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**Addressing Social Needs and Creating Community Linkage Pathways for Vulnerable
Populations in Primary Care Practice Settings**

Submitted to the Faculty of
Yale University School of Nursing

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Nursing Practice

Mindy M. Matthews MSN, RN, CPHQ

May 15, 2023

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This DNP Project is accepted in partial fulfillment of the requirements for the degree Doctor of Nursing Practice.

Mary Ann Camilleri JD, BSN, RN, FACHE

Date _____

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Abstract

Addressing Social Needs and Creating Community Linkage Pathways for Vulnerable Populations in Primary Care Practice Settings

Social risk factors, the social determinants of health associated with negative health outcomes, drive patient-level social needs that contribute to health inequalities, high medical cost, overutilization of services, and have a greater impact on morbidity, mortality, and quality of life than chronic diseases (Krist et al., 2020). While there seems to be a consensus on the importance of addressing social factors, most health systems lack the infrastructure to develop the screening and referral protocols required to address social needs (Alley et al., 2020). Primary care has been identified as a key setting to introduce strategies around identifying at-risk patients with social needs and linking them to community resources as they are typically the first point of health care access for most people (Valaitis et al., 2020). The goal of this project was to develop screening processes and workflows in primary care settings to connect patients to community resources using care navigational resources. A 10-week pilot was conducted at two practices. The implementation of screening tools, workflows, and referrals pathways were evaluated to understand the model's impact on care delivery and to make recommendations for scaling the processes to other practice sites. A total of 150 patients were screened, and 71 patients reported to having at least one social need. The importance of addressing social needs within insured populations was highlighted with nearly half of the patients screening positive. Providers were surveyed post-implementation using a five-point Likert scale questionnaire. They expressed positive overall feelings about the process. The project supports that integrating social factors into the provision of care moves practices towards the realization of whole-person care for the promotion of health and wellbeing

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Part 1

Addressing Social Needs and Creating Community Linkage Pathways for Vulnerable Populations in Primary Care Practice Settings

There is a growing consensus among policy makers and health care leaders that adequately addressing nonmedical care is critical to advancing population health, improving the quality of medical treatment, and lowering health care costs as estimates suggest that up to 90% of health outcomes are attributed to social, behavioral, and economic factors (Fraze et al., 2019). Evidence shows that unmet social needs such as housing, food, transportation, finances, and safety contribute to health inequities, higher medical costs, and overutilization of health care services (Krist et al., 2020). Studies have found that 68% of patients have at least one identified social need and addressing these needs decreased health care costs by 11% annually (Pruitt et al., 2018). Most organizational models for assisting patients with social determinants of health struggle in their inceptive stages, and reports have stated that establishing identification of social needs is a critical first step to the successful integration of these needs into health care systems (Brewster et al., 2020). Screening for social needs can help to identify people who may benefit from support beyond what is traditionally offered in medical practice sites promoting whole-person care, particularly for those who are marginalized and underserved (Andermann, 2018). Screening cannot be done without having the means to facilitate connections to resources for identified needs, but providers find social service systems navigation to be overwhelming, time consuming, and report that they lack the time to learn about creating community linkages (Valaitis et al., 2020). Strengthening primary care infrastructures will be required to enable care teams to assess social barriers, apply effective systems navigation, and focus on person-focused approaches to overcome population issues of social determinants of health (Valaitis et al., 2020). Organizations must make investments to support primary care practice clinical care teams in addressing the social needs of patients and integrating these

considerations into their care models to successfully decrease utilization, impact the cost of care, and improve the clinical outcomes of their attributed populations.

Problem Statement

The share of the U.S. economy spent on health care has doubled since 1980 increasing from 8.2% to 16.9% in 2018, a trend which has largely been driven by the fact that the U.S. has the highest chronic disease burden in the world (Tikken & Abrams, 2020). The rise in health care expenditures continues to accelerate as spending increased 9.7% in 2020 to reach \$4.1 trillion with the share of the economy devoted to health care spending at 19.7% of the GDP (Hartman et al., 2021). Americans have the lowest life expectancy of their international peers and more than one-quarter of U.S. adults report that they have been diagnosed with two or more chronic conditions such as asthma, diabetes, heart disease, or hypertension (Tikken & Abrams, 2020). As the cost of caring for patients continues to rise, there is an increased appreciation for the need to look beyond medical solutions to social determinants that impact health to be successful in value-based care models. Social needs contribute to higher utilization and have a greater impact on morbidity, mortality, and quality of life than medical conditions and chronic diseases have on health outcomes (Krist et al., 2020). Health systems must develop models to identify social needs in their patient populations while simultaneously creating cross-sector partnerships to bridge clinical and community resources to catalyze movement to the provision of care that is genuinely holistic and patient-centered. Connected screening and navigation programs help identify patients with social needs (such as food insecurity, housing, transportation, and the inability to afford basic necessities) and create linkages with services to overcome barriers and close gaps that impede health (Schickendanz et al., 2019). This DNP project developed a care delivery model to integrate social needs screening processes and navigational resources into the practices of primary care clinical teams. The overall goal was to fully realize comprehensive care that addresses all aspects of the health of patients by

establishing standard workflows and navigational resources to support primary care teams in addressing patient's social needs.

Significance

By some estimates, more than 95% of the trillions of dollars spent on health care in United States each year funds direct medical services even though 60% of preventable deaths are rooted in modifiable behaviors and exposures that occur in vulnerable communities (Alley et al., 2020). Vulnerable populations are defined as those "capable of being hurt" or "susceptible to injury or disease" and refer to a wide range of groups including the economically disadvantaged, the uninsured, racial and ethnic minorities, elderly and children, and those who encounter barriers to accessing care (Kim et al., 2016). The health problems of vulnerable populations are multifold and often intersect with social factors such as housing, poverty, absence of a usual source of care, and inadequate education (Kim et al., 2016). While engaging vulnerable patients with their medical care can help produce informed and activated patients, most cannot fully achieve wellbeing if they are struggling to meet basic needs as they are less capable of participating in higher-level functional activities like health navigation (Krist et al., 2020). Distressed patients are also less likely to seek medical care, adhere to care plans, or maintain healthy behaviors (Krist et al., 2020).

Screening patients for social needs is the required first step to understanding which patients are vulnerable and challenged by environmental circumstances that impede their realization of health. There are many reasons to screen for social needs including providing whole-person centered care rather than focusing solely on the disease, reducing missed opportunities for diagnosis by having all of the important information in terms of living conditions and social context, reducing "revolving door medicine" and recurrent emergency room visits by understanding and addressing the underlying causes of preventing health issues, providing more cost-effective care by intervening early and preventing hospitalization, increasing

adherence to medications and improving health by prescribing medications that patients can afford and are therefore more likely to be taken as prescribed, and providing more informed and structurally competent care (Andermann, 2018). One in four families report financial burden from managing out-of-pocket healthcare expenses, one in five families report having trouble meeting basic needs, and one-third of chronically ill adults report cost-related medication non-adherence (Patel et al., 2019). Despite calls for obtaining expanded social history at the point of care, most health care systems lack the infrastructure and incentives to develop comprehensive screening protocols and relationships with the array of community service providers that would be required to address their patient's health-related social needs (Alley et al., 2020).

Social needs screening and navigation programs have been shown to reduce total care utilization by 12.1% among high-utilizing, medically, and socially complex patients with low socioeconomic status (Schickendanz et al., 2019). If the rate of preventable hospitalizations among residents of low-income neighborhoods could be reduced to the level of residents of high-income neighborhoods, there would be 560,000 fewer hospitalizations a year resulting in an annual cost savings of \$4 billion (Moy et al., 2013). To these aims, health care providers operating under value-based payment models such as capitated insurance designs, accountable care organizations, and pay-for-performance programs have a business case for identifying patient's social risks and offering support to help patients address social needs (Brewster et al., 2020).

