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ORIGINAL RESEARCH

General Medicine

Evaluating a social risk screening and referral program in an urban safety-net hospital emergency department

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Abstract

Objective: The emergency department (ED) is an opportune venue to screen for unmet social needs and connect patients with social services. This quality improvement study incorporates both qualitative and quantitative data to examine unmet social needs among ED patients and program implementation.

Methods: From September 2020 to December 2021, an urban safety-net hospital adult ED implemented a social needs screening and referral program. Trained emergency staff screened eligible patients for 5 social needs (housing, food, transportation, utilities, employment), giving resource guides to patients who screened positive (THRIVE+). We collected screening data from the electronic health record, conducted semi-structured interviews with THRIVE+ patients and clinical staff, and directly observed discharge interactions.

Results: Emergency staff screened 58.5% of eligible patients for social risk. Of the screened patients, 27.0% reported at least 1 unmet social need. Of those, 74.8% requested assistance. Screened patients reported housing insecurity (16.3%) as the most prevalent unmet social need followed by food insecurity (13.3%) and unemployment (8.7%). Among interviewed patients, 57.1% recalled being screened, but only 24.5% recalled receiving resource guides. Patients who received guides reported little success connecting with resources and supported universal guide dissemination.

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Staff expressed preference for warm handoff to social services. Of 13 observed discharge interactions, clinical staff only discussed guides with 2 patients, with no positive endorsement of the guides in any observed interactions.

Conclusions: An ED social needs screening program can be moderately feasible and accepted. We identified housing as the most prevalent need. Significant gaps exist between screening and referral, with few patients receiving resources. Further training and workflow optimization are underway.

KEYWORDS

emergency department, quality improvement, safety net, social determinants of health, social emergency medicine, social needs screening

1 | INTRODUCTION

1.1 | Background

Social needs, such as housing, employment, food security, and access to transportation, have a well-established impact on health.[1,2] Unmet social needs are known to be associated with increased rates of chronic disease[3,4] and increased use of the emergency department (ED), including unnecessary ED visits.[5–7,34] Although screening and referral programs in ambulatory clinics addressing patients' social needs have been shown to improve linkages with community resources[8–13] and decrease healthcare use,[12] these programs do not account for the particularly vulnerable patient population served by the ED. Because of the nature of the ED as a safety net, researchers identified the ED as an ideal location to identify social needs among patients who might otherwise lack access to social needs referral programs in ambulatory care settings.[7,14,15] There has been growing interest in the past 2 decades in expanding social needs screening and referral programs to the ED.[7,14–25,34]

1.2 | Importance

Although interest in social needs screening has increased, there remains a lack of consistent ED screening patterns. Recent patterns across New England EDs demonstrate a substantial lack of screening for social needs when compared with other screening, with only 39% of EDs consistently screening for at least 1 social need compared with 96% of EDs screening for violence or mental health risks.[16] One recent scoping review found that among 135 related studies, only 2% of EDs addressed food insecurity, and only 3% addressed housing.[20] Among EDs who have begun screening for social needs, research has confirmed the high prevalence of unmet social needs among the ED patient population.[15,17–25] However, there is little consensus about best practices for screening and referral program implementation in an ED setting. Less is known about the effectiveness of such pro-

grams in connecting patients with resources as few studies follow patients after discharge from the ED. One study found that only 7% of patients completed the full process from screening to community service referral.[23]

To optimize the implementation of an ED screening program, more information about stakeholder perceptions is needed. Although prior research has found that patients generally welcomed screening about their housing status in an ED setting,[24] little is known about patients' comfort with assessing other social needs in the ED. One study found patient-centered social needs screening to be acceptable to patients, suggesting such screening to be valuable, even possibly strengthening patient–clinician relationships.[35] Similarly, although 1 study found that the majority of emergency staff endorsed the importance of screening for interpersonal violence,[22] little is known about ED personnel's perceived value of social needs screening in this setting.

In addition, more clarity is needed about barriers to ED screening implementation. In ambulatory care settings, prior studies identified substantial barriers to program implementation, including staff training, time constraints, clinical workflow, and language barriers.[9,13] Research studies implementing temporary social needs screening in EDs suggest that similar barriers likely exist, with additional barriers of illness acuity and unique ED workflow constraints.[15,17–25] High levels of clinician burnout may also be a barrier, as burnout levels among ED physicians and nurses have been exacerbated by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) pandemic.[26–28]

1.3 | Goals of this investigation

This quality improvement (QI) initiative aims to evaluate the general feasibility and acceptability implementing a social needs screening and referral program in an urban, academic, safety-net hospital via a mixed-methods clinical QI investigation. The study qualitatively assesses perceptions of the program and barriers to implementation through semistructured interviews with patients, clinicians, and nurses and

direct observations of clinical encounters in the ED. This study quantitatively characterizes screening rates and connection to referrals. In addition, the authors sought to quantify the prevalence of reported unmet social needs among patients presenting to the ED and patient success in connecting with community resources listed in the provided resource guide.

