


## INNOVATIONS IN CLINICAL PRACTICE



# A Hospital-Based Program to Screen for and Address Health-Related Social Needs for Patients Admitted with COVID-19

Snehal Patel, MD<sup>1</sup>, Christopher Moriates, MD<sup>1</sup> , Victoria Valencia, MPH<sup>1</sup>, Karen de la Garza, MD<sup>1</sup>, Ruth Sanchez, MD MPH<sup>2</sup>, Luci K. Leykum, MD, MBA, MSc<sup>1,3</sup>, and Michael Pignone, MD MPH<sup>1</sup>

<sup>1</sup>Department of Internal Medicine, Dell Medical School at The University of Texas at Austin, Austin, TX, USA; <sup>2</sup>Department of Internal Medicine, University of Texas Southwestern, Dallas, TX, USA; <sup>3</sup>South Texas Veterans Health Care System, San Antonio, TX, USA.

J Gen Intern Med 37(8):2077–81  
DOI: 10.1007/s11606-022-07550-0

© The Author(s), under exclusive licence to Society of General Internal Medicine 2022

## INTRODUCTION

Unmet health-related social needs (HRSNs) drive increased healthcare utilization and exacerbate health disparities.<sup>1–5</sup> The COVID-19 pandemic led to severe secondary social impacts in vulnerable communities, including economic uncertainty and exacerbation of unmet social needs such as housing and food insecurity, transportation difficulties, exposure to violence and threats to personal safety.<sup>6,7</sup> These social impacts are often magnified in patients hospitalized for COVID-19, given how the infection affects patients' health as well as their communities and family support systems. Yet few coordinated approaches to supporting vulnerable, hospitalized patients during major public health events have been documented or evaluated in the literature.

Healthcare systems have increasingly expressed an interest in addressing HRSNs and clinicians overall support social need programs, yet significant barriers impede the assessment and implementation of programs addressing HRSNs.<sup>8,9</sup> While literature on screening for social needs among hospitalized patients exists,<sup>10</sup> few publications describe standardized processes and fewer still evaluate their approaches. Given the high proportion of patients in our setting with unmet HRSNs and challenges to comprehensively identifying those needs, we implemented universal HRSN screening of admitted patients with COVID-19 in combination with a coordinated program linking them to appropriate community resources. As described below, our approach was guided by the Model for Improvement.<sup>11</sup>

A number of screening tools for social needs have been published.<sup>12</sup> We performed a review of available tools. We selected the PRAPARE (Protocol for Responding to and Assessing Patients' Assets, Risks and Experiences) tool<sup>13</sup> to

align with parallel efforts at local federally qualified health centers that were adopting this assessment. The PRAPARE screening tool is a standardized questionnaire consisting of a nationally developed set of core and optional measures.<sup>13</sup> Prior to project implementation, our inpatient screening and documentation for HRSNs was inconsistent. We hypothesized that implementation of a standard approach to screening for and tracking HRSNs would allow our inter-professional care teams to develop more effective, contextualized patient care plans to directly impact these needs.

We carried out our pilot program in partnership with an inter-professional team of providers involving physicians/advanced practice providers, medical students, social workers, case managers, nurses, and pharmacists.

## SETTING AND PARTICIPANTS

This intervention focused on clinical teams caring for adult patients with COVID-19 admitted to the internal medicine service on either the general medical or intensive care units. Our setting is a 212-bed urban academic safety-net hospital. At baseline in 2019, approximately 33% of inpatients were uninsured, 11% were covered by Medicaid, and 27% received Medicare.

All patients admitted after March 29, 2020, with COVID-19 based on SARS-COV2 PCR testing with a length of stay of at least 24 h were eligible for screening and social care planning by their care teams. Prior to the COVID-19 pandemic, an inter-professional team led by hospitalists had identified the quality gap and potential benefits of universal screening as part of an institutional quality improvement challenge in 2019. With the onset of the pandemic, the project was refocused on patients admitted with COVID-19. Project implementation was directed primarily by the hospitalist leader (SP) working with a group of self-selected resident physicians and members of the Department of Internal Medicine quality improvement team, supported by executive sponsorship from departmental leaders.