Review of Literature

Search Strategy

A comprehensive electronic search was completed. Databases searched included Scopus and Cochrane Library. Key terms included were "social needs," "primary care," and "social determinants of health." Concept category results were combined using the appropriate

Boolean operators (AND, OR). Inclusion criteria were full text, English articles published in the last three years (2018-2020). The search yielded a total of 929 journal articles after duplicate removal. Exclusion criteria were patients with a specific chronic condition, Medicaid, or those being cared for in Federally Qualified Health Centers. There were 509 articles excluded, and 420 articles were screened. Following title and abstract review, 43 articles remained. Full text review yielded 14 articles for literature review with nine included in the evidence. A PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flowchart describing the review is presented in Appendix A. Nine exemplar articles were used to support the justification of the efforts of the project. Original source citations are included in the references for some items used for the review that were referenced in the literature.

Social Determinants of Health: Terminology

The industry consensus around the taxonomy of the terms used to classify nonmedical needs informed the approach for the literature review and references, which focused on the terms "social needs" as this best captured the level of intervention for the project.

Understanding the terminology around nonmedical needs that impact the health and wellbeing of patients is important when engaging in dialogue around this topic for content clarity. Health care stakeholders, including payers, purchasers, providers, and patients have worked to delineate a definitive taxonomy for social determinants of health, social risks, and social needs to identify factors impactable by health care systems (Khanna, 2020). Despite the widespread use of the term social determinants of health in health care reform initiatives, there is a distinction between social needs which are individual patient needs, and social determinants of health which are upstream structural factors that cannot be addressed at the individual level (Tobin-Tyler & Ahmed, 2020). The World Health Organization defines social determinants of health as "the conditions in which people are born, grow, live, work, and age [that] are shaped by the distribution of money, power, and resources at global, national, and local levels" which

influence a person's opportunity to be healthy, risk for illness, and life expectancy (Davidson et al., 2020). The Community Preventive Task Force broadens the definitions of social determinants of health to include conditions that affect a person's ability to earn a good living, live and work in a safe and healthy environment, and effectively use available resources, including health care resources (Community Preventive Services Task Force, 2020). Social risk or social risk factors are the social determinants of health that are often associated with negative health outcomes, but do not always reflect patient priorities or perceived needs (National Academies of Sciences, Engineering, and Medicine, 2019). Social needs refer to the individual patient preferences and priorities about their health and treatment related to social risks (Davidson et al., 2020). This is this level that should be the focus of health care interventions as they are modifiable by providers and clinical teams.

Synthesis of the Literature

The findings of the literature review highlighted the importance of assessing and addressing nonmedical aspects of the patient's health and life circumstances in the management of chronic disease in primary care settings. Integrating social needs into the treatment equation is imperative for the full realization of comprehensive, patient-centered care. The literature asserts that while providers acknowledge the importance of this, many do not feel well-equipped to address social care gaps once they have identified them. Research supports that multidisciplinary care delivery models that utilize non-physician roles such as care managers and care navigators are needed for practice transformation that evolve clinical operations beyond a medical focus to link patients with resources in the community to address social factors that impact wellbeing.

Literature Findings

Identifying Social Needs in Primary Care Settings

The ability of primary care to impact disease is modulated by social factors and social determinants of health, and it is imperative to understand how these factors impact each individual's circumstances and potentially create limits to their ability to self-manage their conditions (Khanna, 2020). In order to accomplish this level of understanding, an assessment must be made to uncover social needs through screening. Primary care settings are ideal for implementing social needs screening and addressing them once identified since these settings provide regular contact, preventive efforts, and an established relationship that facilitates better continuity of care than is offered in other health care settings (Boch et al., 2020). The continuity of care also presents ongoing opportunities to address patient's social needs over time as well as sharing responsibility for care with a broader clinical team to support working with the community (Andermann, 2018).

Primary care practices need to implement processes to assess social risks to help patients fully relay their needs and collaboratively create care plans that incorporate their values and preferences as well as their personal, social, and clinical contexts. The social needs assessment will allow the team to establish an informed system to connect patients with community resources in order to help patients to achieve their health care goals (Krist et al., 2020). A comprehensive and personalized plan of care that defines the patient's goals, optimizes chronic disease management, includes coordination of care that addresses health and nonmedical issues, and provides a documented record of this is a key strategy to support a shared understanding of the actions required to address the needs of complex patients (Valaitis et al., 2020). Enhanced care planning to address unhealthy behaviors, mental health needs, and social risks can potentially do more to influence health than traditional medical care (Krist et al., 2020). By creating care planning tools, redefining some primary care roles to function as

patient navigators, and creating partnerships with community programs, primary care practice teams may be able to meaningfully address complex patient social needs issues (Krist et al., 2020).

Studies have found that although most providers support social needs screening, only about a quarter studied routinely screened patients, reporting barriers such as lack of time and lack of resources (Tobin-Tyler & Ahmed, 2020). Other common themes explaining their reluctance to ask about and address social needs include being overworked, not knowing how to ask about social needs or what to do about it once they find them, questioning whether addressing social determinants is part of their role, lacking role models and support in helping patients address social needs, being fearful of opening "Pandora's box" by embarking on this path, and feeling hopeless or powerless in the face of such daunting challenges (Andermann, 2018). Some consider actions on social determinants to be beyond the purview of the health sector and question the value of talking to patients about these issues as this does little to change the larger political and structural forces at play within society (Andermann, 2018). To overcome the barriers of the practice environments and perceptions of clinicians regarding social determinants of health, it is imperative that clinicians feel that they have the support and resources to provide the care for their patients that extends beyond what can be provided within the traditional structure of their medical practices.

Program components that that help to increase clinician self-efficacy for social needs screening and care planning include institutional support, clear screening protocols, initial and ongoing trainings, and the facilitation of access to referral support services (Andermann, 2018). Effectively addressing the totality of a patient's chronic conditions, health behaviors, mental health, and social needs can be more challenging than traditional medical services as this can involve dozens of hours of contact by a multidisciplinary team over an extended period and activities that are generally outside of the scope of traditional primary care activities (Krist et al.,

2020). Because social risk screening involves complex processes with many potential points of failure, implementation is likely to depend on physician practices having certain prerequisite infrastructure components and skills, which could include information technology to support screening and having established processes for adapting care delivery systems within the practice (Brewster et al., 2020). Successfully embedding addressing social needs into clinical workflows requires the transformation of the entire practice. The collective support of a multidisciplinary team, including practices nurses, care managers, and navigators has been shown to help providers facilitate community linkages for those with chronic conditions and lessen some of the challenges they experience in connecting individuals with social services (Valaitis et al., 2020).

Care Navigational Resources

Social systems care navigational resources are key to successfully building processes to address patient's social needs giving providers much needed support in connecting patients with community resources. Care Navigators as members of primary care practice team can do the work of creating those connections for patients and play an important role in healthcare systems as a mechanism to improve the health of populations. Practice embedded Care Navigators assume roles that go beyond those typically played by members of conventional primary care teams (Silverman et al., 2018). Studies have found that they play four key roles in caring for patients: identifying and addressing gaps in participant knowledge of their disease and self-management skills; identifying socioeconomic obstacles to self-care and connecting patients to appropriate community resources; helping patients to navigate the health care system; and providing time and support (Silverman et al., 2018). Strong primary care and social services relationships are rare as providers have a frustration with the complex nature of social service systems navigation, and social services struggle to communicate with primary care leading to poor care coordination (Valaitis et al., 2020). Care Navigators have the unique ability

to provide bridges between community and health care services and play a role that could address health inequities through culturally appropriate health education, individual community and capacity building, advocacy, informal counseling, and social support in diverse settings (Kin et al., 2016).

