems for assistance and referral agencies.[43,53,80] In 1 article, navigators administered the screening tool.[82] Six studies used research assistants to provide patients with paper screening tools.[29,30,32,65,68,71] Six articles did not report the workforce for self-administered screening.[34,42,54,56,59,81]

In 10 of 37 models that used self-administered screening, the medical assistants, nurses, navigators, resource specialists, and research staff who provided patients with the screening form also reviewed the screen to provide assistance.[32,43,53,65,68,69,71,73,80,82] While these staff were the first to provide assistance to patients, many still referred patients to other staff for additional assistance.[43,53,65,68,69,80]

In the remaining 27 articles, the workforce that distributed the screen to the patient differed from the workforce that reviewed the screen and responded to the patient's need(s). In 5 articles, a paid or volunteer social care worker was the first person to review a screen and provide
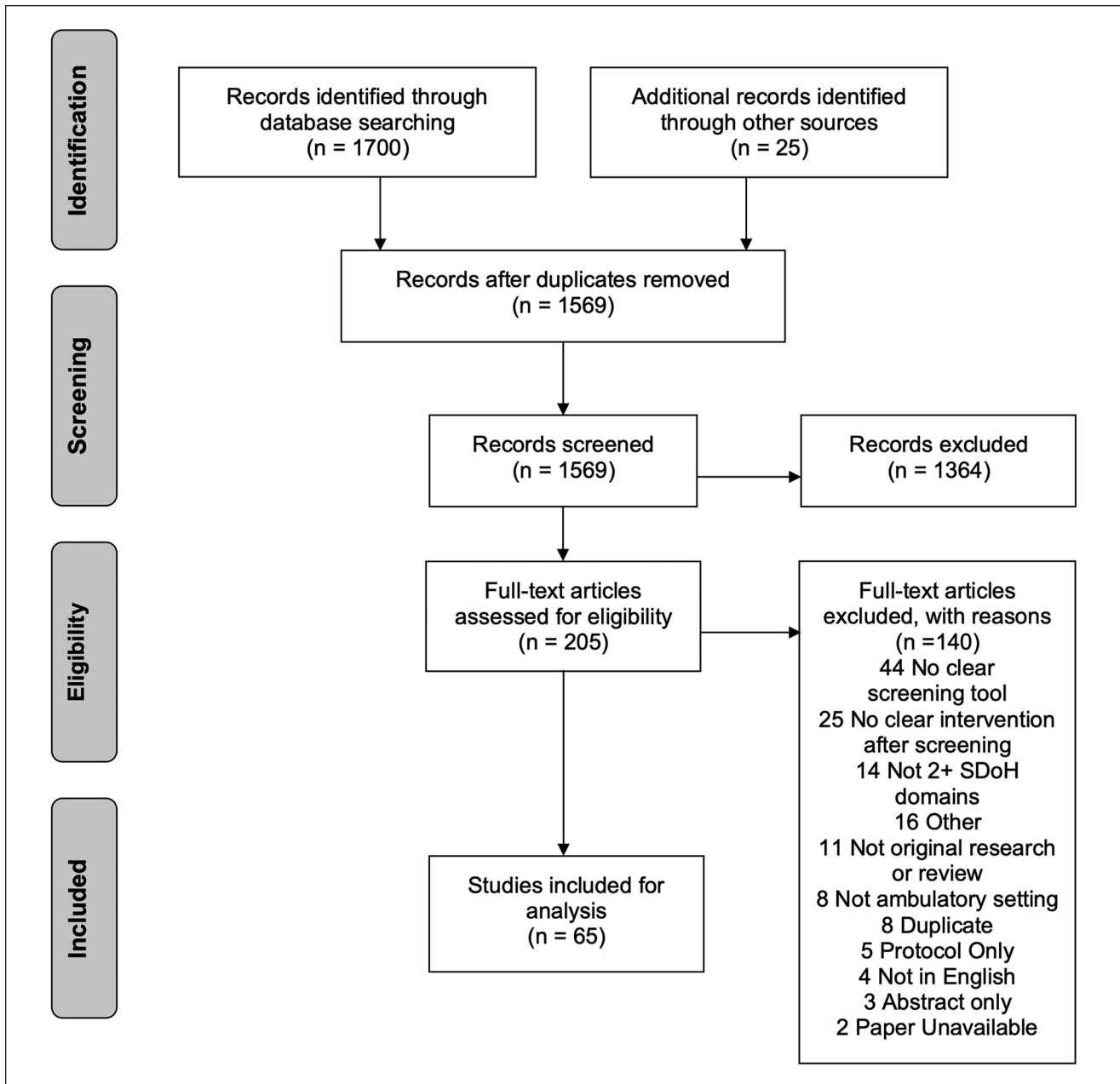
Figure 1. PRISMA flow diagram.

