

Social Determinants of Health Screening and Referral Follow Up Initiative: A Quality  
Improvement Project in an Academic Primary Care Clinic

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## **Abstract**

### **Background**

Social Determinants of Health (SDOH) refer to the circumstances present in the surroundings where individuals are born, reside, acquire knowledge, engage in employment, participate in leisure activities, practice religion, and grow old, which have an impact on a diverse array of health-related outcomes, functioning, and risks that affect the quality of life. The presence of disparities based on race/ethnicity, socioeconomic status, and geographic location is notably evident in the incidence of mortality and/or morbidity associated with cardiovascular disease, cancer, diabetes, COPD, HIV/AIDS, homicide, psychological distress, hypertension, smoking, obesity, and the availability of high-quality healthcare services.

### **Methods**

The Plan Do Study Act method of quality improvement was used for this project. Data of initial screening and referral from November 2022 to January of 2023 were retrieved. Baseline assessment included reviewing the Athena electronic health records of patient's medical records within the Midwestern Academic Internal Medicine Clinic. This review will consist of new patients and annual physical patients that were screened for SDOH between April 2023 to December 2023.

### **Intervention**

Newly retrieved data from April 2023 to December 2023 will be compared to the original SDOH screening and referral data from November 2022 to January 2023. With this data, quality improvement opportunities will be formulated with the staff at a Midwestern Academic Internal Medicine Clinic.

Internal Medicine staff:

Providers- academic faculty physicians or nurse practitioners

Staff- RN, case/clinical managers, social workers, medical assistants, and medical receptionists

## **Results**

The previous studies assessment following the implementation of the SDOH process map (see Appendix C) and screening tool (see Appendix B), between November 2022 to January 2023, showed 73% of eligible patients were screened (see Appendix E). The current data from April 2023 to December 2023 revealed an 83% completion rate (see Appendix E).

## **Conclusions**

The data collected demonstrated an increase of 11% in completion of SDOH screenings in comparison to the initial data. The results suggest that having an SDOH screening process in place, educating, and training staff regarding the screening process can improve the screening rates. It's important to note that despite the increase of percentage of SDOH screening, continued education, monitoring and growth is required to sustain the initiative. SDOH screening sustainability requires continuous monitoring, educating, and training for the staff and newly hired staff involved in the screening process (Zhang & Fornilli, 2023).

## **Introduction**

### **Problem Description & Available knowledge**

Social determinants of health (SDOH) are non-medical components that contribute to the health outcomes of individuals. According to the World Health Organization (2023), research on these factors has shown that they are more influential on health than health care or lifestyle choices. Influences that can have positive or negative outcomes are, but not limited to, income, education, unemployment, working life conditions, food insecurity, housing, early childhood development, social inclusion, non-discrimination, structural conflict, and access to quality, affordable health services. Nearly 30-50% of health outcomes are related to SDOH. Along with health equity and health literacy, HealthyPeople2023 have identified SDOH as one of three priority areas (CDC, 2022).

SDOH contributes to a wide range of health disparities and inequities (CDC, 2023). Addressing SDOH is important for improving health and reducing disparities in health and health care. Unmet health-related social needs can significantly raise a patient's risk of chronic conditions or disease and lower life expectancy in comparison to the people who do have access to their social needs (CDC, 2023). Living with chronic disease is a major contributor to poor health outcomes, an increase in health costs, and a reduction in quality of life (CDC, 2023). Providing medical care is insufficient for ensuring better health outcomes if the root cause is a lack of access to healthcare, social resources, and limited financial resources for obtaining health insurance or paying for procedures and medication. SDOH has a significant impact on patient outcome, therefore, identifying and addressing them is crucial.

With the impact of SDOH on health outcomes, screening is pertinent to addressing these needs in the primary care setting. SDOH screening is important because it brings attention to the patient's specific needs essential to be addressed by the patient's provider (Magoon, 2022). Providers can document positive SDOH screening using the ICD-10 "Z" codes (Z55-Z65) as part of their assessment. This provides health systems accurate data about the current needs of their patient population. Also, it gives providers the knowledge to better create a plan of care that is centered around their patients' individual needs. Some examples include medication prescribing for patients allotted income, transportation considerations when scheduling visits, or use of interpreter services. When a patient's needs are not addressed, complications can arise.