Care teams included Internal Medicine (IM) faculty and residents, medical students rotating on the IM clerkship or

Received September 27, 2021

Accepted March 31, 2022

Published online April 11, 2022

on a Transitions of Care elective,<sup>14,15</sup> and hospital staff, including social workers, nurse case managers, bedside nurses, and pharmacists.

The University of Texas Internal Review Board granted exempt status for data collection and assessment. Patients and care team members were free to decline participation in the screening program.

## PROGRAM DESCRIPTION

This project was initiated prior to the COVID-19 pandemic with the goal of developing a feasible HRSN screening process that could be adopted by our inpatient medicine teams. Between December 2019 and January 2020, one inpatient team with an IM attending, 3–4 residents, and 1–2 medical students piloted PDSA (Plan-Do-Study-Act) cycles to screen patients on a single medical inpatient team for HRSNs using the PRAPARE tool, coordinating with nurses, social workers, and case managers to address any identified needs. The project team performed rapid process PDSA cycles testing timing of distribution of tool to patients; self-completion of tool by patients (versus assisted completion); team member responsible for ensuring tool completion; methods of coordination with social work/case management team; and documentation strategies. The initial strategy was to continue iterations of this process on a single teaching team to develop an effective approach that could then be adopted by our other medical teams.

However, in late March 2020, as we began caring for our first patients admitted with COVID-19, the project team shifted the program goals and approach. Of the first 10 patients admitted with COVID-19, nine identified as Hispanic/Latinx, all of whom spoke Spanish as their primary language; four were concerned about losing housing; and six had no primary care home. In response, we adapted our project to develop a rapid process engaging all stakeholders in a larger-scale roll-out designed to assess and address HRSNs for all patients admitted with COVID-19.

In March 2020, the project lead rapidly convened an inter-professional team consisting of IM and Infectious Diseases physicians, nurses, social workers, case managers, and language interpreters. The team created admission-to-discharge process maps for COVID-19 patients, delineating processes for performing formal HRSNs assessments while patients remained in isolation and mechanisms for addressing unmet social needs.

The program consisted of two key components: (1) documentation of PRAPARE tool screening, and (2) coordinated provision of appropriate resources to all hospitalized COVID-19 patients.

To support HRSN screening, the project lead provided brief, just-in-time training sessions for clinical team members about HRSN screening and processes. Every Sunday, an email was sent to all residents and

attendings rotating on a COVID service with instructions, resources, and processes for performing HRSN screening. The team provided an electronic template version of the PRAPARE Tool that could be copy-pasted into our electronic health record notes. The project team slightly modified the PRAPARE tool to include a question about gender and sexual orientation, revised the income question to include brackets, and added a “trailer or RV” option under “housing.” The lead physician for the project followed up with informal in-person communication with residents on Monday to review the PRAPARE tool and discuss methods for establishing trust with patients. He also engaged medical students who were unable to participate in direct patient care rotations early in the COVID-19 pandemic through a newly designed Transitions of Care elective.<sup>15</sup> Students participating in this elective received a 1-h didactic session at the start of their rotation discussing the importance of HRSNs, how to remotely assess HRSNs over videoconference or telephone using our standardized tool, and how to coordinate with the case management and social work team members to address social needs.

The screening was intended to be performed by any physician on the care team and/or the Transitions of Care medical students. While screening was encouraged soon after admission, it could be completed any time during the hospital stay.

The second key component of the intervention was coordinated provision of appropriate resources. In collaboration with community-based, public, and private organizations, the project team, including social workers, developed resource guides to address unmet social needs and to allow our most vulnerable community members to quarantine and isolate as necessary. All COVID-19 patients received a standard resource packet (available in English and Spanish) detailing food assistance, utilities assistance, housing and rent assistance, mortgage forbearance, eviction prevention, emergency relief funds, transportation assistance, isolation support, respite housing, interpersonal and domestic violence support, mental health support, child care resources, unemployment benefits, and the process for enrollment in local health coverage programs (see Appendix 1 for a consolidated list of frequently used resources). Project team members provided specific referrals, information, and assistance enrolling patients with identified unmet social needs in qualifying programs. For example, for patients identifying housing insecurity, our team assisted with applications for emergency financial assistance, government-sponsored rent and mortgage assistance, and connection with homelessness prevention and rapid rehousing services. In addition, to reinforce the coordination of appropriate resources in response to HRSN screening information, a discharge checklist was provided to assist

teams (Appendix 2). The discharge checklist included an item to review whether HRSN screening had previously occurred, and provided a “last-chance” opportunity to perform screening prior to discharge.