Project Model

The model for implementation of this project is the Plan-Do-Study-Act (PDSA) Method, which originated from Walter Shewhart and Edward Deming's industry articulation of an iterative four stage process for systems change (Taylor et al., 2014). Delivering improvement in healthcare requires the alteration of processes within complex systems that change over time in predictable and unpredictable ways, and effective interventions need to be developed iteratively to adapt to the local context and respond to unforeseen obstacles and unintended effects (Taylor et al., 2014) Implementing processes to connect patients with complicated social issues seen in primary care practice sites to a labyrinthine network of community resources is a challenging endeavor. These initiatives will require efforts that are particularly nimble in adapting to challenges as they arise and are able to integrate learnings into project plans as implementations progress throughout an organization. The pragmatic principles of PDSA cycles promote the use of a small-scale, iterative approach to test interventions enabling rapid assessment and providing the flexibility to adapt processes accordingly to ensure fit-for-purpose solutions in complex settings through measuring data over time to understand natural variations in systems, increasing awareness of factors influencing the processes or outcomes, and understanding the impact of the intervention (Taylor et al., 2014). Using the PDSA method for change implementation will allow for the freedom to act, assess impacts, learn, make adjustments to build evidence for change, and engage stakeholders more confidently as the scope of the intervention increases without exhausting organizational resources in the process.

The PDSA four-stage cycles were followed for the project through small scale tests conducted in a limited sample of patients within two primary care practice sites. In the “plan” phase, the operational aspects of the project work and tools to monitor and evaluate the efforts were established. A multidisciplinary team was identified as the “task force.” The team consisted of individuals from organizational leadership, clinical operations, project management, information technology, business intelligence/analytics, physician leaders, and front-line clinical staff. The role of the taskforce was to facilitate all functional aspects of screening patients, implementing community linkage tools, program educational support, data and analytics reporting, and to ensure communication throughout all phases of the project.

The “do” phase of the project educated the site practice leaders and frontline clinical staff at the pilot practices sites on the workflows and tools to screen patients and address social needs. The process went live with implementation in the practices embedding the developed processes as part of the provision of care to new patients. Data was collected during this phase to assess the effectiveness of the implementation efforts.

During the implementation phase, the task force continued to meet routinely to ensure fidelity and to “study” the process data and feedback from the staff doing the work. Based on the data and feedback of the effectiveness of the screening and connection workflows, the work and tools were modified as needed.

In the “act” phase, modifications were quickly made to remove any barriers and challenges that impeded achieving outcomes. The learnings from the previous phases informed the next cycles of practice engagement in rolling out these processes. The application of the PDSA Method to the work of this project is illustrated in Appendix B.

Organizational Assessment

The organization where the project was conducted operates employer-based onsite health and wellness clinics that offer a comprehensive range of services that include primary care, specialty care, occupational health, behavioral health, dental, vision, pharmacy, fitness centers, wellness activities, and ancillary services. The company is increasingly focused on providing wholistic, patient-centered care with accountability for meeting both medical and nonmedical needs as market pressures are requiring the advancement towards value-based care. This DNP project is in alignment with the organizational culture that strongly supports initiatives to address social determinants of health and has an openness to consider innovative approaches to address nonmedical needs.

SWOT Analysis

A SWOT analysis (Strengths, Weaknesses, Opportunities, and Threats) of the organization and the relevant aspects of the current environment was conducted for this project.

Strengths: Beyond strong cultural and leadership support, the organization has other system strengths that align with the aims of the project. There are dedicated care management resources embedded in the practices servicing larger populations, and their efforts set the foundation for this work. There is a high degree of visibility of population health efforts and a push to develop innovative care models aimed at reducing cost and utilization to be successful in value-based arrangements. The organization also has a strong commitment to issues of social welfare, which has created a culture that is open to investing in health efforts that go beyond medical considerations.

Weaknesses: There is a high degree of variability in the care team models across practices and the clinical resources that are available at the sites. Care collaboration can be a challenge for outside entities looking to partner on patient care with the structural variety of the primary care services. Decision making for services is often driven by immediate fiscal priorities and

market pressures, creating challenges for generating support for additional resources required for more intensive care models. Like many healthcare organizations in the current environment, the organization struggles with limited financial, operational, and clinical resources, a challenge that has grown exponentially with the pandemic. The organization undertook a massive multi-state electronic medical record (EMR) implementation in the months before the pandemic which resulted in additional resource constraints in an already difficult climate.

Opportunities: The organization enjoys positive relationships with clients that can be leveraged in contracting and negotiations to support advancing innovative initiatives like addressing social needs. They also are active in advocacy efforts at the state and national levels to advance community health and wellbeing opportunities. There is strong collaboration among the competing health systems around social determinants of health that is being led by the statewide Health Information Exchange (HIE). The HIE is motivated to standardize the data coming in from the disparate health system technologies for the purposes of integrating nonmedical data into the stratification of the populations. These efforts have led to the creation of other groups working on care coordination standards to create consistent processes across all health systems for community resource partners, which the project organization can leverage.

Threats: In general, ongoing issues surrounding the pandemic have impacted the availability of resources in every area of the community. Resulting financial strains have limited the amount of resources clients reasonably can devote to investing in social needs benefits for their employees at a time when this support is increasingly needed. Constraints on households have increased the demand for the services of community resource agencies making meeting the growing needs even more challenging, and this has limited their capacity to support the health systems initiatives. Health care systems, payers, and government agencies still are continuing with the development of their own solutions to address issues around social needs despite the recent gains that have been made to bring organizations and agencies to the table to work

together to address social determinants of health. This fragments community efforts and engagement as agencies do not have the bandwidth to track the different clinical models of referral sources or use disparate technologies for coordination.

Part 2

Methods

Project Goals and Aims

This DNP project developed a care delivery model to integrate social needs screening and navigational resources into the practices of primary care clinical teams. The overall goal was to fully realize comprehensive care that addresses all aspects of health by implementing a program to address nonmedical needs and to evaluate the success of embedding this practice transformation initiative into standards of care.

The aims of this project were:

1. To develop standardized social needs screening processes and practice guidelines for community resource referral pathways.
2. To implement screening tools, workflows, and referrals pathways utilizing Care Navigators and evaluate the model's impact on care delivery.
3. To make recommendations to scale the process to all primary care practice sites across the organization.

Aim 1. To develop standardized social needs screening processes and practice guidelines for community resource referral pathways.

- The project was implemented at two large practice sites serving populations of industrial workers and their families. All patients are insured through an employer-based commercial health benefits plans. The client leadership was highly engaged in care innovation, including addressing social needs.
- The population targeted for screening was adult patients (ages 18 and over) new to the practice. A new patient is defined as a patient that has not been seen in the clinic in the last three years. New patients are scheduled for one-hour visits and receive a more

comprehensive intake assessment. The longer appointments better supported the inclusion of social needs screening as an additional element.

- The project implementation timeline (Appendix C) and organizational communication plan (Appendix D) ensured that relevant organizational leadership and clinical staff at the pilot practice sites were informed of the project scope, activities, schedule, and had avenues for feedback during the program development and implementation.
- A team comprised of key leadership, clinical stakeholders, and front-line staff formed the project task force that supported the project efforts for the duration of the project. Meetings were held with task force members leading up to project implementation to work on developing practice workflows, navigational pathways to community resources, and training.
 - The task force was led by the Director of Clinical Quality and included senior management, clinical services management, clinical systems analysts, population health analysts, EMR trainers, client medical directors, and frontline practice staff.
- The task force adapted existing screening workflows in the EMR to ensure consistent, standardized screening practices at both pilot sites. The domains included in the screening were financial resource strain, food insecurity, social connections, transportation needs, and housing instability. The task force also developed processes to integrate community resource navigation and referral tools at the point-of-care. Training materials were created by the group to educate the staff responsible for conducting the screenings and connecting patients with resources to meet identified needs.
- Information technology and platforms were optimized to support the clinical processes by the clinical systems analyst. This included a patient identification tool from a

commercially available electronic medical record application for standardized social needs screening questions, embedded navigation and referral tools using FindHelp.org, and patient risk stratification evaluation logic embedded in the EMR assessments.

- Analytic tools and reporting dashboards populated in the electronic medical record using clinical data were created to monitor the progress and outcomes of the project.
- The project details were presented to leadership for acceptance prior to implementation.