assistance.[34,41,46,83,84] In 22 articles a medical provider or resident was a primary reviewer and responder to the screen: in 1 article residents were the *only* workers reported to be involved in assisting patients in response to the screen[29]; in 5 articles medical providers or residents were the primary responders but had the option of escalating to a social care worker (eg, care coordinator, patient navigator, health advocate, etc.)[30,44,45,48,61]; and in 16 articles medical providers or residents only reviewed the screen and would always refer patients to a paid or volunteer social care worker to assist the patient with their needs.[46,52,54,56,59,62,64,66,69,75-77,79,81,86,87]

In 1 study, an interdisciplinary medical team reviewed the screen before referring patients to specific paid or volunteer social care staff.[42]

Clinician-administered. We defined clinician-administered screening to include verbally asking questions from standardized paper forms, electronic-health record flowsheets, and through screening mnemonics. Of the 24 studies that included clinician-administered screening, 1 used medical providers to screen patients,[37] 7 used medical residents,[35-39,89,90] 1 used a combination of clinical and

Table 1. Article Characteristics.

Study design	Geographic setting	Institutional setting	Patient population
Randomized control trial	Urban[26-30,32] Not mentioned[31]	Academic primary care clinic[29] Safety-net urgent care clinic[27] Community health center[30,31] Women's health clinic[32] Multi-setting[26,28]	Pediatrics[26-30] Adults with depression[31] Women with depression[32]
Difference-in-difference/quasi-experimental	Urban[34] Not mentioned[33]	Academic primary care clinic[34] Integrated health system[33]	Adults[34] Adults with predicted high utilization[33]
Pre-post with control	Urban[35-37]	Academic primary care clinic[35-37]	Pediatrics[35-37]
Observational studies (eg, pre-post, feasibility studies, pilots)	Urban[38-56,62,63,65-68,71] Multi-setting[61] Not mentioned[57-60,64,69,70]	Academic primary care clinic[38,41-44,47,48,51-54,56,59,63,65] Academic women's health clinic[71] Private primary care clinic[70] Integrated health system[60] Community health center/ federally qualified health center[40,45,46,61,68,69] Academic-federally qualified health center[39,57,62,66] Unspecified primary care clinic[64,67] Multi-primary care setting[49,50,55,58]	Pediatrics[38,39,44,47,51,52,56,59,61,62,64,66,68-70] Adolescents[43,53] Adults[42,46,48,54,58,65,67] Elderly Hispanic adults[57] Pregnant women[40] Black women[49,50] Women with depression[71] Multiple populations[45,55] Not mentioned[41,60,63]
Quality improvement	Urban[72,75,77,79] Suburban[76] Rural[73] Not mentioned[74,78]	Student-run free clinic[78] Federally qualified health center[74] Rural health clinic[73] Academic primary care clinic[79] Academic-community health center[72] Academic specialty clinic[75,77] Integrated health system primary care clinic[76]	Pediatrics[72-74] Children with sickle cell disease[75] Adults[78] Adult women[77] Multiple populations[76,79]
Qualitative	Urban[80,81,83,87] Not mentioned[82,84-86]	Academic primary care clinic[80,82,84,85] Public primary care clinic[83] Community health center[81,86] Integrated healthcare system[87]	Pediatrics[80,81] Adolescents[80] Adults[84] Multiple populations[83,85] Not mentioned[86,87]
Case study	Urban[88,89] Multi-setting[90]	Academic primary care clinic[89] Federally qualified health center[88] Multi-setting[90]	Pediatrics[89] Adults[88] Multiple populations[90]

social care staff (eg, nurse, social worker, medical assistant),[40] and 15 used paid social care staff (eg, case managers, community health workers, navigators) or volunteers.[26-28,31,33,49-51,57,60,63,74,78,85,88]