Identification of positive screening of SDOH does not ensure that social needs will be met. Often, patients face unmet health-related social needs after screening or referrals being placed. According to Singer and Porta (2022), these referral barriers can lead to delayed care which contributes to patients only seeking help when their illness becomes severe. The delayed initiation of care coordination results in a limited availability of support, interventions, or treatments essential for the restoration or preservation of patients' health. Therefore, it is important to follow up with patients to determine if they are successfully connected to social services after initial positive screening of SDOH and being referred. Addressing SDOH can impact health, well-being, and quality of life (CDC, 2023).

### **Review of the Literature**

#### **Search Methodology**

A literature review was performed utilizing the databases; CINAHL and PubMed.

While conducting searches, the terms searched were “SDOH screening”, “improving SDOH screening rates”, “staff training or staff education”, “implementation of SDOH screening” and “SDOH screening interventions”. The terms were searched individually and in combinations. Inclusion criteria included peer-reviewed articles, published in the English language, and published between 2015 and 2023. Exclusion criteria selected were non-peer reviewed articles and not published in English.

## **Summary of Literature**

### ***Importance of SDOH screening***

According to Tong et al. (2018), providers found that throughout SDOH screening within their facility, knowing the social needs of their patients changed their approach to care. It also helped in the communication between provider and patient. Improving the initial SDOH screening methods will enhance approach and communication within the Midwestern Academic Internal Medicine Clinic. While SDOH screening has shown promise in improving patient care, future research has been identified as vital to refine the process (Singer & Porta, 2022).

Studies have shown that demographics involving health system size, visit type, and community-level features all play a role in SDOH screening (Lindenfeld et al., 2023; Gold et al., 2019). These characteristics were evaluated by the authors for maximum efficacy of SDOH screening within the system. Other priorities included reviewing literature and consulting primary care staff. These tactics were to avoid unessential data collection and integrate maximum SDOH screening potential (Laforge, 2018).

### ***Improvement/Guidance Utilization***

No matter the SDOH screening outline, implementing a systematic strategy or framework has shown to be effective for an increase in SDOH identification and resource outsourcing (Vega

et al., 2019; Chagin et al., 2021). Different screening methods can be adopted to improve current effectiveness within the clinic system. Active and passive information has been found to help with information retrieval methods (Ramirez et al., 2022). Active information would include the current questionnaire in use. Passive would be certain systems used to pull information from narrative documentation in the EHR.

Providing provider or staff training sessions such as posting educational flyers and providing weekly updates have demonstrated to increase SDOH screening rates (Zhang & Fornili, 2023). It's also important to provide training sessions at the beginning of implementing interventions and repeating it for new staff. Displaying educational fliers displayed in the clinic can ensure awareness for the patients and staff that SDOH are being conducted (Zhang & Fornili, 2023). This project demonstrated the sustainability of a universal SDOH screening process by utilizing a standardized screening process embedded into the EMR, training and educating providers and staff involved in the screening process, and frequently monitoring data (Zhang & Fornili, 2023).

Bradywood et al. (2021) and Herrera et al. (2021) demonstrated that preceding with an intervention of providing education and training for the staff involved impacts the SDOH completion rates and correctly documenting in the HER. One study has not only shown improvement in SDOH screening completions but also showed positive feedback from the staff. Providing initial education on when or how the SDOH screening needs to be completed will ensure staff adherence to following the workflow and user satisfaction (Rogers et al., 2022).

### **Evidenced- Based Quality Improvement Model**

#### **Plan- Do- Study- Act (PDSA) Tool**



The quality improvement method of Plan-Do- Study- Act (PDSA) has been used frequently in healthcare settings to assist with improving healthcare quality (see Appendix B). The PDSA method follows a 4-step process of learning and adapting changes for improvement. The PDSA method provides a systematic method for testing changes in complex systems. The PDSA can be used in quantitative or qualitative studies to evaluate the impact of an intervention (Taylor et al., 2014).