Aim 2: To implement screening tools, workflows, and referrals pathways utilizing Care Navigators and evaluate the model's impact on care delivery.

Implementation included the following steps:

- Virtual, interactive educational sessions were held for the providers, clinical support staff, and practice leaders that were involved with the functional implementation of the social needs pilot. Live virtual meetings were held at various times over the course of a two week period to train on patient screening using the EMR tools and practice workflows for connecting patients with community resources. The training was recorded for those unable to attend the live sessions.
- The lead medical assistants fulfilled the role of Care Navigators at each practice acting as subject matter experts for the project work and were responsible for the functional work of connecting patients with community resources.
- The clinical work of the project went live with the trained care teams in accordance with the established timeline by incorporating the developed workflows for social needs screening into the adult new patient assessments and utilizing embedded point-of-care tools to refer patients with identified needs to resources in the community.
- The project task force held fidelity meetings for the duration of the implementation timeframe for the ongoing evaluation and optimization of the workflows. Process metrics were obtained using the dashboards developed in the EMR and reviewed to ensure that

the process was successfully integrated into standard work. Issues with technology systems, workflows, and patient engagement identified through the reports or feedback from the staff and task force were addressed in a timely manner per the Plan-Do-Study-Act rapid cycle improvement process.

- Process metrics were reviewed biweekly. Reviewing data real-time informed the team of the weekly progress of the project and helped with early identification of barriers that impeded the work. Metrics reviewed included:
 - Total number of patients screened for social needs
 - Total number of patients with identified social needs
 - Total number of Care Navigator encounters with patients with identified needs
- Communication to organizational leadership and clinical staff occurred throughout the duration of the program implementation as identified in the organizational communication plan.
- The implementation phase ran for 10 weeks.

Evaluation

- Evaluation of outcomes included the process metric results totaled at the end of the implementation phase and the results of a survey disseminated post-implementation assessing the provider experience with the process. The data was evaluated using descriptive and univariate statistics.
- Deidentified data was collected from the EMR through the developed dashboards and chart audits as needed. There were three categories of outcome metrics: Patient Screenings, Types of Encounters, and Social Needs.

- Patients Screening:
 - Patients screened (total count of unique patients screened for social needs)
 - Rate of screened patients (number of unique patients screened for social needs/ total number of new patients)
- Types of Encounters:
 - Encounters with patients screening positive for social needs (total count of care navigator encounters with patients screening positive for social needs excluding initial screening visit)
 - Average number of Care Navigator encounters per patient screening positive for social needs
 - Number of referrals to community resources agencies made for patients screening positive for social needs
 - Number of encounters that were closed (referrals made to community resource agency completed by the patient)
- Social Needs:
 - Rate of patients screening positive for social needs (count of unique patients screening positive for one or more social needs/count of unique patients screened for social needs)
 - Total identified social needs (total count of social needs identified in all patient screenings)
 - Average number of social needs per patient screening positive
- Deidentified data was collected from results of a survey aimed at assessing the clinician's experience with screening patients for social needs and their ability to address needs once identified. Providers were educated about the survey and the importance of their role in providing feedback on the process. This survey was disseminated through

email to approximately 23 process users per the current organizational process for conducting staff surveys. The surveys were distributed the week following the close of the implementation phase.

- The Social Needs Experience Survey included six five-point Likert scale questions and one open-ended question that gave respondents an opportunity to provide narrative feedback about their experience (Appendix E).

Patient satisfaction was considered as a possible metric for the evaluation but was found to not be feasible at this time due limitations in the current commercially available system in use as its processes are not configured to distinguish social needs patient visits from other office visits. It is recommended that patient satisfaction be included in future efforts to understand the patient's experience with the screening and resource navigational processes and the effectiveness in meeting their needs.

Aim 3. To make recommendations to scale the process to all primary care practice sites across the organization.

Scalability

- Outcomes of the project evaluation were reported to leadership for review and approval for expansion and organizational communication.
- Scaling of the social needs screening assessment and community resource navigation will be multi-state to support all patients at the primary care practice locations.
- The program will be used to inform the future creation of a centralized resource team that will utilize the processes developed through the project. This will allow expansion of social needs assessment and resources to those populations who do not have access to onsite primary care, thereby ensuring that all patients receiving care have social needs addressed.

Sustainability

- The social needs navigational resources will be marketed to current and potential clients with per employee per month (PEPM) pricing with the goal of moving the contracts to a shared saving model to advance the payment structure. Including the social needs assessment as a value-based care strategy, a first of its kind approach, has greater opportunity for expanding social support services and providing cost savings opportunities while increasing revenue through a PEPM as compared to the standard cost-plus model.

Dissemination Plan

- Abstracts will be submitted for podium presentation at national conferences as well as peer-reviewed publications.

Statement Related to Human Subjects

This project was deemed to be a Quality Improvement project by the Yale University Institutional Review Board (IRB). There are minimal risks to the participants of this project.

Part 3

Systems, Policy, and Business Implications

Business Case and Leadership Engagement

Leadership and Stakeholder Engagement

The organization is led by the Senior Leadership Team (SLT). The SLT, led by the president of the company, is comprised of the highest ranking leaders of each department and functions as the ultimate decision making body for the organization. The organization currently reports to the corporate board of the parent company, a non-healthcare operating entity, but is in the process of developing a separate board for the healthcare division. The project leader, the Director of Clinical Services, reports directly to the Chief Medical Officer, and is a member of the SLT. This position is responsible for clinical operations nationally and has the formal power to implement the work of the project in the sites as an executive leader.

The project of implementing social needs screenings and creating community linkage pathways in primary care clinics directly supports the organization's vision and mission. Integrating screenings for nonmedical needs and connecting patients with resources to meet these needs advances their aim of a patient-centric approach. Addressing social needs in practice settings to help to identify people who may benefit from support beyond what is traditionally offered at medical sites is an innovative intervention that promotes whole-person care (Andermann, 2018).

A multidisciplinary task force of leaders and staff from multiple departments were involved in the project efforts to obtain input from all levels in co-designing the processes of screening patients and creating navigational pathways. The project task force regularly met prior to implementation and held touch bases post go-live to ensure that the processes were successfully embedded into practice workflows and changes were made as needed through the

rapid cycle improvements of the Plan-Do-Study-Act implementation model of this project. This approach sought to build consensus by synthesizing diverse needs and perspectives, facilitate genuine opportunities for feedback, and generate support at all levels of the organization (Dye & Garman, 2015). Demonstrating transformational leadership was key in encouraging innovation, building trust, inspiring a collective vision, and creating connections in ways that raised the level of motivation of the team (Northouse, 2019). Taking the time to truly engage teams up front and inviting them to develop solutions has been found to lead to positive results and successful outcomes (Lingo & McGinn, 2020).

Business and Financial Considerations

The financial resources invested to implement and evaluate the project were primarily used to fund the two positions that were responsible for the work of care navigation, the information technology resources required to optimize the electronic medical record, and the business intelligence resources to build out the analytics. The project budget included resources to train the clinical staff and key stakeholders prior to implementation. The cost for the first year of the project will be \$115,000 after the pilot phase. This includes the hire of one full-time Registered Nurse and one full-time Care Navigator to support expanding capacity for potential growth to additional populations. The total cost of the project over four years is projected to be around \$499,000.

The return on investment for this project has the potential to bring in significant revenue for the organization. Since this is an intervention aimed at reducing the cost of health care expenditures for the client, there would be a \$1.50 PEPM charge for offering this population health clinical service for a group's eligible lives. By way of example, a PEPM charge of \$1.50 PMPM for a population of 24,734 covered lives which would generate \$469,000 annually. To ensure that this work produces positive outcomes for employers, a portion of PEPM funding would be put at risk starting in Year 2 of the program permitting the focus to be on infrastructure

build in Year 1. After the first year, a percentage of the PEPM payment would be returned to the client if utilization targets were not met in the calendar year to build a shared savings model. This amount would start at 15% in the Year 2 and increase by 5% each year until 25% of the payment was at risk.