## PROGRAM EVALUATION

We performed a detailed chart review of the first 100 consecutive COVID-19 patients admitted to our hospital between March 29, 2020, and May 13, 2020. These patients were attributed to 10 discharging internal medicine attendings and three critical care discharging attendings. Patient demographics, obtained from chart extraction, are presented in Table 1. Seventy-nine percent of patients identified as Latinx/Hispanic; 62% primarily spoke Spanish; 52% were uninsured and an additional 19% received a health coverage program for Travis County residents with low income called the Medical Access Program (MAP). Table 1 also includes social and structural characteristics for these patients, including current employment status, type of occupation/work performed, and housing type. Nearly half (45%) of patients did not identify a primary care provider (PCP).

The PRAPARE tool was completed and documented in 56 of the first 100 admitted patient charts, per chart review. The completion of HRSN screening varied widely across discharging attending physicians. Two hospitalist attendings and all three discharging critical care attendings did not have a single documented HRSN screening, whereas the other eight attendings completed HRSN documentation, with individual completion rates ranging from 29 to 100%. The physician lead met with participants every 1 to 2 weeks and informally collected feedback on the program. Consistent completion of the tool was observed when the attending on the primary service actively encouraged use of the tool or when the patient was followed by medical students on the Transitions of Care elective.<sup>15</sup> Rates of completion increased after an initial ramp-up period, with HRSN screening documented in only 5 of the first 20 patients (25%), but then achieving a steady performance of 64% overall for patients 21–100. In addition to teams simply not performing the task due to competing demands and/or the assumption that there were not unmet needs to be addressed, reasons for non-completion included rapid clinical deterioration, direct discharge from the critical care team, and death during hospitalization.

The PRAPARE tool identified relevant HRSNs in 64% of this cohort of patients admitted with COVID-19 (Table 2), including housing insecurity in 39%. Targeted information and assistance for addressing specific HRSNs were provided to all of patients who had an identified need on PRAPARE tool screening.

## DISCUSSION

Our pilot program to perform HRSN screening in the hospital was quickly refocused to respond to the COVID-19 pandemic. This resulted in the identification and documentation of relevant HRSNs for hospitalized COVID-19 patients. We noted a high prevalence of housing insecurity. The number of patients identified as housing insecure was much higher than those initially classified as “homeless” on intake, illustrating the additional actionable information and nuance obtained through HRSN screening. Identification of these social needs facilitated the referral to community resources.

We found that despite significant effort invested in providing resources, just-in-time training, and engaging resident physicians, completion of HRSN screening remained dependent on the individual attending at time of discharge, or on having a medical student on the Transitions of Care elective involved in a patient’s care. Our experience suggests that someone on the team other than the attending should be responsible for completing HRSN screening, even if the attending has accountability for ensuring completion. Our program did not include real-time audit-and-feedback to teams, partially due to competing demands and constraints related to the early stages of the pandemic, but this may be an important component for future programs to ensure higher fidelity to the process. Our experience highlights the capacity of hospital care teams to partner with community service providers to address unmet HRSNs. Subsequently, we integrated a community health worker who assesses HRSNs and addresses unmet patient and family needs, resulting in a more reliable workflow.

Our pilot program of HRSN screening for patients admitted during the early stages of the COVID-19 pandemic supports the importance and relevance of systemic HRSN screening in hospitals. Despite our relatively modest overall completion rate (56%), according to informal feedback from participants who engaged in the process, performing screening during hospitalization was not overly burdensome for the clinical teams, and often provided unexpected insights about social needs.

