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# Screening for Health-Related Social Needs: A Comparison of CAHs and Non-CAHs

MADELEINE PICK, MPH

CARSON CRANE, MPH

MEGAN LAHR, MPH

ROBERT BARCLAY, MPH

## KEY FINDINGS

- In results from national hospital survey data, Critical Access Hospitals (CAHs) were less likely than non-CAHs to report collecting data on patients' health-related social needs.
- A higher percentage of system member CAHs, Epic electronic health record (EHR) users, and Meditech EHR users reported routinely collecting data on health-related social needs.
- A lower percentage of CAHs reported screening for each of the five key health-related social needs when assessed individually compared to non-CAHs, and this gap persisted for programs available in CAHs to address these social needs as well.
- When compared to CAHs that collect health-related social needs data but not routinely, those that reported collecting these data routinely were more likely to use these data for population health analytics, quality management, and to inform community needs assessment or other equity initiatives.

## PURPOSE

Examining and mitigating the impact of health-related social needs on health outcomes has been a growing area of interest nationally, particularly for the Centers for Medicare & Medicaid Services (CMS). In this policy brief, we examine differences in collection and use of health-related social needs data among Critical Access Hospitals (CAHs) and non-CAHs.

## BACKGROUND

Despite heavy investment historically in health care and biomedical research, non-medical and non-biological factors have far greater impacts on health.<sup>1</sup> These factors are often referred to as “social drivers of health,” “social determinants of health” or “health-related social needs.” Though the terms are often used interchangeably, there are distinct differences in their meaning. We understand social drivers or determinants of health (SDOH) to be underlying social and economic factors impacting the health and well-being of an entire community, whereas health-related social needs (HRSN) are an individual's necessities for essentials such as food, housing, transportation, and other resources.<sup>2</sup> Throughout this brief, we primarily use the term “HRSN” but will sometimes use “SDOH” to align with quality measures collected by CMS.

An individual's access to resources such as stable, safe housing and reliable transportation have far-reaching impacts on their ability to practice healthy behaviors, seek and access routine preventive medical care, and avoid injury and disease.<sup>3-5</sup> Given the well-established link between these social needs and health outcomes, hospitals and other health care providers have begun to shift their attention to identifying patients with unmet



needs and developing interventions to address HRSN and SDOH. New measures were added to CMS' Hospital Inpatient Quality Reporting (IQR) program for 2024 for hospitals to report the percentage of patients screened for five key "social drivers of health" (housing insecurity, food insecurity, utility needs, interpersonal violence, and transportation) and the percent of those patients that screen positive for these needs.<sup>6</sup> Beginning in 2025, these measures will also be added to the Medicare Beneficiary Quality Improvement Project (MBQIP), which is the quality reporting program for CAHs. Challenges in collecting these data remain, however, particularly for rural hospitals and CAHs. A study using the National Survey of Healthcare Organizations and Systems found that most hospitals (92%) report screening for at least one HRSN, though few (24%) screen for all five key social needs.<sup>7</sup> While this study did not find significant differences related to rurality of hospitals screening for all social needs, rural hospitals and CAHs were more likely to not screen for any social needs.<sup>7</sup>

Additionally, there are many components that are often included in the definitions of SDOH or HRSN. In this brief, we focus on the five drivers that are included in the CMS measures: housing insecurity, food insecurity, utility needs, interpersonal violence, and transportation, while acknowledging that there are other HRSN and SDOH that have a significant impact on health and wellbeing.

Available literature on the impact of HRSN screening and interventions on health presents some positive impacts.<sup>8</sup> Some significant health outcomes include an increased likelihood of quitting smoking,<sup>9</sup> better (lower) blood pressure during pregnancy,<sup>10</sup> and improved self-rated health,<sup>11</sup> while other studies have seen no significant changes.<sup>8</sup> In terms of health care financial and utilization outcomes, some studies have found decreased 30-day hospitalization readmission rates<sup>12</sup> and improvement in routine visits for preventive care and lower emergency department (ED) visits among children.<sup>13</sup> Most of this prior research, however, has been focused on urban populations and health care settings,

and more work is needed to understand how outcomes may differ in rural areas. At a population level, tracking patients' social needs data can help identify larger trends in social needs across the country and influence state or federal programs to meet those needs.<sup>14</sup>

Some actions that hospitals have taken in response to collecting HRSN data include connecting patients to resources related to their needs and integrating patient navigators, social workers, or case managers into the process to help patients access services outside of the hospital.<sup>8</sup> Several studies have demonstrated that hands-on, longitudinal interventions (such as two years of home-based care management for older adults with low incomes) are more effective than a single interaction providing resources to the patient without follow up.<sup>15-17</sup> These programs vary in structure, but often involve a community health worker (CHW) or case manager providing ongoing support to patients for at least several weeks or even years.<sup>15</sup>

While research on the efficacy of HRSN screening and interventions in hospital settings continues, standardizing the collection of these data is also a priority for CMS and other organizations,<sup>14,18</sup> and may assist in the efforts to understand the impacts of screening. CMS and the American Hospital Association (AHA) recommend hospitals use the International Classification of Diseases, Tenth Revision, Clinical Modification (ICD-10-CM) codes known as "Z codes" to capture the social needs of their patient population in their EHR.<sup>14,19</sup> Z codes identify nonmedical factors that may influence a patient's health, including housing issues, food insecurity, and poverty as well as other factors such as employment concerns, childhood neglect, and legal issues.<sup>14</sup> Compared with urban hospitals, rural hospitals are less likely to use Z Codes to report social needs data, and CAHs are even less likely to use Z Codes compared with rural and urban prospective payment system (PPS) hospitals.<sup>20,21</sup> Currently, hospitals are encouraged to move to ICD-11, which retains these diagnostic codes, though they are no longer called Z codes, but are instead in a section called "Factors influencing health status or contact with health services."<sup>22</sup>