In the 8 models using medical providers or residents, they either (1) assisted patients directly through community resource referrals,[38,39] (2) provided community resource referrals with an option to escalate to a social worker or an on-site medical legal partnership,[36,37,47,90] or (3) directly referred patients to social work or the onsite medical legal partnership without providing community resource

information themselves.[35,89] In the 15 models that used social care staff or non-physician clinical staff to administer screenings, the same worker who conducted the screening was the same worker to provide initial assistance to patients,[31,36,40,41,44,55,56,58,61,67] with 2 studies allowing for additional follow-up from separate student volunteers.[78,88]

Hybrid models. Three studies described using both self-administered and clinician-administered screening.[55,58,70] For example, in 1 model, front desk staff provided paper
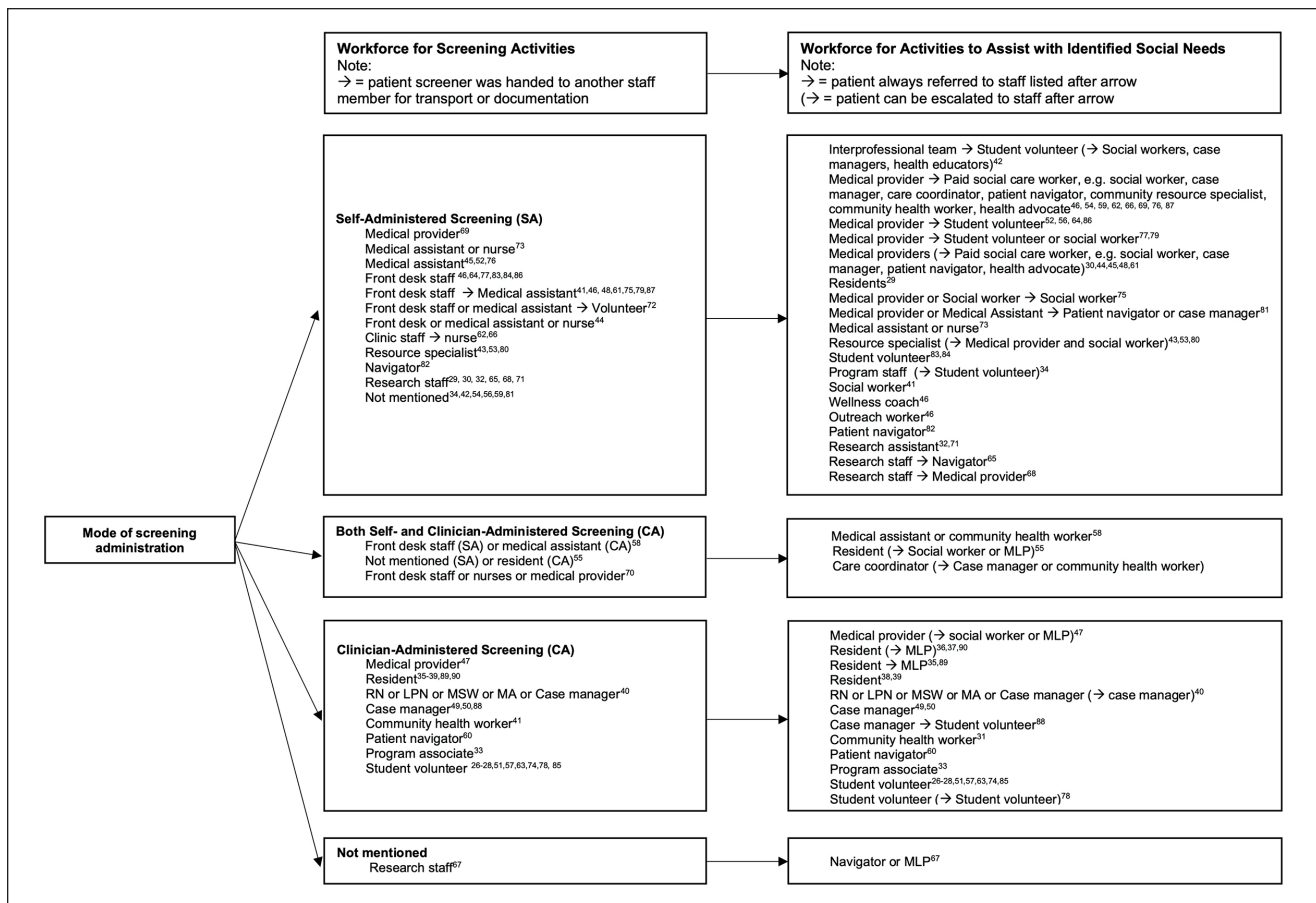
Figure 2. Summary of types of workers deployed to identify and respond to unmet social needs.
Abbreviations: LPN, licensed practical nurse; MA, medical assistant; MLP, medical legal partnership; RN, registered nurse.

