MULTIPLE DOMAIN SOCIAL DETERMINANTS

OF HEALTH SCREENING IN ADULTS

by

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ABSTRACT

This DNP project sought to identify and address two social determinants of health (SDOH) negatively affecting adult patients ages 18 and older at the chosen primary care site in southwestern Montana. It was guided by the Centers for Disease Control's definition of five classifications of SDOH found to influence individuals' long-term health outcomes. The two SMART goals identified in this DNP project were firstly the successful screening rate of 50% of all adults ages 18 and older seen by participating providers at the primary care site. Secondly, two SDOH would be identified reflecting the highest rate of disparities in unmet social needs. These aims were accomplished through the utilization of the PRAPARE screening tool into providers' existing workflows and the creation of a patient resource guide addressing the two identified social determinants of health. The PRAPARE questionnaire was used as a self-administered screening tool to assess unmet social needs of participating individuals. Specific questions from the PRAPARE questionnaire were paired with the overarching SDOH and were scored. When patients reported one unmet need, it was recorded as one point under the corresponding SDOH. Data was then aggregated to determine the two social determinants demonstrating the highest rate of disparities within adult participants at the project site. The patient resource guide (Appendix E) aimed to address the two social determinants of greatest need at the site and provide community services available for the two SDOH.

CHAPTER ONE

MULTIPLE DOMAIN SOCIAL DETERMINANTS OF HEALTH SCREENING IN ADULTS

Introduction

Social determinants of health (SDOH) are factors that influence current and long-term health outcomes. SDOH and their effects on individuals' lives are variable, yet there is a complex connection between these unmet environmental needs and overall health. Social needs of individuals correlate to specific social determinants of health (Zook, 2019). For example, the social need of employment status is directly related to the broader social determinant of economic stability, and status of insurance is directly related to the social determinant of health and healthcare. When data regarding social needs are aggregated from specific patient populations, they can be used to analyze disparities in social determinants of health (Zook, 2019). Screening individuals' unmet social needs in the primary care setting helps identify overarching disparities in SDOH. Current evidence-based screening tools are used to assess specific individual social needs like housing security, food security, and employment status. Use of these screenings have been found to consistently reduce unmet social needs, thus improving preventative healthcare utilization and patients' overall health outcomes (Gottlieb, 2017).

The Center for Disease Control's (CDC)' Healthy People 2020 defines SDOH as the "conditions in the environments in which people are born, live, learn, work, play, worship, and age that affect a wide range of health, functioning, and quality-of-life outcomes and risks" (2020). Healthy People 2020 focuses on five key areas of social determinants that include

economic stability, education, social and community context, health and healthcare, and the physical and built environment. Health leaders and providers should account for these SDOH when developing policies, reimbursement protocols, and legislation (Walker et al., 2014). The management of chronic diseases, including heart disease, type 2 diabetes, various cancers, and mental illness, are affected by actionable SDOH (Walker et al., 2014). The role of healthcare in the identification and addressment of disparities in SDOH requires increased standardization in efforts to improve holistic care of patients (Koh et al., 2020).

Problem Identification

At the chosen site, prior to implementation of this project, there was no comprehensive screening that assessed individuals' unmet social needs, yet alone connect to the larger SDOH. Additionally, there was no patient education that focused on linking patients to services in the community to address unmet social needs. The failure for assessment and patient connection potentially jeopardized future health management and outcomes. A lack of comprehensive screening for social needs in the primary setting impedes quality healthcare delivery (About SDOH, 2020).

The holistic efforts of clinicians, therapists and mental health professionals in the primary care setting are undermined if they remain unaware of their patients' limitations to obtain food, housing, or medications. Primary care services in southwestern Montana have an increased vulnerability to disparities of social needs due to decreased healthcare access and a large Indigenous population, thus indicating a greater need for comprehensive screening and resource development (DPHHS, 2020). When adults are proactively screened in the primary care setting

and their social needs are addressed this allows tools to minimize the impact of SDOH to be provided thus, enhancing health and wellness across the lifespan (Anderman, 2018). Therefore, the purpose of this project was to (1) implement a social-needs assessment tool in a primary care practice, and (2) develop a patient resource guide to address the most frequent social needs identified.

Barriers to Implementation

National and Global

While clinical practice guidelines standardizing identification and attention to elements of SDOH do not yet exist, recommendations for healthcare systems to appropriately screen for social needs are provided by national and global health organizations (About SDOH, 2020). Broad screening tools targeting adults, families, and pediatric patients exist for primary care settings, but remain underutilized (Anderman, 2018). Current research recognizes that appropriately identifying and focusing on particular SDOH in vulnerable populations is critical towards their overall health, yet the vast number of primary health settings do not incorporate appropriate screening in practice (Meyer, 2019). The data collected from SDOH screening tools may be helpful for effective policy reform, targeted research, and population-specific interventions (Anderman, 2018).