While previous research has assessed the HRSN screening rates of rural hospitals and CAHs, there remains a lack of information about these practices in CAHs. This brief uses national hospital survey data to identify hospital characteristics that may facilitate or hinder screening practices, describe how CAHs compare with non-CAHs in screening for specific social needs, and assess differences between CAHs that routinely screen patients and those that screen patients but not routinely.

### APPROACH

Data for this project comes from the 2022 American Hospital Association (AHA) Annual Survey and the 2022 AHA Information Technology Supplement (AHAIT). To identify CAHs in both datasets, we merged in a list of hospitals designated as CAHs as of December 31, 2022, from lists maintained by the Flex Monitoring Team (FMT).<sup>23</sup> Because the AHAIT data does not include data on system membership, this characteristic was identified in both datasets using responses from the AHA Annual Survey.

In this brief, results from both the AHA Annual Survey and AHAIT are described, but it is important to note that results are not directly comparable between the two datasets as some respondents were only in one or the other. There were 547 CAHs in both datasets, 387 CAHs in the AHA Annual Survey only, and 173 CAHs in the AHAIT data only. For non-CAHs, there were 1,249 respondents in both datasets, 1,126 in the AHA Annual Survey only, and 600 in the AHAIT data only. Data sources and denominator values are listed with each figure in the results below.

Newly added for 2022, the AHAIT survey asked participants several questions about their practices for screening patients for HRSN including whether they collect these data routinely or not routinely, how needs are recorded, and how the data are used. We first analyzed the frequency of data collection on individual patients' HRSN for CAHs and non-CAHs. The AHAIT data included responses of "Yes, routinely", "Yes, but not routinely", "No", and "Don't know" for

frequency of HRSN data collection. For our analyses, we combined the "No" and "Don't know" responses. We then compared the frequency of HRSN data collection in CAHs with and without system membership, based on the AHA Annual Survey. The AHA designates hospitals as "system members" if they belong "to a corporate body that owns and/or manages health provider facilities or health-related subsidiaries". We also analyzed the frequency of HRSN data collection in CAHs by Electronic Health Record (EHR) vendor for the four most common EHR vendors reported by CAHs: Epic, Cerner, CPSI/Evident, and Meditech.

In addition to reviewing the frequency of data collection, we analyzed how CAHs use the data on individual patients' HRSN. We compared the use of HRSN data in CAHs that responded that they routinely collected data to CAHs that responded that they collected data, but not routinely. Potential uses of data enumerated in the survey included referrals to social service organizations, population health analytics, quality management, community needs assessment or other equity initiatives, clinical decision making, and discharge planning.

In the AHA Annual Survey data, we analyzed responses to questions where respondents were asked which HRSN they assess (screen for) as well as which HRSN their hospital or health system has a program or strategy to address, with participants instructed to select all that apply from the same list for both questions. Our analyses focused on responses to the five HRSN that are a part of the new CMS measures: housing, food insecurity or hunger, utility needs, interpersonal violence, and transportation.

We used chi-square tests throughout our analyses to detect significant differences in frequency of collection of patients' social needs data between CAHs and non-CAHs and among CAHs with differing frequencies of collection of patients' HRSN (e.g., routinely vs. not routinely). We report the comparison between CAHs and non-CAHs as well as the comparison of system-member CAHs to independent CAHs and comparisons between CAHs with different EHR vendors.

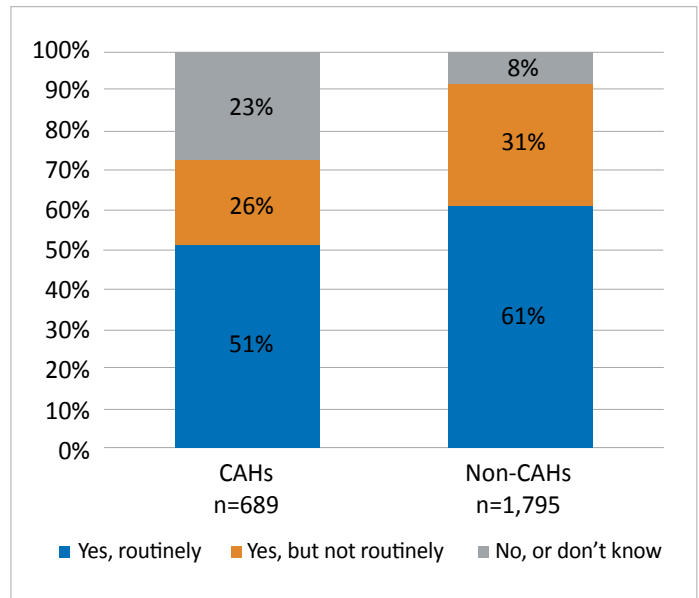


**RESULTS**

We first compared hospital collection of HRSN data broadly among CAHs and non-CAHs as reported in the AHAIT, shown in Figure 1. A higher proportion of non-CAHs (statistically significant, p-value <0.001) reported that they routinely collect data on HRSN compared to CAHs, and non-CAHs were also more likely to select “yes, but not routinely”. Nearly a quarter of CAHs (23%) reported that they do not collect these data or selected that they didn’t know. In the AHA Annual Survey, among CAHs that collect data on HRSN, 93% reported that screening results are recorded in their EHR, which was lower than non-CAHs at 96%, and this difference was statistically significant (p-value = 0.03).