2 | METHODS

2.1 | Study design and setting

From September 2020 to December 2021, an urban, academic, safety-net hospital implemented a new screening and referral program for unmet social needs among ED patients. This program, known as THRIVE, is an electronic health record (EHR)–based social needs screening and referral program originally developed for ambulatory care to assess 8 social need domains via a self-administered paper-based survey.[9] We adapted THRIVE for the ED to verbally assess patients for the following 5 social need domains: housing, food, transportation, utilities, and employment (see Table 1 for the list of questions). We selected these domains while considering time constraints of asking all potential THRIVE domains and resources available to respond to each domain in the ED setting. For example, ED personnel believed the original THRIVE domain "Do you have trouble paying for medications?" falls more in the scope of ambulatory care.

The THRIVE screening tool additionally asks patients to identify unmet social needs and whether they would like to receive resources for those particular social need domains. Upon request, patients receive resource guides (available in English, Spanish, Portuguese, Haitian Creole, Arabic, and Vietnamese) with contact information for existing community resources specific to their identified needs. We conducted a QI pilot evaluation of the THRIVE ED program. This study received Not Human Subjects Research exemption from the Boston University Medical Center Institutional Review Board given that it was conducted for clinical QI.

2.2 | Selection of participants

2.2.1 | Patients

We targeted adult patients presenting to the ED who are part of the hospital's accountable care organization, Medicaid, or uninsured population (see Figure 1).[29] This method captured adult patients in the safety net and provided a convenience sample of patients to target during initial piloting.

2.2.2 | Clinical staff

We remotely interviewed ED clinical staff (including nurses, residents, and attending physicians) who participated in the ED THRIVE imple-

The Bottom Line

The safety-net emergency department is an opportune venue for social needs screening. A quality improvement study found screening feasible; however, gaps between screening and referral to resources need to be addressed to resolve disclosed unmet social needs.

mentation pilot, either individually or via focus groups, to evaluate knowledge and solicit feedback regarding the pilot.

2.3 | Interventions

Upon patient presentation to the ED, the pilot workflow consisted of an automatic EHR flag to identify eligible adult ED patients with triage nurses verbally administering THRIVE screening questions and manually entering patient responses into the patient's chart. Patients screened positive for THRIVE (THRIVE+) if they endorsed any specific social need. If patients requested resources for specific social needs, the ED clinical staff printed resource guides, which were included with discharge paperwork for patients to refer to after the visit.

We conducted training for nursing staff at the start and 6 months into the study, with an ED nurse leading the second training session. For clinicians, we conducted training during a meeting where all clinicians were in attendance. A separate training was held for ED residents. Through the first year of implementation, clinician champions and nurse champions would provide 1-on-1 reminders of staff roles as needed.

2.4 | Measurements

2.4.1 | Clinical data evaluation

We pulled monthly data reports from the clinical data warehouse to review aggregate counts of completed THRIVE surveys in the adult ED and answer our primary outcome of the study.

2.4.2 | ED patient interview and survey

We developed a survey with closed and open-ended questions using Qualtrics. We pulled patient visit reports from the EHR on a biweekly basis to identify patients who had requested and received resources during their ED visit. We interviewed patients who had been seen in the past 2 to 4 weeks post-ED visit to reduce the potential for recall bias. Patient and clinical staff follow-up interviews began 2 months after the initial implementation. Interviewers recruited patients via

TABLE 1 THRIVE ED domains, questions, and responses

THRIVE domain	Question(s)	Response options
Housing	What is your living situation today?	–I have a steady place to live. –I have a place to live today, but I am worried about losing it in the future. –I do not have a steady place to live (I am temporarily staying with others, in a hotel, in a shelter, living outside on the street, on a beach, in a car, abandoned building, bus or training station, or in a park).
Food	• Within the past 12 months, the food you bought just didn't last and you didn't have money to get more.	–Often true –Sometimes true –Never true
	• Within the past 12 months, you worried whether your food would run out before you got money to buy more.	–Often true –Sometimes true –Never true
	• Is this an emergency, do you need food for tonight?	Yes/No
Transportation	Do you have trouble getting transportation to medical appointments?	Yes/No
Utilities	Do you have trouble paying your heating or electricity bill?	Yes/No
Employment	Are you currently unemployed and looking for a job?	Yes/No
Resource request	Please check the resources you want help with:	• Housing/Shelter • Food • Transportation to medical appointments • Utilities • Job search/Training