Despite recommendations from the Centers for Disease Control (CDC), the World Health Organization (WHO), and other various health organizations, widespread implementation of valid and reliable screening tools that assess the five key SDOH areas encounter multiple barriers for use in primary care (Gottlieb, 2017). Mandates currently do not exist for specific screenings,

as research is still emerging and the specific needs for populations and settings remain complex. Thus, the importance of tailoring the screening tools to meet specific populations' needs cannot be overstated (Gottlieb, 2017). A lack of specificity in screening tools creates additional complication in the translation of evidence into practice. Also, a well-documented lack of provider comfortability prevents effective mobilization of available resources regarding SDOH (Anderman, 2018).

Primary Care

Multiple unique factors influencing stark disparities in SDOH exist in the primary care setting. A lack of provider comfort regarding social needs screenings is due in part to a lack of supportive resources aimed at addressing disparities in SDOH, such as food banks, low-income housing options, and expansive case management (Meyer, 2019). Providers simply do not want to screen for a problem for which they do not have a solution easily accessible. Other Primary Care Providers (PCPs) perceive addressing individual's social needs as outside their scope because it is not directly related to the current and pressing medical needs of the individual. However, Havrenek et al. (2015) found that patients who do not have economic stability are less likely to adhere to medication recommendations from their healthcare provider. Many providers want to wait to implement screening processes until more definitive evidence supports practice changes. This current thinking prevents future improvement as it is the lack of data that prevents health leaders in changing future reimbursement structures. Lastly, providers voice concerns about placing a significant responsibility on the already strained healthcare system through increased expectations of providers to assess social needs and provide resources. Such limited

understanding of the interconnection of unmet social needs to health outcomes leads to continued underrepresentation of the broader SDOH complexity in primary care (Meyer, 2019).

Project Site

The DNP project took place in a southwestern Montana facility that provides care across the lifespan to patients living in urban settings and the surrounding rural areas. It is an intentionally collaborative practice promoting holistic health for families and adults. It offers primary care services, physical therapy, acupuncture, behavioral health, and educational courses focusing on traditional healing techniques. The site serves mostly adult individuals, including Indigenous populations within the service area. The site accepts Medicaid, indicating healthcare delivery to a potentially lower socioeconomic bracket, which correlates to the SDOH of economic stability.

A comprehensive social-needs assessment had not been conducted at this site, despite a focus on holistic care. For those who may have unmet social needs, there was no patient-specific information regarding local resources available for patients. Due to a lack of screening, the site was unaware of the depth of unmet needs, but providers stated anectodical evidence from individual patient encounters. Providers expressed concern that access to mental health services and ability to pay for prescriptions were evidenced in their practice and were barriers to improved health. Prior to the implementation of this project, the site did not collect and track comprehensive demographic data such as household income, source of insurance, or race, further making it impossible to identify trends in unmet social needs for their patients.

The project was developed in response to growing evidence supporting that a proactive screening of social needs in primary care improves health outcomes (About SDOH, 2020). Due to a lack of social needs screening procedures within the project site, no systematic process existed for providers to assess or intervene, thus demonstrating a gap between evidence and practice. The providers' acknowledged the difficulty patients reported in accessing resources, which further increased stakeholder support for the development of patient social needs resources.

Proposed Evidence-based Screening and Methodology

The purpose of the DNP project was to implement a comprehensive social-needs screening in adult patients (ages 18 and older) seen by providers within the project site over a 6-week period. The project's first aim was to screen 50% of adult patients. Based on the findings of the social-needs assessment, unmet social needs were collated into larger SDOH categories to develop an evidence-based, user-friendly resource guide. Through the creation of a patient resource guide addressing the two most prevalent unmet SDOH, this second project aim would offer patients an opportunity to explore support services within the geographical area. The evidence-based social-needs assessment chosen was the PRAPARE tool, as it comprehensively assesses the CDCs five domains of SDOH including safety, housing, security, food security, and childcare. This tool was selected due to no cost of use, ease of completion in under 10 minutes, and ability to assess multiple social needs in a maximum of 20 questions (O'Gurek & Henke, 2018).