“Plan” is the first step of initiation. It includes recruiting a team, setting a specific aim, initiating brainstorming into current context, describing the problem, and identifying causes. The second step in the process is “Do.” This consists of implementation of the interventions. Next, the “Study” phase will include looking at the data gathered within the intervention. Lastly, the “Act” step is composed of reflecting on the plan and outcomes. With this information, the Social Determinants of Health Survey (Appendix A) will either be adopted, adapted, or abandoned.

### **Specific Aims**

Within the Midwestern Academic Internal Medicine healthcare system, a SDOH screening and referral process has been established since November 2022. At this clinic, a lack of SDOH screening and referral process for SDOH resources was identified. A previous QI project at the clinic implemented the use of a SDOH screening tool (Appendix C) and process map for SDOH screening (Appendix D), which demonstrates how and when the screening will be conducted. When a positive SDOH is identified, patients will be provided information about community resources.

The previous project included:

1. Use of the American Academy of Family Physicians (AAFP) Social Needs Screening Tool
2. A Screening and referral workflow
3. Automatic population of the screening tool within the electronic health record (EMR) for all new patients and annual physicals.
4. Education and training for providers and staff of the screening tool and workflow.

After an extended implementation of this screening and referral process, the previous author questioned whether the referral process was successful. Success would be established if the patient was screened, identified as positive or negative, and able to contact a community resource or was contacted by social work. Over a period, the clinic ended the project with an average SDOH screening rate of 73%.

The importance of this project is to study the statistics of SDOH screening execution related to this design after the initial 12-week project. From there, educated recommendations will be made for continuation of improvement for patient outcomes related to SDOH within the system.

## **Methods**

### **Context**

The Midwestern Academic Internal Medicine Clinic academic multi-specialty organization. The Clinic is open Monday- Friday from 8:00 am until 5:00 pm. The clinic provides services such as annual physicals, new patients appointments, follow-ups, and same day/sick visits. The clinic provides services to 4,071 patients aged 18 years of age or older.

### **Interventions**

The authors will review data from April 2023 to December 2023 to determine if SDOH project implementation was successful. From these statistics, recommendations will be made for quality improvement. This process is covered with the Plan- Do- Study- Act (PDSA) Tool.

### ***Plan***

Within the “Plan” section of the model, information will be gathered regarding the current SDOH screening (see Appendix C) and Process Map (see Appendix D) used within the clinic. Literature will be reviewed on studies involving SDOH screening and resources. The authors, two DNP students from MSU, will meet with the community liaison via zoom to discuss the current protocol and suggestions for efficient referral for the current patient population.

### ***Do***

To execute the plan, current authors will work with the community liaison who will gather data from April 2023 to December 2023. Utilizing the Athena electronic health care system, the following information will be gathered: if the SDOH screening was completed, if it was positive, and if a referral was made from positive screenings. This data will be collected from the community liaison and given to the current authors. From this information, quality improvement measures for the clinics SDOH screenings and referrals will be established.

### ***Study***

Deidentified and aggregated quantitative data will be measured by the percentage of completed SDOH screenings among new patients and annual physicals performed from April 2023 to December 2023. This will be compared to the previous studies

statistics of SDOH completion from November 2022 to January 2023. With these findings, barriers and facilitators will be identified within the healthcare system.

### **Recommendations**

To improve screening rates of SDOH, it's crucial to provide training to all staff responsible for SDOH screening procedures. Providing the medical assistants with direct and guided instructions on screening will improve sustainability. To ensure that the staff have a clear understanding of screening process and can perform independently, the case or office manager can sign them off when they demonstrate appropriate screening (Zhang & Fornili, 2023). Newly hired staff should have education within their orientation on the SDOH screening process map (see Appendix C) and screening tool (see Appendix B) (Rogers et al., 2022).

The recommendation of flyers in staff areas regarding the importance of SDOH screening is advised. While SDOH screening improved from April 2023 to December 2023 had increased compared to the initial post screening implementation from November 2022 to January 2023 by 11%, continued improvements elevate patient population health success. SDOH education flyers reiterate the importance of screening and can increase screening rates (Zhang & Fornili, 2023).

One of the most critical steps in improving and sustaining SDOH screening rates is continuously monitoring. Providing a weekly progress report will assist with identifying any barriers regarding SDOH screening process, it will also allow staff to know what is improving. Also, having regular meetings with all team members can provide valuable ideas for improvement, team members can share or brainstorm ideas, and promote learning (Odugbesan et al., 2023). With implementations such as these, the

Midwestern Academic Internal Medicine Clinic should have continued success in SDOH screening rates. Steps such as these are essential to improving health and reducing long term inequities in health.