To better understand differences among CAHs, we assessed responses to this question among only CAHs by two key characteristics: system membership and EHR vendor, as shown in Table 1. A higher proportion of system members (62%), Epic EHR users (65%), and Meditech EHR users (60%) selected that they routinely collect data on patients’ HRSN compared to non-system members (37%), Cerner EHR users (40%), and CPSI/Evident EHR users (30%). These differences

**FIGURE 1: Hospital Collection of HRSN Data Among CAHs and Non-CAHs**



Source: AHAIT 2022

Note: There was a statistically significant difference in the distribution of these responses between CAHs and non-CAHs, p-value <0.001

**TABLE 1: Hospital Collection of HRSN Data Among CAHs, by System Membership and EHR Vendor**

CAH Characteristic	Yes, routinely	Yes, but not routinely	No or don't know
<b>System Membership</b>			
System Member	231 (62%)	93 (25%)	49 (13%)
Not a System Member	98 (37%)	70 (27%)	96 (36%)
<b>EHR Vendor</b>			
CPSI/Evident	33 (30%)	35 (32%)	42 (38%)
Cerner	46 (40%)	43 (37%)	26 (23%)
Epic	183 (65%)	61 (22%)	36 (13%)
Meditech	58 (60%)	19 (20%)	19 (20%)

Source: AHAIT 2022, AHA Annual Survey 2022 for system membership

Note: There was a statistically significant difference in the distribution of these responses between system members and non-system members (p-value <0.001) and between the four EHR vendors (p-value <0.001)



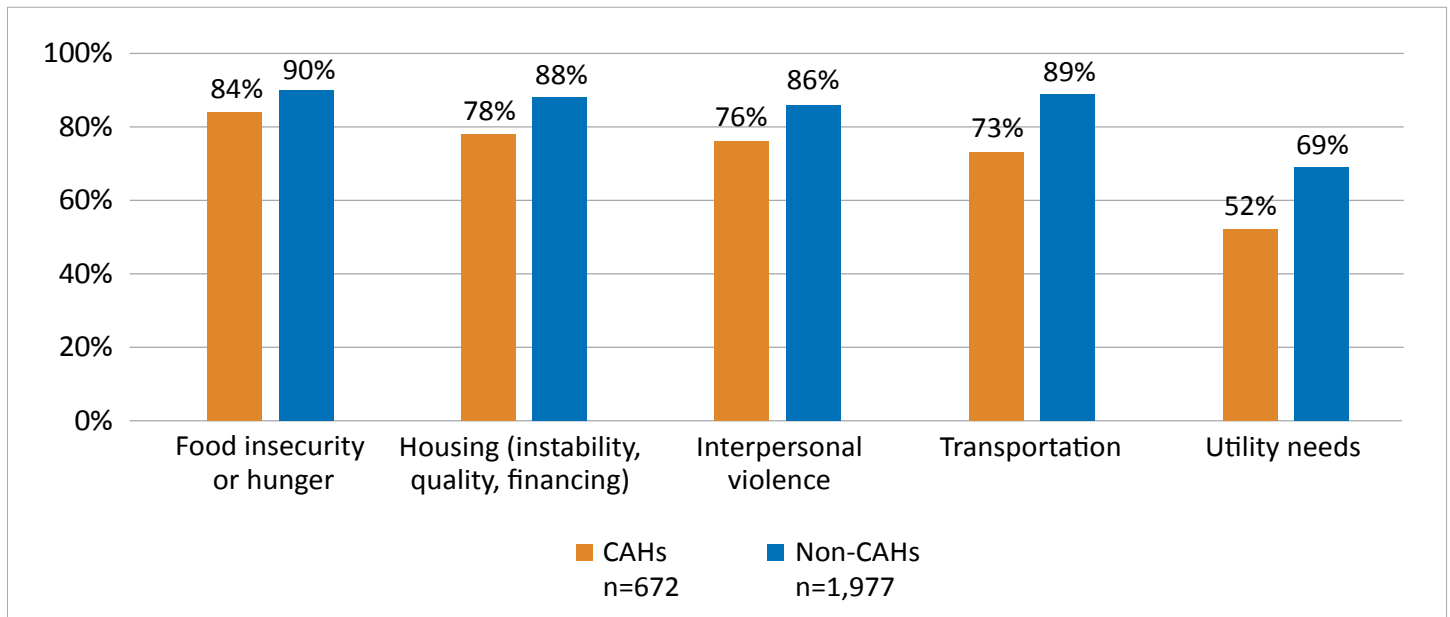
were statistically significant, with p-values < 0.001 for comparison between system members and non-system members, as well as comparisons between EHR vendors. Note that system membership data was not available for CAHs that only completed the AHAIT survey (n=173); thus, those CAHs were not included in the system membership analysis in the table.

In the AHAIT survey, respondents were also asked about receiving external data on HRSN, which we compared to their responses about internal screening for HRSN. The external data sources listed on the survey included health information exchanges, other health-care organizations, community/social service organizations, social service or community-based referral platform, or other external sources. The vast majority (80%) of CAHs that reported screening patients routinely also received HRSN external data. Of the CAHs that reported screening patients but not routinely, a majority (53%) received external data, and 41% of those that did not report internally screening patients received external data.