The goal of this pilot was to create the foundation for social needs screening program that can be scaled in the future. Once scaled, the long-term objective would be to reduce medical care utilization and improve the health and wellbeing of the client's employees and their families. Having services that are tangibly directed at reducing the total cost of care and improving outcomes will position the organization to be more competitive as the overall healthcare industry shifts away from fee-for-service toward value-based care and shared-savings models as a payment and care strategy.

Risk Assessment

The organization was experiencing a significant amount of turnover at all levels of clinical and administrative staff, which posed a risk to the project. To mitigate potential disruption that could be caused by knowledge gaps, educational materials and computer-based training modules were created to preserve the information that was presented during the pre-implementation phase of the project. All new hires will undergo the same training and support that was given at the beginning of the initiative. This will also serve as an ongoing resource to trained staff who may have questions or require resources to reinforce learning.

Part 4

Results

Patient Screening

A sample of 150 patients screened for financial resource strain, food insecurity, social connections, transportation needs, and housing instability was obtained for the study. It took eight weeks to reach the sample size goal. Only patients who had all domains addressed as a part of their new patient office visit evaluation were included in the sample. Many patients received incomplete screening with only some of the elements addressed at the visit especially in the early phases of the project. As a result, the total rate of screened patients across all new patient visits remained lower when including visits with incomplete screening. The total percentage of patients screened during the same eight week timeframe for one pilot site was 12.0% and the rate for the other site was 17.3%. This was an increase from the baseline organizational rate of 7.1% of patients screened in 2022.

Social Needs

Out of the 150 patients screened for all social needs domains, 71 patients were identified as having one or more needs representing 47.3% of the sample population. The average number of needs reported per patient was 1.3 needs. A total of 92 individual needs were reported across all domains in the screening process. The domain most identified by patients was social connections with 53 patients expressing that they were experiencing some degree of social isolation (Figure 1). Transportation needs were reported least often with only three patients (2.3%) reporting that they were having issues getting to where they needed to for daily living. The majority of patients screened (55 patients) were assessed to have one identified need in any domain (Figure 2). Thirteen patients reported to having two needs, and

three patients reported to having three or four needs. There were no patients that reported having more than four needs during their office evaluation.

Figure 1

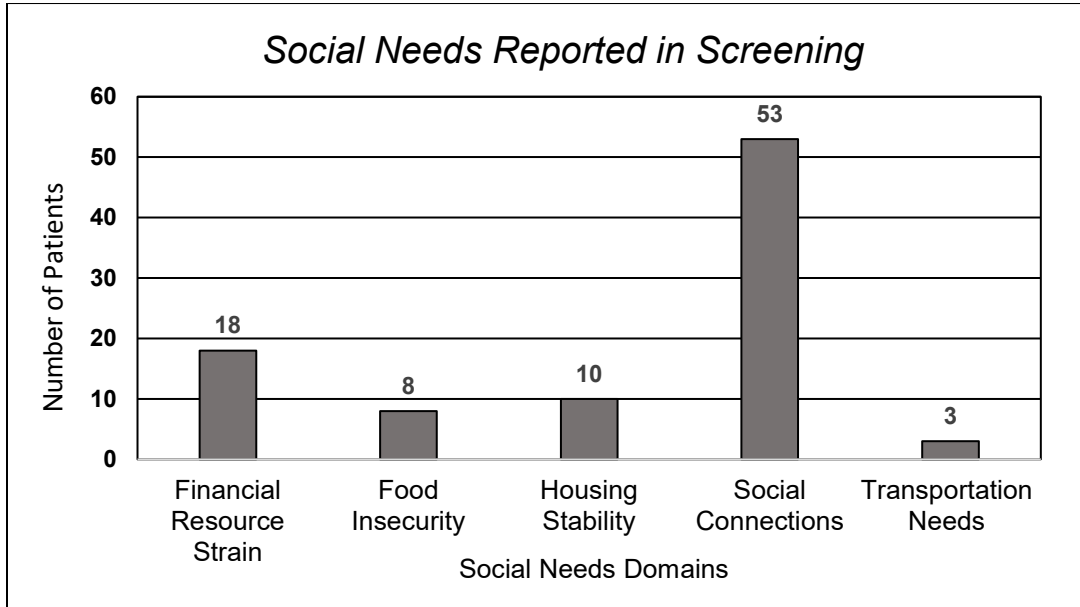
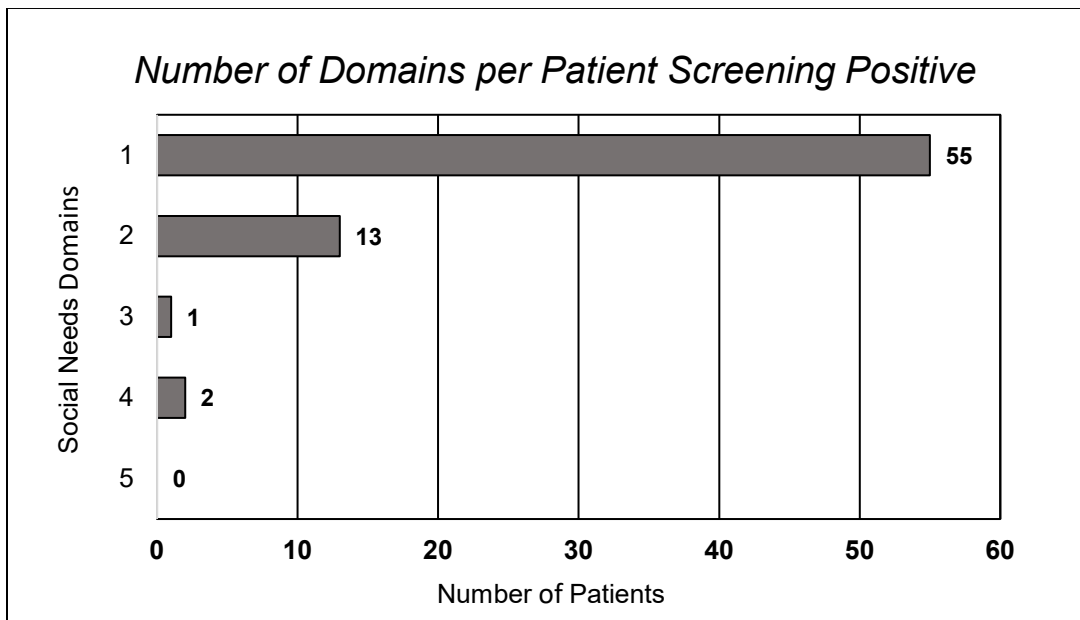