Abbreviation: ED, emergency department.
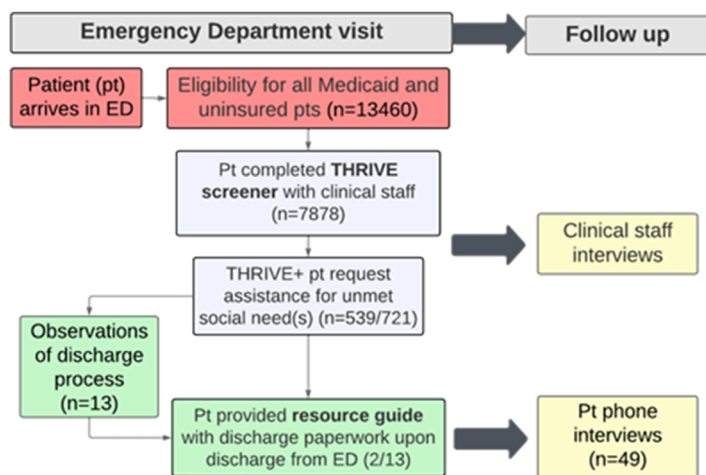
FIGURE 1 ED THRIVE process and quality improvement activities (green and yellow boxes). ED, emergency department, Pt, patient

telephone to conduct a short 5- to 10-minute survey regarding their experience visiting the ED. Questions focused on patient recall of being asked about unmet social needs and by whom, recollection of receiving a resource guide with their discharge paperwork, and whether they had connected with organizations to address an unmet social need since their visit. Interviewers also asked patients about their general perspectives regarding being asked about social needs in the ED setting (see full questionnaire in Appendix 1). Interviewers recorded participant responses in Qualtrics during the interview. No audio recordings were made.

2.4.3 | Clinician interviews/focus groups

We interviewed clinical staff, including emergency nurses, trainees, and physicians. Clinical supervisors directly contacted clinicians by email for individual interviews. We conducted group interviews during scheduled team meetings to solicit feedback from physicians and nurses given staff availability. Questions focused on clinician familiarity with the THRIVE survey and asked about use of the survey and resource guides when interacting with patients (see the full clinician questionnaire in Appendix 2).

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2.4.4 | ED discharge observations

As a response to clinician and patient feedback, we conducted field observations of discharge interactions between emergency staff and patients. We observed any discharges occurring during an observational period, resulting in non-selective discharge observations where THRIVE resource guides were and were not discussed. Observation sessions were 3 to 4 hours in length and covered different ED shifts: morning, afternoon, and overnight. Observations occurred in the same ED section across all sessions. The section of the ED was selected because of higher patient presentation severity and greater patient volume.

One researcher experienced in qualitative observations in healthcare settings conducted all observations to allow for consistency of data collection, using an observation guide to further support consistency. The observer documented the sociodemographic status of the patient and involved staff and completed questions regarding patient–clinician interactions, resource guides, and discharge paperwork handouts. The guide included a section for free text to allow for additional comments to be recorded (see the full observation guide in Appendix 3).

2.5 | Outcomes

The primary outcome of this study was the proportion of completed THRIVE screenings in eligible patients as a quantitative indication of successful program implementation. Our secondary outcomes included proportion of positive screenings among total THRIVE screenings, prevalence of each unmet social need domain among patients with positive screenings, proportion of resource guide dissemination, and emergency clinical staff perceptions of program implementation. From the patient qualitative data, we also examined postdischarge patient recollection of resource guide reception and postdischarge patient success in connecting with resources. The Proctor model guided our initial selection of implementation outcomes, specifically feasibility and acceptability.[36]

2.6 | Analysis

We reviewed qualitative data from observational data and patient and staff interviews using a conventional content thematic analysis[30] of emergent themes regarding patient and staff acceptability of a social needs screening and resource guide intervention. The team held iterative group discussions of emerging themes throughout the data collection period, with adjustments in survey questions after a review of the first month of interview data. We analyzed responses for patient perspectives on being screened, evidence of clinical processes involving THRIVE, and identification of gaps in the referral process. The study team held weekly meetings to discuss barriers and facilitators identified through patient and clinician interviews. We analyzed the discharge observation sessions for interactions between patients and ED personnel, the timing and discussion of social needs screening and resource guide dissemination, and how the after-visit summary documents were highlighted.