Figure 2 shows which types of HRSN are assessed by CAHs and non-CAHs, as reported in the AHA Annual Survey. Hospitals were only prompted to answer this question if they answered “yes” to a previous question: “Does your hospital or health system screen patients for social needs?” (including a response of “yes, for all patients” and “yes, for some patients”). For each of these HRSN categories, a lower proportion of CAHs responded that they assessed these social needs compared to non-CAHs, and all differences were statistically significant. Interestingly, these categories also followed slightly different patterns between CAHs and non-CAHs, with the most CAHs assessing food insecurity, followed by housing, interpersonal violence, transportation, and utility needs. Food insecurity was the largest category for non-CAHs as well, but there was slight variation in the response to other HRSN.

There were also statistically significant differences between CAHs and non-CAHs in terms of their programs or strategies to address these same five HRSN,

**FIGURE 2: Types of HRSN Assessed by CAHs and Non-CAHs**

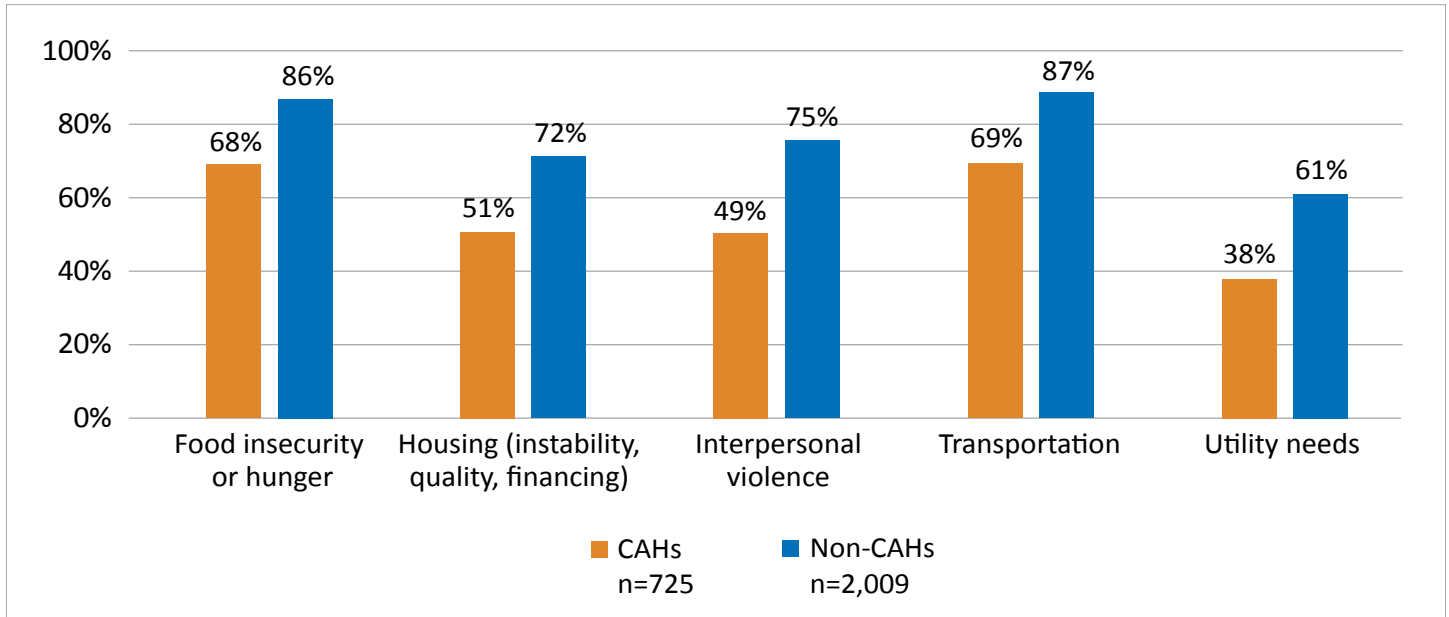


Source: AHA Annual Survey 2022

Note: All CAH and non-CAH comparisons were statistically significant.



**FIGURE 3: Programs to Address HRSN Among CAHs and Non-CAHs**



Source: AHA Annual Survey 2022

Note: All CAH and non-CAH comparisons were statistically significant.

with non-CAHs more likely to report having a program or strategy in each area compared to CAHs (Figure 3). For both CAHs and non-CAHs, transportation was the social need facilities were most likely to have a program to address, whereas utility needs were the least likely to have a program or strategy to address. This question was asked of all respondents, regardless of their responses to other survey questions.

Lastly, we analyzed how CAHs reported using their internal data on HRSN, with specific attention to differences by those that reported they routinely collect these data compared to those that collect it, but not routinely (Figure 4). For both groups, the most common responses were “to inform discharge planning”, “for referrals to social service organizations”, and “to inform clinical decision making”. For these three activities, we did not find statistically significant differences between the two groups of CAHs. However, for the remaining three categories, there were substantial and statistically significant differences between CAHs that routinely collect data and CAHs that collect it but not routinely.