Figure 2



Types of Encounters

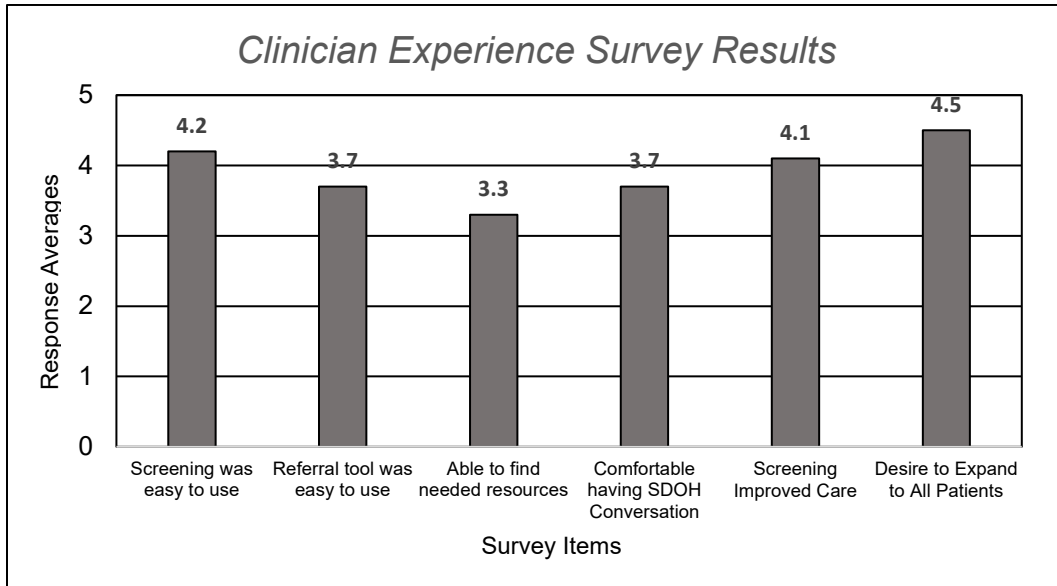
Care Navigators were able to successfully engage with 57 patients identified through the screening process. There were 74 total encounters where the Navigators were able to connect with patients. Outreach attempts where the Navigators were not able to reach the patient or engage in substantive dialogue around social needs were not included as an encounter for the purposes of this study as these attempts were not consistently documented by staff. A total of 37 referrals to community agencies were identified through chart audits. Due to the nature of the narrative documentation of referrals and the short pilot window, data on referral closure was not able to be obtained to assess if the patients followed through with the referral.

Provider Experience Survey

The five-point Likert survey aimed at assessing the providers experience with screening patients for social needs and community resource care navigation was distributed to 23 providers at the pilot practice sites. The surveys were returned by 11 providers (seven Physicians, three Physician Assistants, and one Nurse Practitioner), which was a response rate of 47.8%. The lower response rate was thought to be due in large part to the number of agency providers at the sites who had moved on to other assignments at the time the survey was distributed. The responding providers largely reported positive sentiments about the screening and navigation processes (Figure 3). The item that providers scored highest was their desire to expand the process to all patients with some reporting that they would like implement these workflows beyond new patient visits in the open-ended question. Providers scored the ease of use of the referral tool and being able to find needed resources lowest. This coincided with some of the feedback given during the fidelity meetings as several reported that the tools put in place did not provide them with appropriate resources for their patient's needs when searched. They survey results also showed that there is still opportunity in supporting the providers in having conversations around social needs so that they feel comfortable having these

discussions with patients. Brief comments were returned on the open-ended questions on four of the surveys. All expressed positive sentiment, but the respondents did not provide any breadth of detail on things that went well or did not do go well with the implementation and no themes were noted.

Figure 3



Part 5

Discussion and Conclusions

Discussion

Discussion of Findings

These findings demonstrated that integrating social needs screenings into primary care patient assessments uncovers barriers to health and wellbeing that would have not been otherwise reported in evaluations solely focused on medical needs. In early conversations with organizational leaders, it was expressed that these efforts may not show much of an impact as the populations of onsite health and wellness entities were almost exclusively employees and their dependents with private commercial insurance. In the two pilot practice sites, nearly half of the patients in the sample reported social needs when a comprehensive approach to screening was integrated into the assessment, which supports the applicability to fully evaluating the health of all individuals. The developed care delivery model that integrated social needs screening and navigational resources into the practices of the primary care clinical teams was successful in identifying nonmedical risk factors of working individuals and their dependents. This highlights the importance of implementing organizational strategies to address issues around social determinants of health for all populations within primary care settings to achieve population health and move the needle on cost and outcomes by broadening views of comprehensive care beyond exclusively medical considerations.

The employed PDSA study model supported the work efforts by allowing for the alteration of processes with timely, iterative interventions to respond to obstacles that arose throughout the expedited project timeline. The task force team was able to integrate feedback to rapidly assess the effectiveness of the implemented interventions, adapt processes accordingly, assess the effort impacts, and dynamically adjust the workflows to integrate learnings. This was

of paramount importance as significant barriers were uncovered with some of the data collection tools and the clinical teams understanding related to the screening components and identification of resources. The team took an active approach in reaching out to providers to elicit feedback through interactive dialogue as the weekly assessment of the data reflected potential issues. The ongoing evaluation and continuous optimization of the workflows during the 10 week implementation window primarily was focused on the reinforcement of education and screening practices. A deeper understanding of the care navigation process would require a longer timeframe as anecdotally the patient engagement process was reported to be time intensive. Initial connections required multiple attempts to be successful in identifying resources that would potentially be appropriate for the identified needs. Having improved tools and documentation practices for care navigation will be required moving forward to fully understand the effectiveness of the processes around resource identification and creating closed loop connections where patients successfully engage with resources that address their social risks.

Modifications and Recommendations for Scalability

A gap in understanding of what constitutes a comprehensive social needs assessment was uncovered in the initial weeks of the pilot. Clinical team members verbalized having sufficient knowledge after training, but early data showed that this may not be the case when screening numbers on the dashboards remained low. Individual follow-up conversations highlighted that there were varying levels of comprehension of the basic definitions of social needs. Inquiries uncovered that providers believed that they were screening for these elements by asking questions about smoking, alcohol use, physical activity levels, and depression. This interpretation was found to be pervasive across multiple conversations. The issue also impacted the process of care navigation process as clinicians were providing patients with resources to address those elements and not the social needs domains that were within the scope of the project. For future educational efforts, assumptions should not be made about the clinical team's

baseline knowledge. Educational support should assume that the audience may have a limited understanding about patient social needs and the appropriate resources to address those needs. Subsequent trainings must include the fundamentals of social determinants of health and reinforce the importance of addressing all domains as a part of a comprehensive patient assessment. Organizations must also ensure that sufficient resources are dedicated to training those at the point of care to ensure successful embedment into practice workflows as consistent reinforcement may be required to ensure staff competencies on all aspects of the project.

A review of the appropriateness and universal applicability of the questions should also be considered for future expansions of social needs screening. Commercially available EMR foundation questions were used for the pilot, but potential issues were identified about the structure of those questions. Concerns around one specific question in the social connections domain were raised by members of the clinical teams and the task force. The question asked about how often one attends church or religions services. It was thought that many people do not attend church or have any strong affiliations with religions groups making this a very narrowly focused way to gauge potential social isolation. Social connection concerns were found in 72.7% of the patients screening positive and 35.6% of the population screened. The specific nature of the question may have led to an inflated rate of positive screenings in this domain. It is important that every effort be taken in subsequent expansion efforts to ensure that the questions are inclusive of all lifestyles and situations to accurately identify patients that need additional clinical resources to address social determinants of health barriers.

Stronger engagement of the care navigation staff should be a significant focus of subsequent work efforts addressing social determinants of health in practice settings. Most of the initial pilot work was primarily around engaging and assessing the providers experience with the tools and resources to identify social needs and connect patients with resources to meet these needs. The manual nature of assessing care navigation through chart audits identified

opportunities to have better developed tools in the EMR and defined workflows to generate a structured analysis to assess the success of the efforts of the care navigation staff. Stronger guidance around the outreach and patient engagement for patients screening positive also will improve iterations moving forward. The preparation and implementation should equally focus on the activities of staff doing the work of care navigation. Activities to elicit feedback from non-provider staff through the PDSA cycle and survey assessments should be equal to that of the providers involved in the work to evaluate the process continuum from initial screening through closing the connection loop as the frontline staff seemed to have more involvement in that later stages. The project reinforced that addressing social determinants of health is a true practice transformation effort that will require the engagement of the multiple members of the primary care team.