There are a number of limitations with this current report, including a lack of follow-up data tracking whether patients used the resources provided as part of the HRSN process and their overall longer-term outcomes following hospitalization. We are now collecting follow-up data about specific utilization of resources and outcomes as part of our community health worker program. Though we obtained general information about barriers to completion, we were unable to collect specific data about reasons for non-completion at the patient level. The need to rapidly adapt to the COVID-19 pandemic greatly affected our initial implementation and evaluation plans for this intervention, but it also provided a catalyst to more quickly gain buy-in and display

**Table 1 Demographics, Social, and Structural Characteristics of the First 100 Consecutive COVID-19 Patients at a Single Urban Safety-Net Academic Medical Center**

		Screened with PRAPARE Tool	Not Screened with PRAPARE Tool
Sex	[N=100]		
Male	57	33	24
Female	43	23	20
Age	[N=100]		
Mean [standard deviation] (years)	50.8 [±16]	48.9 [±14]	53.2 [±18]
Range (years)	24–92	24–91	24–92
Race/ethnicity	[N=100]		
Latinx/Hispanic (all)	79	45	34
Black/African American (Hispanic)	1	1	0
Asian (Hispanic)	1	1	0
Black/African American (non-Hispanic)	6	5	1
Asian (non-Hispanic)	1	0	1
White (non-Hispanic)	14	6	8
Language	[N=100]		
Spanish	62	35	27
English	33	18	15
Spanish/English	5	3	2
Insurance/health coverage	[N=100]		
Uninsured	52	29	23
Travis County Medical Access Program (MAP)	19	10	9
Medicaid	1	1	0
Medicare	8	5	3
Medicaid + Medicare	5	2	3
Private insurance	15	9	6
Current employment status	[N=100]		
Full time	31	16	15
Part time/temporary	10	10	0
Retired	9	5	4
Unemployed	22	12	10
Recently unemployed	20	11	9
Other employed	0	0	0
Disabled	6	2	4
Missing data	2	0	2
Type of occupation/work performed	[N=60, employed and recently unemployed]		
Construction/landscaping/mechanic/farming	30 (50%)	16	14
Construction	20	9	11
Maintenance/landscaping	2	2	0
Mechanic/electrical/plumbing/machinist	8	5	3
Food/retail/gig/house cleaning	19 (32%)	15	5
Food	9	7	2
Retail/delivery/gig service	4	4	0
House cleaning	6	3	3
Healthcare/care taking	7 (12%)	4	3
Office	4 (7%)	1	3
House type	[N=100]		
House	32	22	10
Apartment	34	22	12
Trailer/mobile home	10	8	2
Stay with others	0	0	0
Hotel	0	0	0
Shelter	1	0	1
Nursing home	4	1	3
Homeless	5	3	2
Unknown/missing	14	0	14
Current primary care provider	[N=100]		
Yes	55	29	26
No	45	27	18
Disposition	[N=100]		
Home	70	40	30
Isolation facility	16	11	5
Skilled nursing facility	3	1	2
Long-term acute care	7	3	4
Death	4	1	3

All data obtained through chart review and demographics in the electronic medical record.

the importance of HRSN within this particularly vulnerable population of hospitalized COVID-19 patients during the early stages of the pandemic.

In conclusion, our experience supports that HRSN screening for hospitalized patients is feasible and provides relevant, actionable information for medical teams.

**Table 2 Health-Related Social Needs Identified in COVID-19 Patients Who Had Documented PRAPARE Tool Screening (N=56)**

Health-related social needs	N (%)
Housing insecurity	22 (39%)
Food insecurity	11 (20%)
Utilities/bills insecurity	15 (27%)
Medicine/health care insecurity	19 (34%)
Phone insecurity	14 (25%)
Transportation insecurity	13 (23%)
Jail/prison/detention	2 (4%)
Refugee	4 (7%)
Do you feel safe? (No)	0 (0%)
Electric, gas, oil, water shut off threat	9 (16%)

All data obtained through chart review of documented PRAPARE screening tool results in the electronic medical record.

**Corresponding Author:** Christopher Moriates, MD; Department of Internal Medicine, Dell Medical School at The University of Texas at Austin, Austin, TX, USA (e-mail: CMoriates@austin.utexas.edu).

**Supplementary Information** The online version contains supplementary material available at <https://doi.org/10.1007/s11606-022-07550-0>.