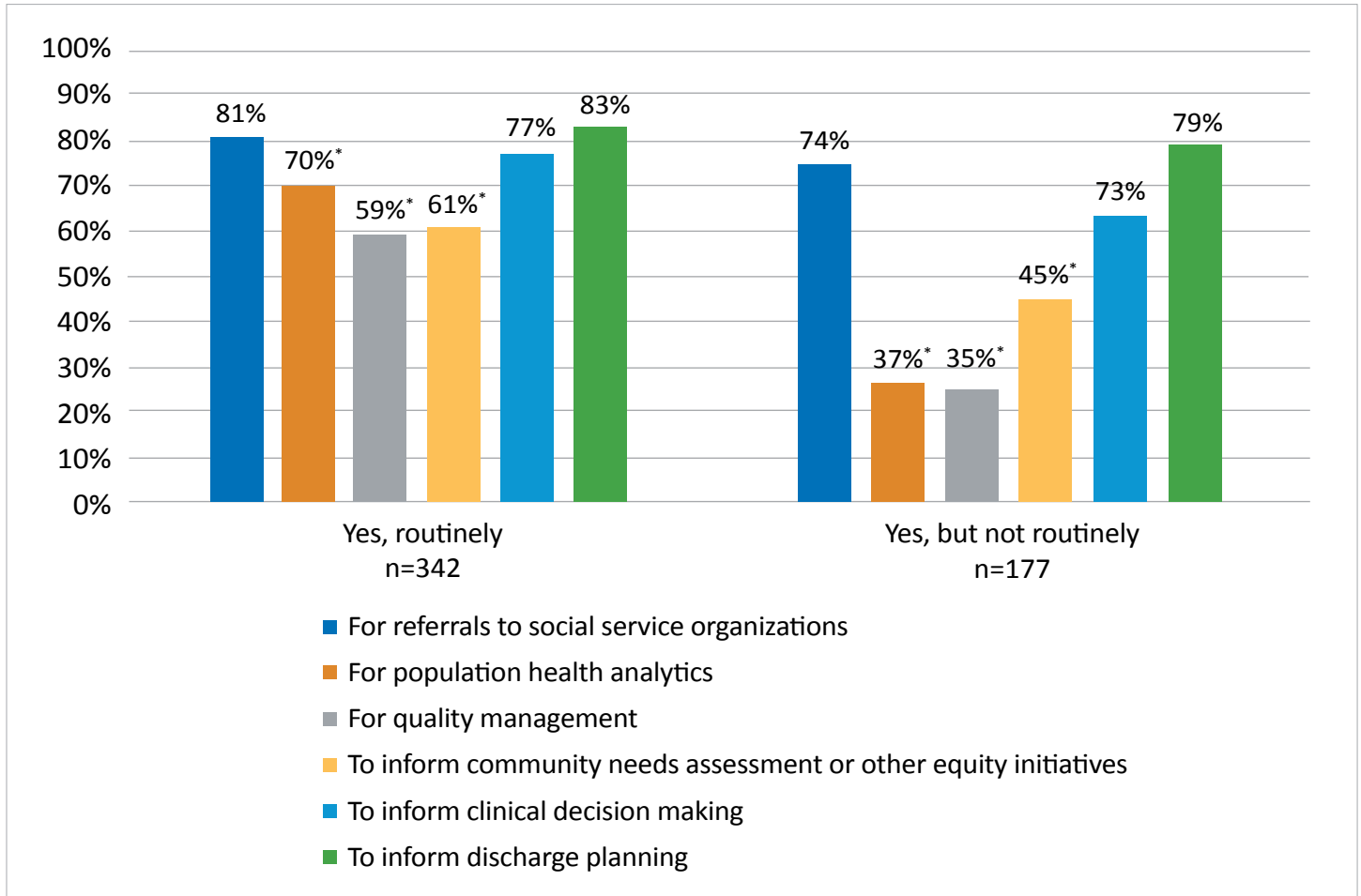
For example, 70% of CAHs that routinely collect these data reported they use it “for population health analytics”, compared to only 37% of CAHs that collect it but not routinely. This remained true for the activities of “quality management” and “to inform community needs assessment or other equity initiatives”.

### DISCUSSION

Hospital collection of patients’ HRSN can impact hospital-level utilization and finances,<sup>8</sup> patients’ health outcomes,<sup>8</sup> and broader initiatives and policies addressing social needs.<sup>14</sup> These data can help inform the needs of a community or specific populations within a community, particularly when screening is done systematically and data are used thoughtfully. Using two national hospital surveys, we found several differences in CAH and non-CAH practices for collection of these data, as well as differences between CAHs that routinely collect patients’ HRSN data and those that collect it but not routinely.



**FIGURE 4: Use of Internal Data Among CAHs, by Routine Versus Not Routine Collection**



Source: AHAIT 2022

\* indicates statistically significant differences between “Yes, routinely” and “Yes, but not routinely” at p<0.05

In this analysis, CAHs were less likely than non-CAHs to report screening for HRSN, either routinely or not routinely. This seemed to be mitigated somewhat by system membership and EHR vendor, with more system member CAHs, and CAHs using Epic or Meditech EHRs selecting that they conduct routine screening for HRSN. There are many factors that may explain these differences. First, screening patients for HRSN requires many resources, particularly if it is a new process. This includes financial and staff resources to develop workflows, select and administer a screening tool, and establish or strengthen partnerships with community organizations or other referral routes and resources.<sup>24</sup>

These resources may be easier to access for CAHs that are members of a system, where there may be mandatory, system-wide practices that are routine in all facilities including CAHs. Some common screening tools used by hospitals include the Protocol for Responding to and Assessing Patient’s Assets, Risks & Experiences (PRAPARE), the CMS HRSN Screening Tool, and HealthBegins.<sup>25</sup> These and other resources can be found in the Appendix.