screeners to patients for self-administration, and medical assistants offered screening verbally to accommodate patients with low literacy.[58]

Response Activities

After screening, workers used a variety of options to respond to patients' identified social needs (Figure 3). Six response activities and combinations were identified and inductively categorized according to intensity of activities by time and effort by personnel. The 6 activities from lowest to highest intensity were to: (1) refer patients to another clinic staff member for additional assistance without a defined approach for continued follow-up,[35,42,52,54,56,59,62,64,66,72,76,77,79,86,87,89] (2) provide patients with resource lists for community-based organizations or government services organized by SDOH domain (eg, food or transportation),[29,39,58,65,68,73,78] (3) provide patients with both resource lists and referral to other staff for more tailored support,[30,34,44,45,47,48,61,69,75,81] (4) provide patients with both referral to other staff and immediate navigation services, such as directed referrals or support to complete applications for services with patients,[36,37,40,55,70,90] (5) provide navigation support services,[30,35-38,40-48,53,55,58,59,61,62,65-68,70,72,74,76-81,83,87-90] or (6) provide extended navigation services with follow-up of patients after the initial encounter to support follow-through.[26-28,31-34,42,49-52,54,56,57,60,62-64,66,69,71,75,77,82,84-86,88]

Activities of the traditional clinical workforce such as physicians, nurses, and medical assistants tend to be less intensive activities (Figure 3). For example, medical providers and residents mostly provide referrals to other staff and/or resource lists.[29,30,35,39,44,56,47,48,52,54,56,59,61,62,64,66,69,72,75-77,79,81,86,87,89] Similarly, nurses and medical assistants mainly referred to other staff of provided resource lists.[58,73,81] In contrast, the social care workforce from more well-established roles such as case managers, social workers, and community health workers, to the newer, specialized roles such as student volunteers and community resource specialists almost exclusively conducted activities related to navigation or extended navigation.[26-28,30,31,33-37,40-67,69,70,72,74-90] Specifically, social workers were the most common workforce for navigation activities,[30,41,42,44,47,55,59,61,62,66,72,76,77,79,87] and student volunteers were the most common workforce for extended navigation.[26-28,34,42,51,52,56,57,63,64,77,84-86,88] In