#### Declarations:

**Conflict of Interest:** The authors declare that they do not have a conflict of interest.

## REFERENCES

- Billioux A, Verlander K, Anthony S, Alley D. Standardized screening for health-related social needs in clinical settings: the Accountable Health Communities Screening Tool. *NAM Perspectives*. Published online May 30, 2017. <https://doi.org/10.31478/201705b>
- Kushel MB, Vittinghoff E, Haas JS. Factors associated with the health care utilization of homeless persons. *JAMA*. 2001;285(2):200-206. <https://doi.org/10.1001/jama.285.2.200>
- Ma CT, Gee L, Kushel MB. Associations between housing instability and food insecurity with health care access in low-income children. *Ambul Pediatr*. 2008;8(1):50-57. <https://doi.org/10.1016/j.ambp.2007.08.004>
- Bonomi AE, Anderson ML, Rivara FP, Thompson RS. Health care utilization and costs associated with physical and nonphysical-only intimate partner violence. *Health Serv Res*. 2009;44(3):1052-1067. <https://doi.org/10.1111/j.1475-6773.2009.00955.x>
- Social Determinants of Health. Accessed July 27, 2021. <https://www.healthypeople.gov/2020/topics-objectives/topic/social-determinants-of-health>
- Morales DX, Morales SA, Beltran TF. Racial/ethnic disparities in household food insecurity during the COVID-19 pandemic: a nationally representative study. *J Racial and Ethnic Health Disparities*. Published online October 14, 2020. <https://doi.org/10.1007/s40615-020-00892-7>
- Implications of COVID-19 for Social Determinants of Health. Kaiser Family Foundation. Published June 9, 2021. Accessed July 27, 2021. <https://www.kff.org/coronavirus-covid-19/issue-brief/implications-of-covid-19-for-social-determinants-of-health/>
- Byhoff E, Kangovi S, Berkowitz SA, et al. A Society of General Internal Medicine Position statement on the internists' role in social determinants of health. *J Gen Intern Med*. 2020;35(9):2721-2727. <https://doi.org/10.1007/s11606-020-05934-8>
- Schickedanz A, Hamity C, Rogers A, Sharp AL, Jackson A. Clinician experiences and attitudes regarding screening for social determinants of health in a large integrated health system. *Med Care*. 2019;57 Suppl 6 Suppl 2:S197-S201. <https://doi.org/10.1097/MLR.0000000000001051>
- Deloitte. *Social Determinants of Health: How Are Hospitals and Health Systems Investing in and Addressing Social Needs?*. 2017. Accessed July 27, 2021. <https://www2.deloitte.com/content/dam/Deloitte/us/Documents/life-sciences-health-care/us-lshc-addressing-social-determinants-of-health.pdf>
- Langley GJ, Moen RD, Nolan KM, Nolan TW, Norman CL, Provost LP. *The Improvement Guide: a Practical Approach to Enhancing Organizational Performance*. John Wiley & Sons; 2009.
- Andermann A. Screening for social determinants of health in clinical care: moving from the margins to the mainstream. *Public Health Rev*. 2018;39:19. <https://doi.org/10.1186/s40985-018-0094-7>
- National Association of Community Health Centers. PRAPARE (Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences). Accessed July 27, 2021. <https://www.nachc.org/research-and-data/prapare/>
- Salib S, Johnston C, Eaton J, Rossano A, Nelson E. Integrating Learners into COVID Care: Innovation in Medical Education Unlocks New Value During the COVID-19 Pandemic. *The Hospital Leader - The Official Blog of the Society of Hospital Medicine*. Published November 17, 2020. Accessed July 27, 2021. <https://blog.hospitalmedicine.org/integrating-learners-into-covid-care-innovation-in-medical-education-unlocks-new-value-during-the-covid-19-pandemic/>
- Salib S, Amadin A, Brode WM, Johnston C, Patel S, Pignone M. Developing a transitions of care elective for medical students during the COVID-19 pandemic and beyond. *South Med J*. 2021;114(8):458-463. <https://doi.org/10.14423/SMJ.0000000000001280>

**Publisher's Note:** Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.