As EHR vendors (including different packages within vendors) all have different capabilities, some vendors and/or packages may be better equipped to facilitate



HRSN screening and/or data management without requiring additional customization or cost. Our analysis found that while the vast majority (93%) of CAHs that screen patients for HRSN recorded these data in their EHR, this was lower than the percentage of non-CAHs at 96%. Thus, even among hospitals that are screening nationally, a technology gap persists in recording the screening results electronically in CAHs. Further, this analysis may underestimate the technology gap as this was only among hospitals that responded to the AHAIT survey and screen for HRSN in some capacity.

We also assessed the frequency of CAHs that received HRSN data from external sources (such as health information exchanges, community organizations, and other healthcare organizations) compared to their internal screening practices. Our findings demonstrate that 80% of CAHs that routinely screen patients for HRSN received external data, compared to 41% of those that do not screen patients. This suggests that some CAHs appear to be very engaged in these activities, demonstrated by both routinely screening their patients and utilizing external data on HRSN. It is also encouraging that over 40% of CAHs that do not screen their patients receive external data on HRSN; suggesting they may be starting to engage in assessing HRSN by obtaining and utilizing data from other sources. Further research on the type of external HRSN data CAHs receive and utilize may offer additional insight.

A deeper dive into the specific HRSN for which hospitals screen revealed that a smaller proportion of CAHs reported screening for each of the five HRSN compared to non-CAHs. Though this question was only asked of respondents who said their hospital screens some or all patients for HRSN, this finding indicates that CAHs may be more likely to focus on screening for fewer specific needs rather than for all five. It may be important to consider this difference in screening reported in 2022 when examining reporting among CAHs for the new HRSN CMS quality measures starting in 2024. CAHs may be in a very different starting place with HRSN and may need different resources to implement screening or take their screening to the level expected by CMS.

Additionally, fewer CAHs reported having “programs or strategies to address” each of the five social needs compared to non-CAHs. While this is an important comparison, it is also not the expectation that CAHs have hospital-based programs to address each of these HRSN, but rather that they have a process in place to refer out to other community partners or state, regional, or national organizations as immediate steps for providing resources to their patients who screen positive for an HRSN. One such example is 211 - the national network that operates through national and regional partners (including United Way and Community Action Partnerships) and aims to help people identify, navigate, and connect with local resources including housing, utility assistance, and food.<sup>26</sup> Other organizations focus on a specific HRSN; for example, the Housing Assistance Council,<sup>27</sup> a national organization that focuses on rural housing, and Feeding America, a national network of food banks.<sup>28</sup>

For both CAHs and non-CAHs, utility needs were the least likely HRSN to be screened for or have a program to address. The decision not to screen for an HRSN and the decision not to develop a program to address that HRSN may be closely related due to provider or facility hesitancy. This is consistent with previous research that shows providers are hesitant to screen for something they cannot attend to,<sup>29</sup> and starting an initiative to address a specific social need is challenging without baseline data to demonstrate it is a need in the community.

Our final finding was that there were some key differences in the use of data between CAHs that routinely screen for HRSN compared to those that screen but not routinely. CAHs in both groups were very likely to report using data for referrals to social service organizations, to inform clinical decision making, and to inform discharge planning, with 73%-83% reporting these activities. While these are distinct activities, they are all primarily focused on individual patient care and would occur during or shortly after a patient’s visit or hospitalization. Prior literature on clinician perspectives suggests that HRSN screening can be





used to facilitate a more holistic view of patients and help inform their clinical decisions.<sup>29</sup> For example, a provider may consider a broader range of treatment options for a patient who is housing insecure, knowing they may not have reliable access to a refrigerator for medication that needs to be refrigerated. Compared to CAHs that screen but not routinely, CAHs that routinely screen patients were more likely to report the remaining three activities: population health analytics, quality management, and inform community health needs assessment or other equity initiatives, indicating some additional work beyond individual patient care. Some examples of these activities could include identifying trends in transportation needs by age or racial identity (population health analytics), identifying which social needs have the lowest rates of screening and improving these processes (quality management), and using HRSN data to inform hospital or community-based needs assessment and their Community Health Improvement Plans (CHIPs) with goals to improve identified HRSN in their community (community needs assessment or other equity initiatives). These differences suggest that consistent, routine collection of these data may be important to facilitate initiatives that are broader in scope, address a larger population rather than an individual patient, and are typically long-term and/or ongoing projects.

It is important to acknowledge that processes to collect and use HRSN data require resources and planning to implement. All health care settings, including CAHs, should do so systematically and thoughtfully, rather than rushing to do so just to fulfill a requirement or “check a box”. Failure to do so may cause greater harm to their communities, including contributing to patient distress, perpetuating stigma, and other unintended consequences.<sup>15</sup> CAHs and other rural hospitals should aim to collect accurate data on their patients’ HRSN and provide appropriate clinical care adjustments, resources, and follow-up. Depending on the hospital and community, this may include providing the patient with brochures including information on relevant community resources, a number for a state or national

hotline devoted to relevant resources, a referral and “hand off” to a partner organization, a hospital-based program addressing the need, or a combination of these responses. Community members’ trust in the hospital and their providers is essential for successful and sustainable HRSN interventions, as well as continued patient care, and this may present a unique opportunity for CAHs to seek input and support from their patients and local residents. State Flex Programs (SFPs) can facilitate these efforts through sharing resources such as screening tools, training for clinicians, and methods for using the data collected. SFPs may also consider creating cohorts or learning collaboratives for CAHs to share best practices related to collecting, reporting, and addressing HRSN. This may include sharing ideas for hospitals to provide resources through their own initiatives as well as referrals to other community organizations better suited to address these needs. Additionally, [the Small Rural Hospital Improvement Program \(SHIP\)](#) may be another source of support and funding for CAHs to help address HRSN screening. For additional reference, some suggested resources for use by SFPs and/or CAHs are included in the Appendix.