Congruence of DNP Project to Organization's Mission, Goals, and Strategic Plan

This facility's mission is "to be a collaborative practice offering holistic, integrated health care options as unique as each person we serve" (Marx, personal communication, 2021). The DNP project aligns with these overarching goals in a number of ways. SDOH seek to holistically understand and address each individual's unique social needs and the correlation of these to one's health (Slabodkin, 2017). Identifying and addressing basic social needs is preventative against long-term physical and psychiatric negative health outcomes, such as cardiovascular disease, cancers, and chronic depression (Havrenek et al, 2015). Proactive care aims to promote sustainable and healthy lives for project site patients. A focus on community services that connect each individual to organizations that can meet unmet social needs facilitates individualized, holistic care. These DNP interventions seek to foster a deeper understanding of the site-specific social needs in order to best deal with them in the future. Inclusive screening and addressment of social needs and the more comprehensive SDOH aim to mitigate barriers, like finances to obtain medications or safe housing, in order to provide quality healthcare as a means to decrease future health complications (About SDOH, 2020).

CHAPTER TWO

REVIEW AND SYNTHESIS OF THE EVIDENCE REGARDING MULTIPLE DOMAIN SOCIAL DETERMINANTS OF HEALTH SCREENING IN ADULTS

Introduction

A database search was conducted of PsychInfo, CINAHL, and Web of Science in October 2020. The MESH search phrases used were (Social Determinants of Health) AND (tools OR questionnaires OR patients OR primary care OR United States OR assessment OR healthcare) with publication dates confined to the past 6 years from 2014 to 2020. The search was then restricted to interventions specific to the role of healthcare in addressing social determinants of health. The pertinent research varies in strength and generalizability. The systematic reviews, retrospective chart review analysis, and meta-analyses included in this review represent high levels of strength in research analyzed (see Appendix A).

Social Determinants of Health and Their Impacts on Long-term Health

United States

The impact of unmet SDOH influences Americans most noticeably in the development and management of chronic diseases (Walker et al., 2014). In a systematic analysis, Walker et al. (2014) found significant connections between actionable SDOH and the long-term management of type 2 diabetes. Markers measured in the studies included glycemic control, blood pressure,

LDL levels, and HbA1c levels. Twelve of the 18 studies found a connection between food insecurity and higher LDL levels, and seven of the 17 showed a connection between food insecurity and hypertension, both at a statistically significant level. Out of 28 studies, 23 indicated that a linkage between healthcare access and glycemic instability was statistically significant. Although it was not a consistent finding, there was evidence to suggest that lower levels of health literacy were linked to poorer outcomes in patients diagnosed with type 2 diabetes (Walker et al., 2014).

The American Heart Association (AHA) issued an analysis on the connection between heart disease and various SDOH. They specifically related socioeconomic status, race/ethnicity, social support, culture and language, access to care, and residential environment to the increasing burden of cardiovascular disease in the United States, reporting these as an essential dynamic to consider in patient populations (Havranek et al., 2015). They emphasized the urgency in addressing SDOH when they stated, “failure to demonstrate awareness of this third dynamic will result in a growing burden of CVD, especially in those with the least means to engage in the healthcare system.” (Havranek et al., 2015, p. 1).

Access to healthcare is both complex and nuanced. Havranek et al. (2015) state that access embodies five dimensional concepts. These include approachability, availability, affordability, accommodation, and acceptability. Montana’s overwhelmingly rural status complicates consistent availability to healthcare because of the lack of providers. This affects all five SDOH dimensions making it increasingly more difficult for these individuals to overcome obstacles to care (Havranek et al., 2015).

When psychological mechanisms were analyzed, a vast body of literature had documented associations between emotional states, namely depression, and cardiovascular disease (CVD) risk (Havranek et al., 2015). Patients with CVD and comorbid depression have been found to have a worse cardiometabolic profile with increased levels of atherosclerosis-related biomarkers, greater platelet activation, reduced heart rate variability, hypothalamic-pituitary dysfunction, and impaired vascular function compared with non-depressed individuals (Havranek et al., 2015). Such findings support the need for PCPs to assess and address this crucial social need within the health and healthcare SDOH.

Social Determinants of Health in Montana

The specific SDOH of health and healthcare accessibility are prominent issues in Montana (DPHHS, 2020). Access to healthcare is influenced by the state's overwhelming number of rural counties and vast geographical area between large healthcare facilities. According to Montana's Department of Health and Human Services (DPHHS), most Montana counties are designated as Health Professional Shortage Areas (HPSA). Of the 56 Montana counties, 54 are designated as Primary Care HPSAs, 55 as Mental Health HPSAs, and 41 as Dental HPSAs (DPHHS, 2020). When access to healthcare is significantly decreased statewide, disparities in health and access become increasingly stark.