Conclusion

The work of this project highlighted elements that are key to developing social determinants of health programs aimed at addressing patient social needs in organizations that are less mature in integrating these elements as part of their care models. Comprehensive education that takes a novice learner approach is foundational to embedding these processes into practice workflows and should include all clinical staffed involved in screening and creating resource linkages. Equal attention must be given to all staff roles in the process development and analysis throughout each phase of the project to have a full understanding of the effectiveness of the screening and care navigation processes. Addressing social needs and creating community connections is imperative to comprehensively assessing the health and wellbeing of all populations of primary care patients. Nearly half of the sample population of fully-insured individuals identified one or more social risk factors that have the potential to impact health and wellbeing demonstrating the applicability of addressing social needs in all populations seen in primary care practices. As organizations create strategies that advance

their attributed lives towards value-based care aimed at improving outcomes and cost, investments need to be made to support clinical teams to address the social needs of patients and integrating efforts to connect them to resources in the community into their models of care. Strengthening primary care infrastructures will be key to collectively overcoming the population issues of social determinants of health and promoting the overall health of communities.

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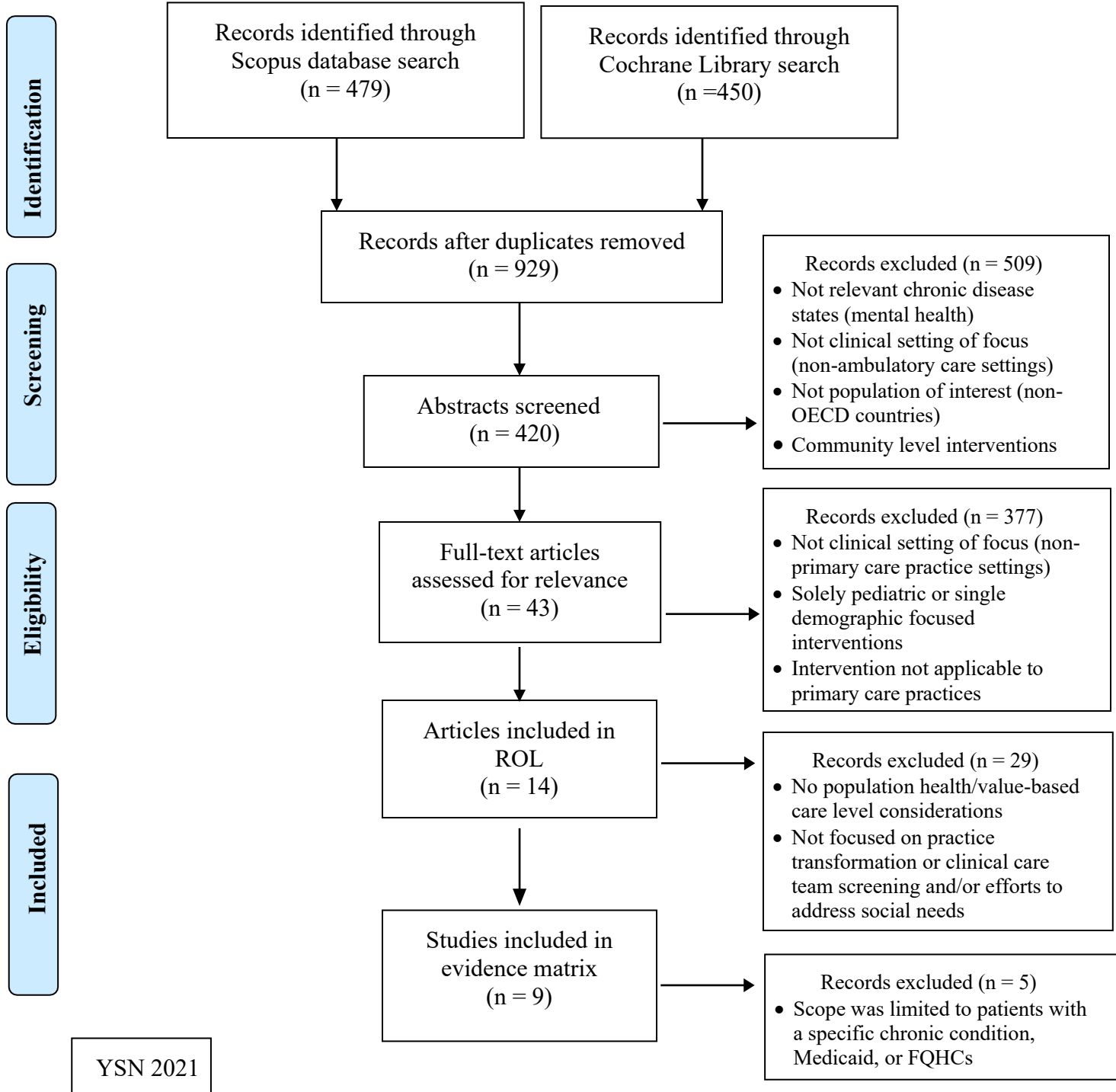
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Appendix A

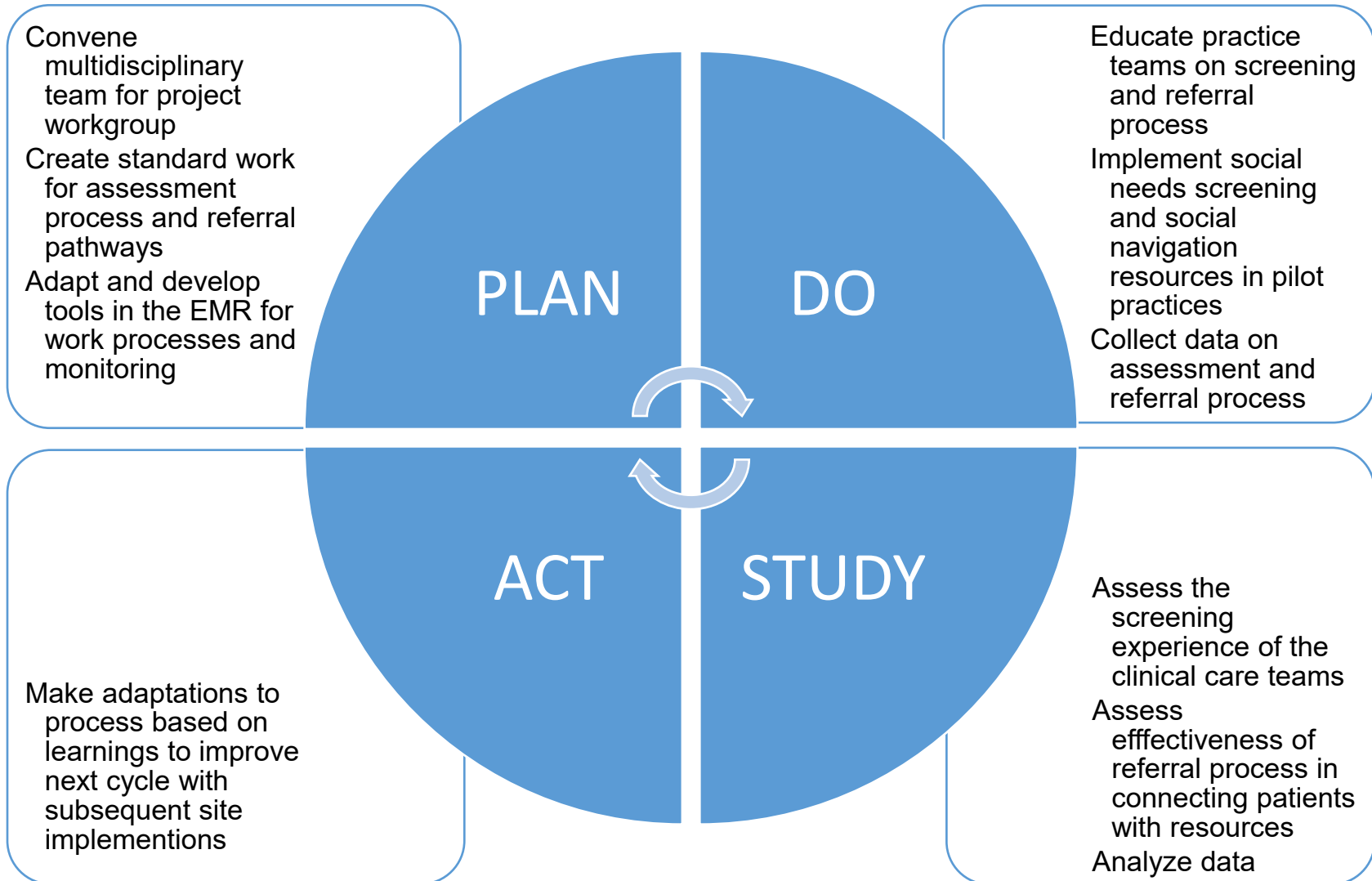
Adapted PRISMA Flow Diagram for DNP Project ROL