## CONCLUSION

This brief underscores the important role of HRSN data collection in shaping broader health care initiatives, and provides important data on the current state of CAH engagement in this work. With growing attention to screening patients for HRSN in CMS quality reporting, this is a critical time for CAHs and SFPs to assess the state of their practices and where there are opportunities for growth. CAHs should continue to prioritize providing appropriate resources and follow-up based on accurate HRSN data, while fostering trust and engagement with patients and local residents. SFPs are valuable facilitators in supporting CAHs’ efforts through resource sharing and collaborative learning opportunities. By leveraging these resources and engaging with local partners, CAHs can effectively identify and address HRSN needs and contribute to improved health outcomes of their communities.



## REFERENCES

1. Kaplan RM, Milstein A. Contributions of health care to longevity: A review of 4 estimation methods. *Ann Fam Med*. May 2019;17(3):267-272. doi: 10.1370/afm.2362
2. Lumpkin JR, Perla R, Onie R, Seligson R. What we need to be healthy—and how to talk about it. *Heal Aff Forefr*. 2021. Updated May 3. doi:10.1377/forefront.20210429.335599
3. Swope CB, Hernández D. Housing as a determinant of health equity: A conceptual model. *Soc Sci Med*. Dec 2019;243:112571. doi: 10.1016/j.socscimed.2019.112571
4. Robert Wood Johnson Foundation. *How does transportation affect health?* RWJF;2012 October. Health Policy Snapshot Issue Brief. Accessed May 23, 2024. [https://www.rwjf.org/content/dam/farm/reports/issue\\_briefs/2012/rwjf402311](https://www.rwjf.org/content/dam/farm/reports/issue_briefs/2012/rwjf402311)
5. Henning-Smith C, Evenson A, Corbett A, Kozhimannil K, Moscovice I. *Rural transportation: Challenges and opportunities*. University of Minnesota, Rural Health Research Center;2017 November Policy Brief. Accessed May 23, 2024. <https://rhrc.umn.edu/wp-content/uploads/2019/01/1518734252UMRHRCTransportationChallenges.pdf>
6. U.S. Centers for Medicare and Medicaid Services. *Screening for social drivers of health measure and the screen positive rate for social drivers of health measure*. Accessed May 30, 2024. [https://qualitynet.cms.gov/files/65b143951cda72001b119ca3?filename=ScrnSocDrvrSrn\\_Pos\\_Specs.pdf](https://qualitynet.cms.gov/files/65b143951cda72001b119ca3?filename=ScrnSocDrvrSrn_Pos_Specs.pdf)
7. Frazee TK, Brewster AL, Lewis VA, Beidler LB, Murray GF, Colla CH. Prevalence of screening for food insecurity, housing instability, utility needs, transportation needs, and interpersonal violence by US physician practices and hospitals. *JAMA Netw Open*. Sep 4 2019;2(9):e1911514. doi: 10.1001/jamanetworkopen.2019.11514
8. Yan AF, Chen Z, Wang Y, et al. Effectiveness of social needs screening and interventions in clinical settings on utilization, cost, and clinical outcomes: A systematic review. *Health Equity*. 2022;6(1):454-475. doi: 10.1089/heq.2022.0010
9. Haas JS, Jeffrey AL, Elyse RP, et al. Proactive tobacco cessation outreach to smokers of low socioeconomic status a randomized clinical trial. *JAMA Intern Med*. Feb 2015;175(2):218-226. doi:10.1001/jamainternmed.2014.6674
10. Morales ME, Epstein MH, Marable DE, Oo SA, Berkowitz SA. Food insecurity and cardiovascular health in pregnant women: Results from the Food for Families Program, Chelsea, Massachusetts, 2013-2015. *Prev Chronic Dis*. Nov 3 2016;13(11):1-13. doi:10.5888/pcd13.160212
11. Kangovi S, Mitra N, Norton L, et al. Effect of community health worker support on clinical outcomes of low-income patients across primary care facilities: a randomized clinical trial. *JAMA Intern Med*. Dec 1 2018;178(12):1635-1643. doi:10.1001/jamainternmed.2018.4630
12. Bronstein LR, Gould P, Berkowitz SA, James GD, Marks K. Impact of a social work care coordination intervention on hospital readmission: a randomized controlled trial. *Soc Work*. Jul 2015;60(3):248-255. doi:10.1093/sw/swv016
13. Sege R, Preer G, Morton SJ, et al. Medical-legal strategies to improve infant health care: A randomized trial. *Pediatrics*. Apr 15 2015;136(1):97-106. doi:10.1542/peds.2014-2955
14. American Hospital Association. ICD-10-CM coding for social determinants of health. AHA;2022 January. Accessed March 13, 2024. <https://www.aha.org/system/files/2018-04/value-initiative-icd-10-code-social-determinants-of-health.pdf>
15. Butler ED, Morgan AU, Kangovi S. Screening for unmet social needs: Patient engagement or alienation? *NEJM Catalyst*. 2020. Updated July 20. doi:10.1056/cat.19.1037
16. Counsell SR, Callahan CM, Clark DO, et al. Geriatric care management for low-income seniors: A randomized controlled trial. *JAMA*. Dec 12 2007;298(22):2623-2633. doi:10.1001/jama.298.22.2623
17. Kangovi S, Mitra N, Grande D, Long JA, Asch DA. Evidence-based community health worker program addresses unmet social needs and generates positive return on investment. *Health Aff*. Feb 20 2020;39(2):207-213. doi:10.1377/hlthaff.2019.00981
18. McIver L. The path forward: Improving data to advance health equity solutions. Centers for Medicare & Medicaid Services. 2022. Updated Nov. 10. Accessed May 23, 2024. <https://www.cms.gov/blog/path-forward-improving-data-advance-health-equity-solutions>
19. U.S. Centers for Medicare & Medicaid Services. *Using Z codes: The social determinants of health (SDOH) data journey to better outcomes*. Revised. CMS Office of Minority Health;2023 June. Accessed May 23, 2024. <https://www.cms.gov/files/document/zcodes-infographic.pdf>
20. Truong HP, Luke AA, Hammond G, Wadhera RK, Reidhead M, Joynt Maddox KE. Utilization of social determinants of health ICD-10 Z-codes among hospitalized patients in the United States, 2016-2017. *Med Care*. Dec 2020;58(12):1037-1043. doi: 10.1097/mlr.0000000000001418
21. Maksut JL, Hodge C, Van C, Razmi A, Khau MT. *Utilization of Z codes for social determinants of health among Medicare fee-for-service beneficiaries, 2019*. CMS Office of Minority Health;2021. Data Highlight No. 24. Accessed May 23, 2024. <https://www.cms.gov/files/document/z-codes-data-highlight.pdf>
22. World Health Organization. *ICD-11: Factors influencing health status or contact with health services*. 2024. Accessed May 23, 2024. <https://icd.who.int/browse/2024-01/mms/en#1249056269>
23. Flex Monitoring Team. *Historical CAH data*. FMT. 2023. Accessed January 29, 2023. <https://www.flexmonitoring.org/historical-cah-data-0>
24. Sandhu S, Liu M, Wadhera RK. Hospitals and health equity - translating measurement into action. *N Engl J Med*. Dec 29 2022;387(26):2395-2397. doi: 10.1056/NEJMp2211648
25. NORC Walsh Center for Rural Health Analysis. *Tools to assess and measure social determinants of health*. Rural Health Information Hub. 2020. Accessed May 23, 2024. <https://www.ruralhealthinfo.org/toolkits/sdoh/4/assessment-tools>
26. 2-1-1. website. 2024. Accessed May 23, 2024. <https://www.211.org/>
27. Housing Assistance Council. *Housing assistance council (HAC)*. website. 2024. Accessed May 23, 2024. <https://ruralhome.org/>
28. Feeding America. *Feeding America*. website. 2024. Accessed May 23, 2024. <https://www.feedingamerica.org/>
29. Hamity C, Jackson A, Peralta L, Bellows J. Perceptions and experience of patients, staff, and clinicians with social needs assessment. *Perm J*. 2018;22:18-105. doi: 10.7812/tpp/18-105