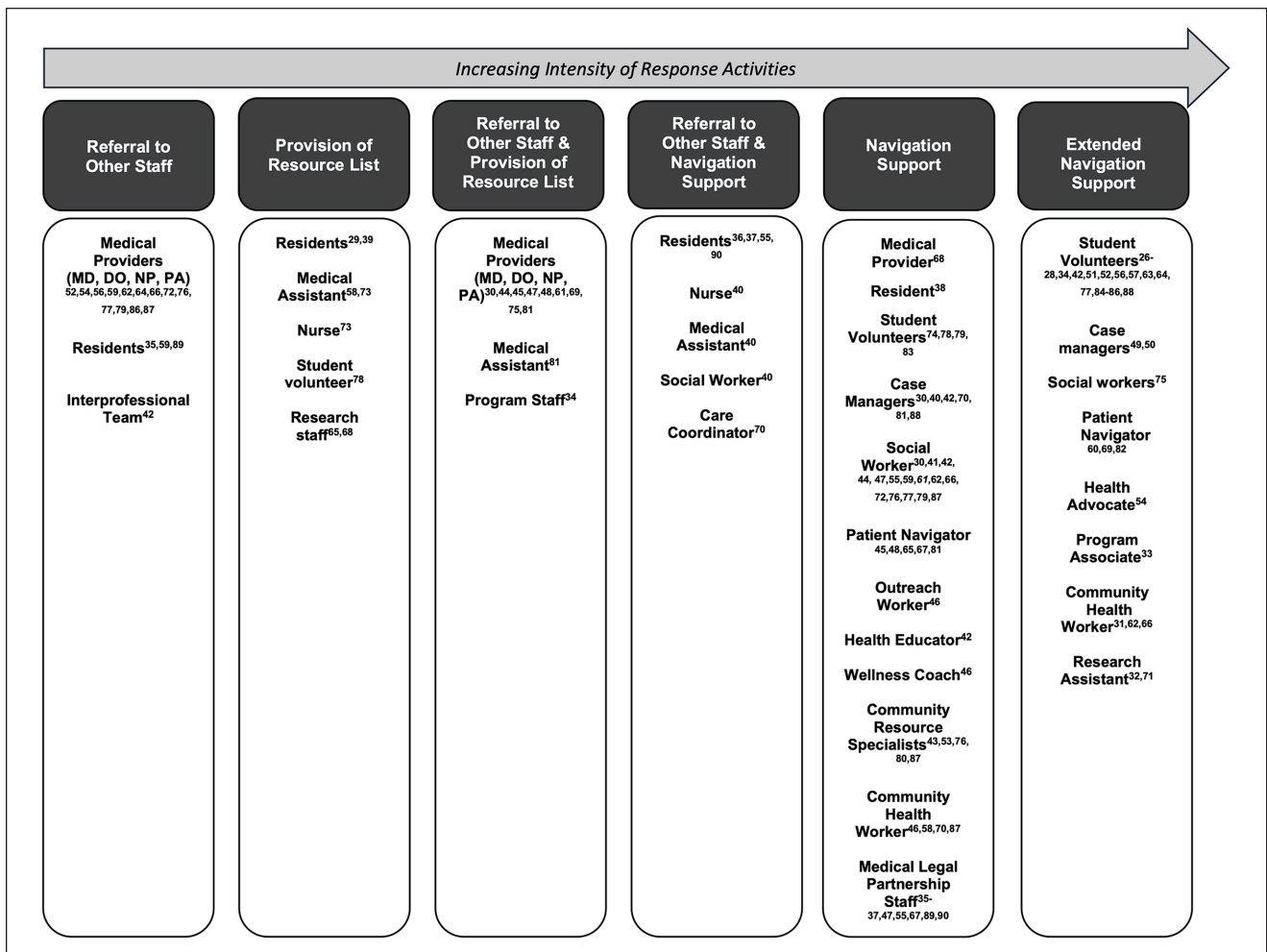
Figure 3. Variation in response activities and intensity of services provided.

many models, navigation activities were conducted upon referral or escalation request from the clinical workforce that reviewed the initial screening.

Workforce Training

Study descriptions of training were summarized into 4 categories: in-person didactic training, online-training/video-based training, skills-based training, and experiential-learning. Training modes were either reported single component (n=11, eg, only in-person training)[29-31,39,44,46,48,57,60,72,75] or multi-component (n=17, eg, in-person training and skill-based training).[28,35-38,42,47,49,50,61,70,74,86,88-90] Of note, 37 studies did not explicitly report how staff were trained to implement the program.[27,32-34,40,41,43,45,51-56,58,59,62-69,71,73,76-85,87]

Ten articles only reported using in-person didactic training[29-31,39,44,46,48,57,72,75]; however, delivery could vary from 20-min informational meetings[29] to 3.5 hour lectures followed by discussion.[35] Four studies used online-learning or videos to supplement other modes of instruction.[36,37,61,70] Online-learning included modules on different SDOH domains such as food insecurity and interpersonal violence, screening practices, and motivational interviewing.[36,37] In-person videos included appropriate and inappropriate examples of screening and responding to social needs.[61] Eight articles reported skill-based training components which consisted of instruction and practice beyond the intervention protocol such as motivational interviewing, cultural competency, trauma-informed, confidentiality, and professionalism.[26,28,49,50,60,61,74,88] Eight studies reported experiential-learning components such as role plays, shadowing, advocacy opportunities, and immersion experiences to visit local community-based organizations.[35,38,42,47,86,88-90]