EHR reports were generated for monthly aggregate data of total ED visits and patients who had received a THRIVE screen during their ED visit. We identified the total number of eligible patients who did not receive a THRIVE screen.

3 | RESULTS

A total of 58.5% (7878/13,460) of eligible adult patients completed a THRIVE screener in the ED, with 27.0% (2128/7878) of screened patients reporting at least 1 unmet social need. Patients most frequently reported housing insecurity as the most prevalent unmet need at 16.3% (1285/7878), followed by food insecurity at 13.3% (1044/7878) and employment at 8.7% (687/7878) (see Figure 2).

Among patients who screened positive, 74.8% (539/721) requested assistance with unmet social needs. During follow-up interviews, patients reported feeling comfortable with social needs screening in the ED and expected the hospital to subsequently provide assistance to address unmet needs. Of note, these were responses documented by the interviewer in Qualtrics. Patients expressed wanting assistance with contacting agencies that could assist with unmet needs, whether through provision of contact information or warm handoffs to social workers. Patients wanted information regarding shelters and food banks as well as help with transportation to the hospital.

Patients felt it was appropriate to ask about social needs in the ED setting. Many of those interviewed noted that the questions helped to broadly understand an individual's context and general health. For instance, they believed that the questions could help shed light on how individuals are living and what problems they are facing. Patients brought up the current context of the SARS-CoV-2 pandemic and how that may be further exacerbating needs. Patients appreciated that the survey provides a mechanism for proactively asking about patient needs, which they may not disclose without being asked.

Of 49 patients interviewed, 57.1% (28/49) recalled being asked the THRIVE questions during their visit, but only 24.5% (12/49) recalled receiving a resource guide despite EHR documentation indicating otherwise. Of the 12 patients interviewed who recalled receiving resource guides, all reported little success in connecting with the resources provided, primarily because of time limitations or competing priorities. Despite these challenges, patients overall felt positively about universal resource guide dissemination, feeling that the resources could be helpful for patients, even if they were not experiencing acute needs at the time.

In interviews and focus groups, clinicians and nurses reported slight discomfort asking the THRIVE questions but felt it was a necessary part of the intake process to provide appropriate care considering patients' social contexts. For nurses administering THRIVE, the time burden of survey administration was at odds with heavy caseloads and multiple duties. Some staff expressed a preference for a warm handoff or hospital-based social needs hotline in lieu of the printed referral guide, noting that patients often left discharge paperwork behind. Staff
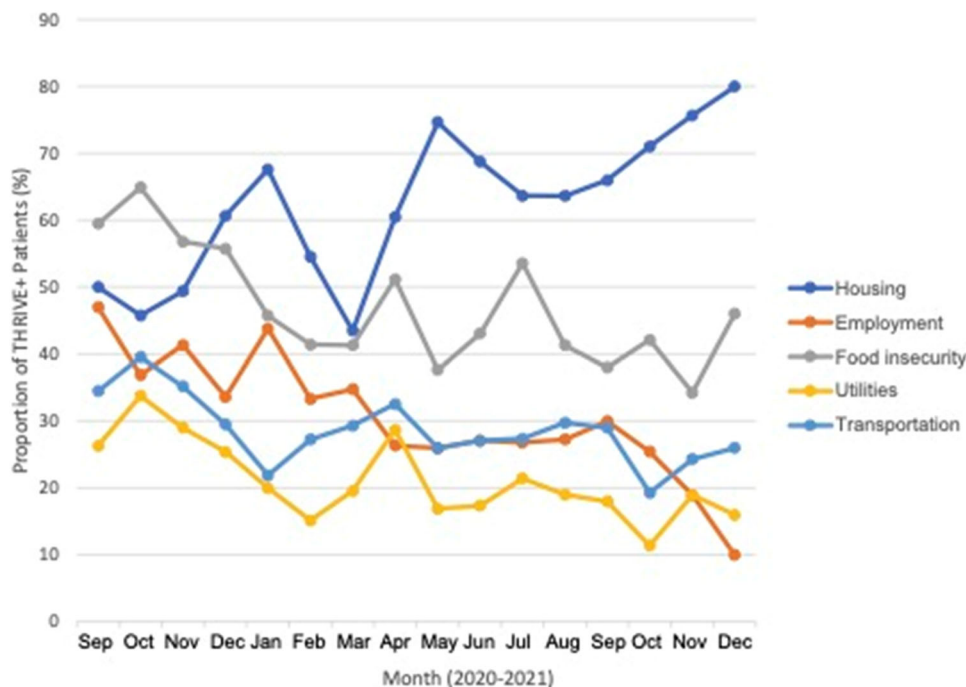
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FIGURE 2 Proportion of unmet social needs among THRIVE+ patients