From: Moher D, Liberati A, Tetzlaff J, Altman DG, The PRISMA Group (2009). Preferred Reporting Items for Systematic Reviews and Meta-Analyses: The PRISMA Statement. PLoS Med 6(7): e1000097. doi:10.1371/journal.pmed1000097

Appendix B

Project Model



Appendix D

Communication Plan

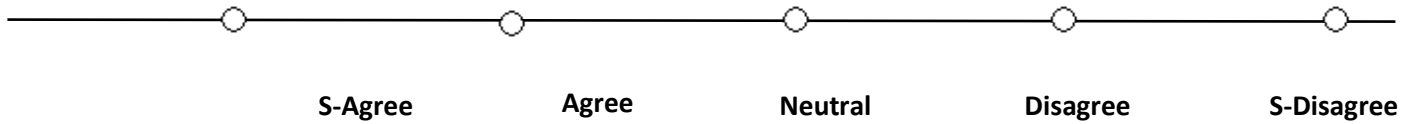
Communication	Audience	Goals	Schedule	Format	Responsibility
Senior Leadership Team Leadership Meetings	Senior Leadership of All Service Lines and Disciplines	Set organizational strategic aims and deliverables related to the initiative, receive monthly status updates, and provide feedback on directional alignment	Monthly Standing Agenda Item at Meeting	Meeting	Accountable Executives
Project Steering Team Meetings	Executive Leadership and Project Leads	Advise project efforts, monitor status, facilitate resource needs, address barriers, review outcomes, and ensure the achievement of project success	Bi-Monthly for the Duration of the Initiative	Meeting	Accountable Executives and Project Leads
Project Work Team Meetings	Select Stakeholder Leaders and Clinical Staff	Develop standard workflows and referral processes, engage subject matter experts ad hoc, collaborate with informatics, establish community resource partnerships and database, coordinate education and practice implementation, monitor and evaluate progress and metrics, identify risks and barriers, and provide status reports to appropriate teams	Bi-Weekly for the Duration of the Meeting	Meeting	Project Leads
Medical Directors Meetings	Client Medical Directors	Introduce the initiative, provide an operational overview, provide status updates, and elevate issues that need to be addressed by medical directors	Agenda item on August 2022 Monthly Meeting with Quarterly Updates	Meeting	Physician Champion
Operations Leadership Meetings	Client Directors, Operations Managers, and Health Center Managers	Introduce the initiative, provide an operational overview, provide status updates, and elevate issues that need to be addressed by practice leadership	Agenda item on August 2022 Monthly Meeting with Quarterly Updates	Meeting	Project Leads
Clinical Quality Newsletter	All Staff	Introduce the initiative and provide an overview for general awareness	Feature in August 2022 Monthly Newsletter	Email	Project Leads
Town Hall Meeting	All Staff	Introduce the initiative and provide an overview for general awareness	Agenda item on August 2022 Monthly Town Hall Meeting	Meeting	Physician Champion
Project Clinical Team Education	Providers and Practice Clinical Care Team at Implementation Site	Educate on the clinical workflows, referral processes, documentation, and utilization of resources to support the point-of-care implementation of all aspects of the project	4 weeks Prior to Practice Cohort's Implementation	Asynchronous Web-Based Course	Physician Champion and Project Leads
Project Practice Kickoff Meeting	All Practice Staff at Implementation Site	Review education, answer questions, outline next steps, and address concerns that the practice may have regarding the project implementation	2 weeks Prior to Practice Cohort's Implementation	Meeting	Physician Champion and Project Leads

Appendix E

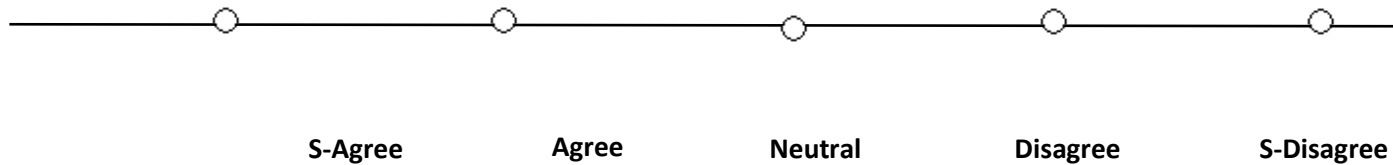
Social Needs Experience Survey

We would like to better understand your experience with the current process for screening patients for social needs and connecting them with community resources. Please choose the answer that most closely matches your thoughts on the statement.

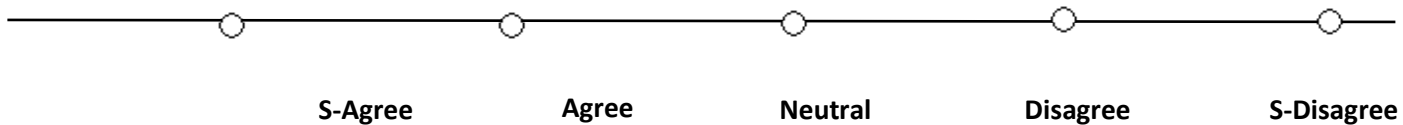
1. The social needs screening in EMR was easy to use.



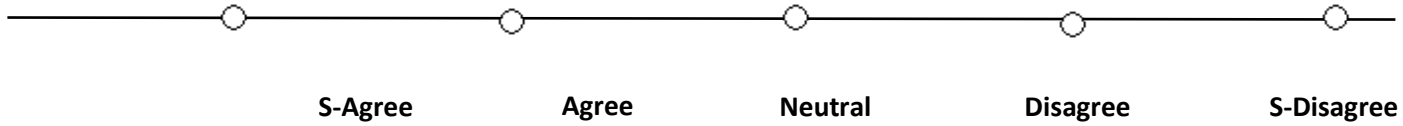
2. The community resource referral tool embedded in EMR was easy to use.



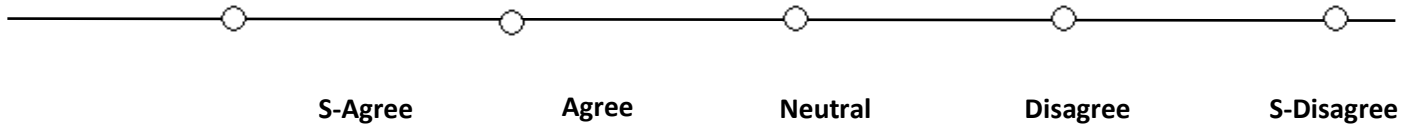
3. I was able to find appropriate resources to meet my patient's needs using the community resource link in EMR.



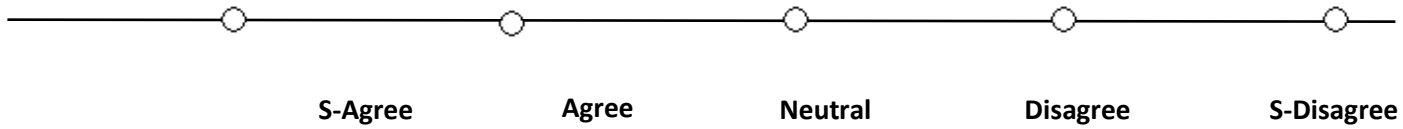
4. I felt comfortable having conversations with patients about social needs having these resources available to me.



5. I feel the care of my patients is improved when I address their social needs.



6. I would like to expand this process to all of the patients that I see in my practice.



7. Please comment on things that you felt went well with implementing the new social needs screening process and things that could have been improved with this work.