### ***Act***

Our Aim is to improve SDOH screening rates and sustainability. Based on the results, conclusions will be made of the initial screening and recommendations will be made for the next PDSA cycle. These results will be presented to the community liaison. From there, the Midwestern Academic Internal Medicine Clinic can adopt these interventions as they see fit.

### **Measures**

To assess the effectiveness of our intervention, we will monitor the adherence of the screening process and workflow. Also, analyzing the number of patients being screened and percentage of patients being screened by week. At the end of the 12-week implementation, we will review the statistics to see if the number or percentage of patients screened has improved or if changes need to be made for the next PDSA cycle.

### **Analysis**

Analysis will include assessment of the quantitative data regarding the SDOH screening percentages. This data will be taken from the original project data (November 2022 to January 2023) and the follow up data collected (April 2023 to December 2023) specifically for this project. Depending on the results, new quality improvement measures will be assessed and addressed. References from Appendix D will be reviewed for an optimal, educated action plan. This plan will be proposed to the community liaison where

they may be implemented within the clinic. This will be done to ensure maximum compliance for SDOH screening and referral.

### **Ethical considerations**

The U.S. Food and Drug Administration (FDA) requires any project dealing with human subjects to undergo scrutiny by an Internal Review Board (IRB) prior to the project's implementation (FDA, 2019). The purpose of an IRB is to ensure that participants' personal information is protected in all phases of the project (FDA, 2019). The IRB at Michigan State University (MSU) approved this project prior to implementation. The DNP students completed a Human Research Protection (HRP-512) form and submitted it to the IRB committee in the Office of Regulatory Affairs at MSU for review and approval on February 9<sup>th</sup>, 2024.

### **Results**

The first initial SDOH screening data taken from November 2022 to January 2023 consisted of twelve weeks of data. Eligible patients within the Midwestern Academic Internal Medicine Clinic consisted of new patients or annual physical exam patients. There were 675 patients eligible for SDOH screening and 493 who were screened (see Appendix F). The overall percentage of eligible patients vs. screened patients was 73% (see Appendix E). The end of week 1 proved to have a 56% screening rate. Week 12 ended with an 85% screening rate.

Data was gathered by the community liaison and given to the authors for April 2023 to December 2023 statistics. There were 2,232 total eligible patients to be screened for SDOH. The number of patients with SDOH completed screenings were 1,879, leaving 353 with no screening offered (see Appendix F). This came to 84% of patients eligible

who had an SDOH screen completed (see Appendix E). Appendix E is a chart that reflects SDOH completion rates. The chart in Appendix F shows the comparison of eligible patients vs. patients screened.

### **Interpretation**

The data demonstrates an increase in percentage of patients with completed SDOH screening. The implementation of having a SDOH screening in place, a process map, and training providers and staff regarding the process of screening will improve SDOH screening rates. It's important to monitor the screening process and rate periodically to identify any potential barriers and to find solutions to improve or sustain SDOH screening. Although the screening rate has improved from the initial data collection, studies show continued growth is recommended for optimal patient population health (Laforge, 2018).

### **Limitations**

Limitations within the quality improvement project centered around data retrieval. Due to the lack of access to the Midwestern Academic Internal Medicine Clinic system and the EHR, data needed to be retrieved from a community liaison. The data from April 2023 to December 2023 was collected. Initial data from November 2022 to January 2023 was collected weekly. Better review of the trends regarding the SDOH screening process could have been implemented with weekly statistics.

Another limitation was lack of receiving pertinent information prior to continuing this quality improvement project. Having a copy of the project that was done previously would have been very beneficial. Understanding exactly what steps had been completed or learning more about the clinic as far as the number of staff, and types of services they

provide is essential. Having a clear knowledge of this prior to starting this project would have assisted with continuing this project more efficiently.

The third limitation was time constraints. The due dates for completion for each step of this project was overwhelming as certain information or steps required waiting for responses from the community liaison. Another obstacle was obtaining the approval from the MSU's IRB department, having to respond to questions or provide information that was not required for this quality improvement project delayed our progress.