Discussion

The purpose of this scoping review was to describe the workforce models implemented in ambulatory care settings

to screen and respond to patients' unmet social needs. In reviewing 65 peer-reviewed studies, we show the breath of traditional health care workers and social care workers deployed. Majority of screening-related activities were conducted by traditional healthcare staff, such as front-desk staff and medical assistants. Majority of assistance-related activities were conducted social care staff, such as social workers and student volunteers. We found wide variations by workforce in modes of screening administration, in the specific configurations of interprofessional teams, and in the intensity of responses to identified social needs. Practitioners and administrators can use this inventory to learn from models most relevant to their unique clinical context.

Our findings build on the instrumental 2019 NASEM report on *Integrating Social Care into the Delivery of Healthcare* which included a chapter on workforce.[19] While the NASEM report outlines at a high-level the healthcare and social care workers that could be deployed, our paper systematically examines the existing literature to identify which workers are already screening for and responding to unmet social needs, the specific roles different workers play in interprofessional models, and how they are trained. Through an inductive approach, we created taxonomies for screening activities (clinician-administered, self-administered, and hybrid), response activities (referral to other staff, provision of a resource list, navigation support, and extended navigation support), and training activities (in-person didactic training, online or video training, skills-based training, and experiential-learning activities). This classification system could serve as a foundation from which to design comparative effectiveness research and rigorous clinical trials to examine workforce implementation.

While the vast majority of studies were conducted in academic settings, more research should be conducted to assess the appropriateness and feasibility of social needs interventions in federally qualified health centers and safety-net clinics that have greater resource constrains and higher rates of unmet needs.[91] Similarly, a majority of studies were conducted with the general pediatric population, likely because the American Academy of Pediatrics has encouraged social needs provider screening since the early 2000s.[11] However, recent literature has demonstrated the need to focus on adults, especially vulnerable populations.[91-94]

More rigorous study designs that test the implementation of different workforce models to identify and address social needs are needed. Only 7 articles reported using randomized control trial study designs while the majority were single-arm observational studies. While we found that social care staff frequently provided more intensive forms of assistance than traditional healthcare staff, little is known whether higher-touch interventions are more effective. While future studies must focus on comparative

effectiveness and cost effectiveness of different delivery models,[18] they should not forget to evaluate intervention development and implementation strategies related to workforce. For example, while a recent trial showed no difference in outcomes between providing patients with written resource materials and in-person navigation to address social risk,[27] further investigation of the navigators' training, relatability, and communication skills could help explain the null findings.[95]

Unfortunately, little is known how to train workers to conduct SDOH activities and which approaches are best fit for the different types of workers. The only studies that explicitly evaluated the training components of their models were with those that used pediatric residents,[35-39] possibly due to the growing emphasis on SDOH in post-graduate medical education.[96] Future efforts should test and optimize training materials and certification opportunities for non-physician workers to maximize efficacy.

Limitations

Our review has some limitations. First, we required clear reporting of a structured and standardized instrument or specified approach to social needs screening and this excluded many studies in which informal assessments and open-ended interviews were conducted by community health workers, social workers, and other professionals as part of routine care. Our rationale for requiring a standardized screening instrument was to have a clear path for response. Second, the restriction to peer-reviewed literature may have excluded models disseminated in the gray literature. Third, the anticipated variation in workforce personnel led us to search for models based on the type of intervention and not the workforce. As such, included studies may have underreported details about workforce. Future studies may consider surveying organizations directly to ensure comprehensive documentation of workforce components.

Conclusions

Despite a multi-sector push, there has still been poor uptake of social needs screening and response activities in healthcare settings, in part due to staffing limitations. Health systems must decide whether to hire new staff, onboard volunteers, repurpose existing staff into new roles, or add to the load of existing workers. Depending on the clinic's context, each type of worker has unique advantages and disadvantages related to expertise, patient trust, reimbursement, and integration into existing clinical and information workflows.[97,98] This review demonstrates the breadth of feasible and replicable paths forward for building a workforce to integrate health and social care and identifies areas for future research.

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Supplemental Material

Supplemental material for this article is available online.

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