burnout was also identified as a significant barrier, particularly given the unfolding SARS-CoV-2 pandemic. Pandemic restrictions forced frequent changes in hospital workflows while capacity to care for patients was stretched thin as a result of staffing shortages. In this context, administration of the THRIVE survey was a lower priority for emergency staff, if considered at all.

To follow-up on clinician reports of resource guides left behind and patient reports of non-receipt of resources guides, three 4-hour observation sessions were held in the ED during morning, afternoon, and overnight shifts from November to December 2021 to observe discharge interactions. One researcher directly observed a total of 13 discharge interactions with a time range of 1 to 30 minutes per discharge interaction. Interactions occurred between patients and attending/resident physicians, nurses, and—for 1 interaction—a social worker and in-person language interpreter. Of the observed discharge interactions, the resource guide was only discussed with 15.4% (2/13) of patients and was not positively endorsed in any observed interaction. The researcher did not observe an instance of patients leaving behind after-visit summary paperwork, including the resource guide, during any observation period.

4 | DISCUSSION

This QI initiative found moderate feasibility of a social needs screening and referral program in a large, urban, safety-net ED. Analysis of our primary outcome showed that more than half of all eligible patients presenting to the ED (58.5%, 7878/13,460) completed the screening, suggesting moderately successful program implementation. This analysis found housing as the most prevalent unmet social need reported.

Food insecurity and employment were the next most reported unmet social needs. Interviewed patients were unanimous in stating that it was important to screen for unmet social needs, expressing that screening in the ED would allow their doctors and nurses to better understand social contexts to improve holistic care. Patients saw ED screening as an ideal setting to safely disclose needs and receive resources in a trusted environment.

We identified logistical and emotional barriers to the provision of resources for patients who requested assistance with their unmet social needs. Logistically, staff reported time constraints as a significant barrier. Furthermore, we observed that referral guides were consistently not endorsed and often not provided to patients, as this relied on clinician recall to manually add the resource guide to discharge paperwork. Emotionally, clinical staff expressed the challenge of burnout exacerbated by the region's second wave of SARS-CoV-2 cases, which occurred during this study. As such, it proved difficult to motivate staff to participate in program implementation.

Our analysis found that most interviewed ED patients recalled being asked social need screening questions during their visit. However, only 24.5% recalled receiving a resource guide. This indicates a gap in the screening and referral process. This gap is currently being addressed through several programmatic efforts, including printing and including referral guides in discharge paperwork automatically and streamlining the workflow to eliminate dependence on clinician recall. In addition, we posted THRIVE results to ED public bulletins for staff review and feedback. As a future direction, we are considering universal resource guide dissemination through the automatic printout of resource guides for all eligible patients, regardless of whether needs are reported. We are also exploring the possibility of hiring a dedicated patient navigator in the ED. Prior research demonstrates that navigators assist in

eliminating barriers to care through 1-on-1 interactions.[33] Having a dedicated individual who administers social need screening relieves the burden of survey administration from clinical staff. Ideally, this individual would be closely connected with social work and financial aid services to provide immediate warm handoffs to hospital departments that could directly address any identified needs that arise during screening.

Our study found moderate feasibility and acceptability of an ED social needs screening program, with housing identified as the most prevalent unmet social need for a safety-net population. However, significant gaps exist between screening and referral as well as at the point of discharge, with few patients successfully receiving resource guides. Further staff training and workflow optimization, including automatic resource guide printing and searching for funding for an ED patient navigator, are underway.

5 | LIMITATIONS

Our investigation was a clinical QI initiative and thus limited to our unique ED site. We had a limited sample size for qualitative interviews and observations, including conducting observations in only 1 of 4 units in the ED. Our use of convenience sampling could potentially introduce measurement error or bias in the results, however, this was the most straightforward method to collect data because of the transient nature of patients in the ED. We were unable to examine associations between patient demographics and survey/interview responses given the limitations of our QI project. Findings may be limited in their generalizability to settings and patients seen outside of the adult ED and urban safety net.

AUTHOR CONTRIBUTIONS

CONFLICT OF INTEREST

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.