## **Conclusions**

To provide the best care, providers and practices need to screen for SDOH to identify and address social needs. SDOH screening can be improved and sustained when providers and staff involved have a clear understanding of the screening process and referral for those with social needs. Lack of education by a staff can lead to not continuing to participate or complete the screening process, which can have a negative impact (Freibott et al., 2021). Staff's understanding of SDOH needs and its impacts, and implementation of SDOH screening maps are essential to improving and sustaining screening rates. Comparing the statistics from April to December 2023 to the initial data, it demonstrates that 84% of the patients had a completed SDOH screening compared to 73%. Increasing the number of patients being screened can increase addressing social needs, which can ultimately assist improving their overall health.



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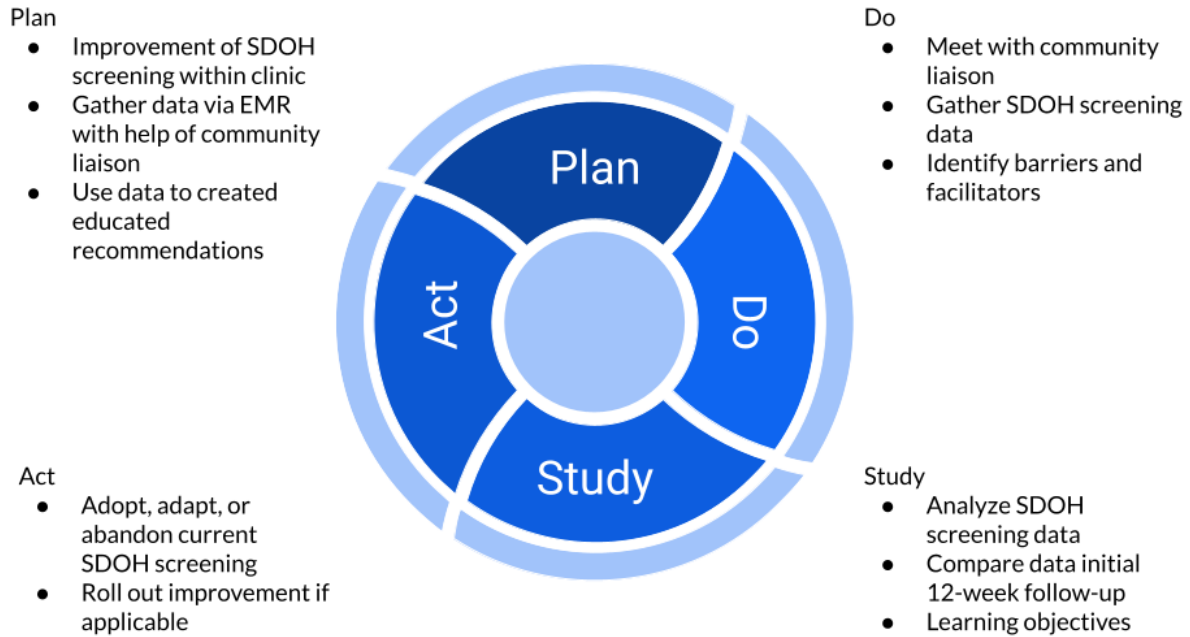
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**Appendix A**

## Appendix B



# Social Needs Screening Tool

### HOUSING

- Are you worried or concerned that in the next two months you may not have stable housing that you own, rent, or stay in as a part of a household?<sup>1</sup>
  - ☐ Yes
  - ☐ No
- Think about the place you live. Do you have problems with any of the following? (check all that apply)<sup>2</sup>
  - ☐ Bug infestation
  - ☐ Mold
  - ☐ Lead paint or pipes
  - ☐ Inadequate heat
  - ☐ Oven or stove not working
  - ☐ No or not working smoke detectors
  - ☐ Water leaks
  - ☐ None of the above

### FOOD

- Within the past 12 months, you worried that your food would run out before you got money to buy more.<sup>3</sup>
  - ☐ Often true
  - ☐ Sometimes true
  - ☐ Never true
- Within the past 12 months, the food you bought just didn't last and you didn't have money to get more.<sup>3</sup>
  - ☐ Often true
  - ☐ Sometimes true
  - ☐ Never true