For more information on this report, please contact Madeleine Pick, [pickx016@umn.edu](mailto:pickx016@umn.edu).

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## APPENDIX: Resources for Collecting and Recording HRSN

Resource Name	Description
<a href="#">USING Z CODES: The Social Determinants of Health (SDOH) Data Journey to Better Outcomes</a>	This infographic from CMS provides information about how to use Z Codes effectively to address Social Determinants of Health.
<a href="#">Social Needs Screening Tool Comparison Table</a>	This resource from the Social Interventions Research & Evaluation Network compares 15 different screening tools including how many social needs questions they have and which of the five HRSN included in the new CMS measures.
<a href="#">Tools to Assess and Measure Social Determinants of Health</a>	This resource from Rural Health Information Hub provides descriptions and links to download three screening tools: Health-Related Social Needs Screening Tool, PRAPARE Implementation and Action Toolkit, and HealthBegins.
<a href="#">Social Determinants of Health (SDOH) Toolkit</a>	This toolkit from the State Innovation Model of Iowa provides a step by step guide for health care providers and organizations on how to collect and use SDOH data, from picking a tool to getting feedback from patients to developing new partnerships.
<a href="#">Improving the Collection of Social Determinants of Health (SDOH) Data with ICD-10-CM Z Codes</a>	This infographic from CMS provides information about what Z Codes are, why organizations should collect them, and how to use Z Codes for SDOH.
<a href="#">SDOH &amp; Practice Improvement</a>	AHRQ's SDOH & Practice Improvement page provides several tools and resources to help organizations including information about screening tools and clinical-community linkages.
<a href="#">The Health Leads Social Health Data Toolkit</a>	This toolkit from Health Leads provides manager- and director-level staff with information concerning setting up a social needs program.
<a href="#">The Health Leads Screening Toolkit</a>	This toolkit from Health Leads provides information about how to screen for social needs including which domains to address, tips to create a screening tool, a recommended screening tool, and question banks for each social needs domain.