### TRANSPORTATION

- Do you put off or neglect going to the doctor because of distance or transportation?<sup>1</sup>
  - ☐ Yes
  - ☐ No

### UTILITIES

- In the past 12 months has the electric, gas, oil, or water company threatened to shut off services in your home?<sup>4</sup>
  - ☐ Yes
  - ☐ No
  - ☐ Already shut off

### CHILD CARE

- Do problems getting child care make it difficult for you to work or study?<sup>5</sup>
  - ☐ Yes
  - ☐ No

### EMPLOYMENT

- Do you have a job?<sup>6</sup>
  - ☐ Yes
  - ☐ No

### EDUCATION

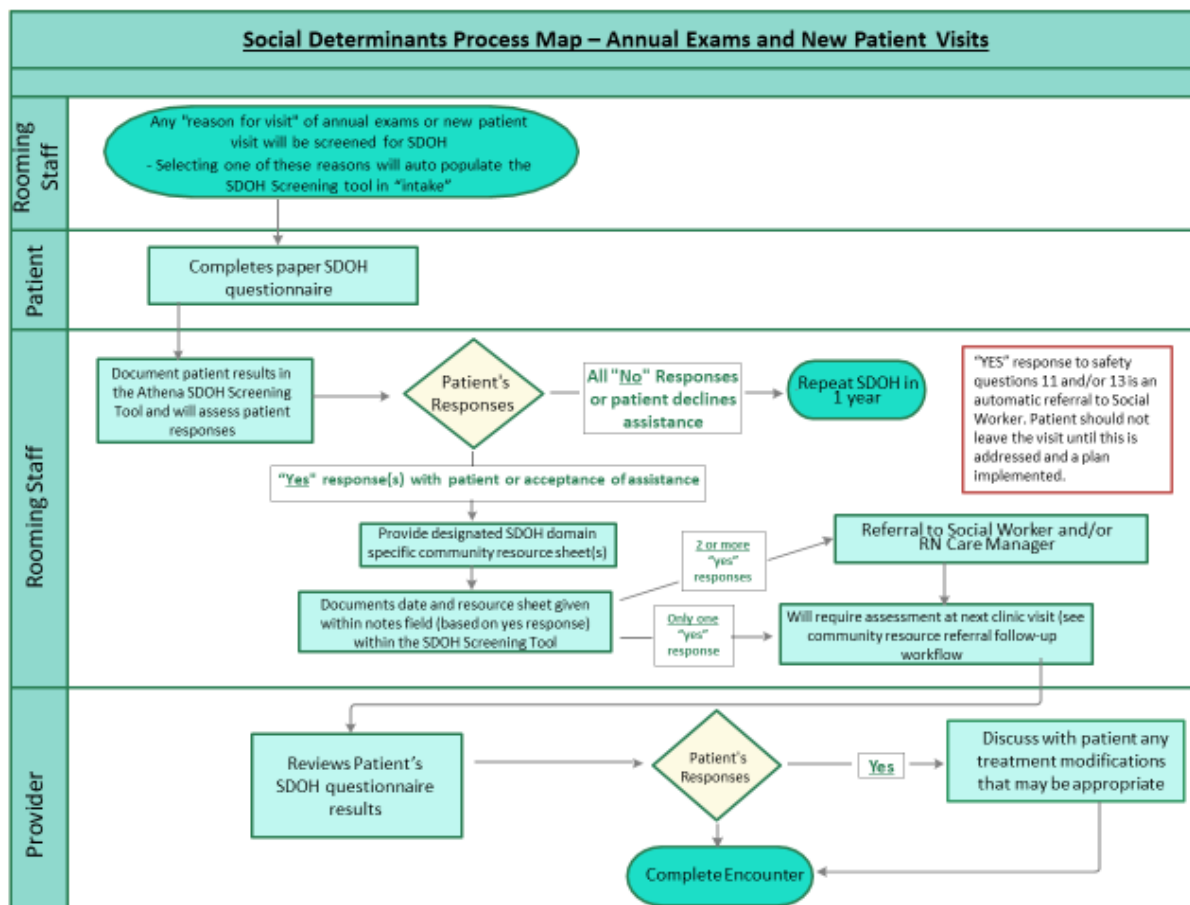
- Do you have a high school degree?<sup>6</sup>
  - ☐ Yes
  - ☐ No

### FINANCES

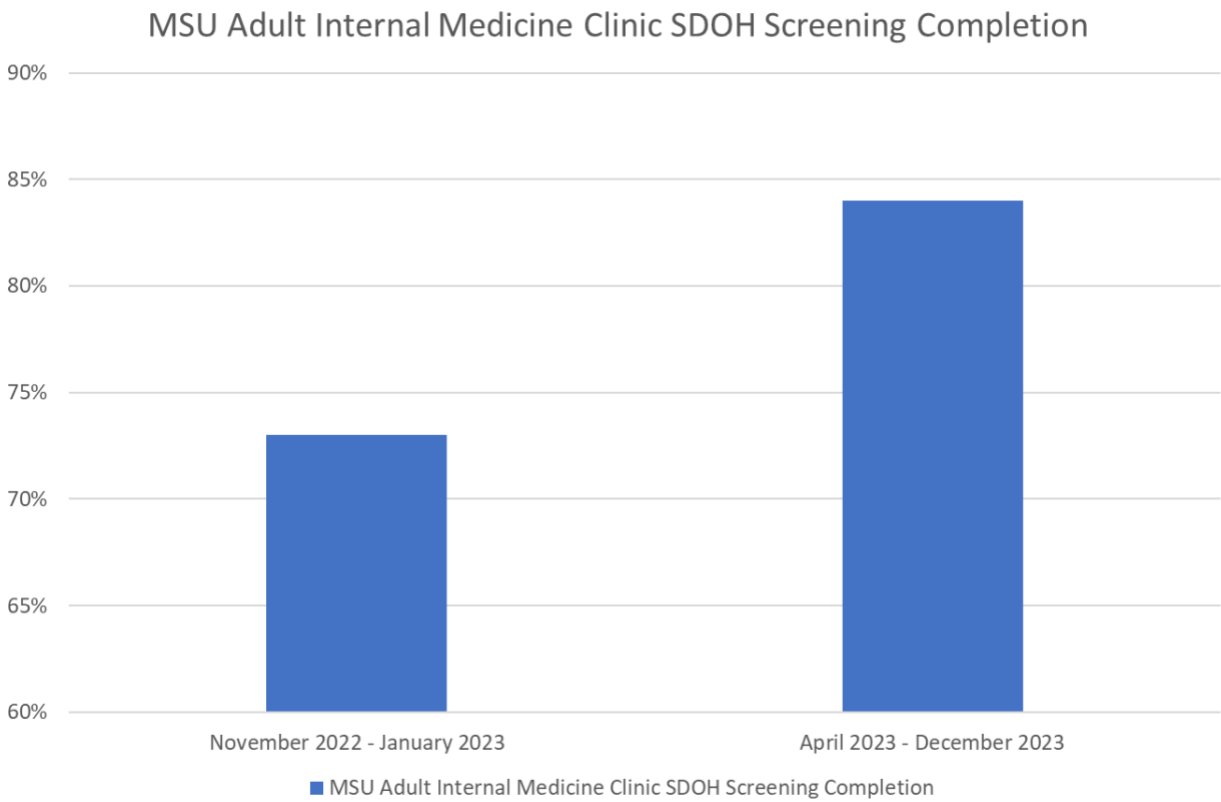
- How often does this describe you? I don't have enough money to pay my bills.<sup>7</sup>
  - ☐ Never
  - ☐ Rarely
  - ☐ Sometimes
  - ☐ Often
  - ☐ Always

### PERSONAL SAFETY

- How often does anyone, including family, physically hurt you?<sup>8</sup>
  - ☐ Never (1)
  - ☐ Rarely (2)
  - ☐ Sometimes (3)
  - ☐ Fairly often (4)
  - ☐ Frequently (5)
- How often does anyone, including family, insult or talk down to you?<sup>8</sup>
  - ☐ Never (1)
  - ☐ Rarely (2)
  - ☐ Sometimes (3)
  - ☐ Fairly often (4)
  - ☐ Frequently (5)

Appendix C

**Appendix D**



**Appendix E**