Disproportionately, Indigenous populations in Montana suffer from a lack of resources and access at even greater rates than their white counterparts. Among Indigenous residents, 18% reported being unable to see a provider in the past year due to cost (DPHHS, 2020). Montana's Indigenous residents had higher rates of death for all leading causes of death compared to white residents. This included chronic diseases such as liver disease and cirrhosis, which were 7 times

higher, and diabetes, where mortality rates were 4.5 times higher than white residents (DPHHS, 2020). In the southwestern Montana area where the project site is located, healthcare facilities serve a large population of Indigenous patients from tribes in western Montana. Due to a lack of pre-project demographic information, the project site could not identify the proportion of Indigenous patients served.

Unsurprisingly, rural status influenced the cause of death by geographic location. Rural-county Montanans had higher death rates due to heart disease, diabetes, chronic liver disease and cirrhosis, and suicide compared to citizens of more urban counties within Montana (DPHHS, 2020). Healthcare facilities located in more urban settings who serve patients from rural communities in Montana need to be aware of the disparities in order to mobilize alternative mechanisms of access and care for these patients.

Focus Within Healthcare Regarding Social Determinants of Health

Progressive Reimbursement Models

The CDC, WHO, and the American Public Health Association have each acknowledged the strong and undeniable connection between SDOH and long-term health outcomes. In 2020, the Center for Medicare and Medicaid Services (CMS) shifted financial reimbursement to identification and improvement of social needs resulting from disparities in SDOH (Pricewaterhouse Coopers, 2017). This shift emphasized the need for screenings especially in vulnerable populations such as children, women of childbearing age, and people of color. Due to these progressive changes, future mandates may require evidence-based, sophisticated, multi-

domain screening processes be integrated in the electronic health record (EHR) of facilities reimbursed by CMS (Pricewaterhouse Coopers, 2017).

The role of healthcare in identifying and addressing SDOH remains fluid. However, the literature supports linking patients to specific services related to actionable SDOH as a proactive intervention for patients' long-term health (Koh et al., 2020). Through a comprehensive SDOH assessment, crucial social needs are identified, shining a light on specific barriers to long-term health. Assessing social determinants of health and providing navigation of local services may provide invaluable insight into current gaps in services. This embodies the interprofessional role healthcare plays in patients' overall wellbeing (Koh et al., 2020).

Policy Changes Addressing Social Determinants of Health

Current SDOH limitations include healthcare providers' lack of assessment leading to the underutilization of available federal programs (Koh, et al., 2020). National policy reform is taking place in the context of nonmedical services available that incentivize both providers and organizations to identify and address SDOH. Well-known national policies that seek to address disparities in SDOH include the advent of managed care, the 2010 Affordable Care Act, and the search for alternative payment models to fee-for-service, such as sliding scales (Koh, et al., 2020). Certificate-of-need programs currently exist in 35 states and the District of Columbia. These programs offer formalized avenues for hospitals to offer communities' resources as part of their expansion efforts (Koh, et al., 2020). The ACA created "community benefit standards" that nonprofit hospitals are required to meet prior to receiving federal tax exemptions. Included in these community benefit standards is the requirement that a community health needs assessment be conducted every three years (Koh et al., 2020). In accordance with these standards, the

institute must have an established plan that prioritizes the needs of the community, many of which directly or indirectly relate to SDOH (Koh, et al., 2020). The introduction of the Social Determinants Accelerator Act of 2019 would convene a federal inter-agency council with the aim of identifying opportunities for state and local governments to streamline and recognize under-utilized federal programs aimed at diminishing SDOH disparities (Pricewaterhouse Coopers, 2017). The Act proposes additional grant funding for programs at local, state, and tribal levels that would enhance participation in addressing SDOH within a smaller context. As additional policy reforms are proposed, it is vital that stakeholders in healthcare be thoroughly apprised of the evolving and expanding role they will have in the health of patients (Pricewaterhouse Coopers, 2017). Prominent stakeholders include primary care providers, mental health providers, nurses, patient technicians, and the patients seen in primary care.

Evidence-based Practices Identifying and Addressing Social Determinants of Health

Social determinants manifest on an individual level through unmet social needs. Screenings aim to identify specific actionable needs and facilitate referrals to appropriate services in order to directly address consequences of disparities. Current evidence indicates that it is vital to assess the specific needs of the population served and tailor screenings appropriately. Research is emerging in the field of SDOH and resulting individual social needs. According to Gottlieb, a limitation in understanding the efficacy of addressing individual social needs is a result of a lack of standardization of assessment and research (2017). In the qualitative meta-analysis, less than a quarter of the included studies met criteria for high quality based on GRADE standards (Gottlieb, 2017). Even with severe limitations regarding quality of many of

the included research, the systematic review identified specific domains of SDOH which provided promising evidence for implementation. Interventions included involving social-needs screening and community resource connections in outpatient pediatric care settings (Gottlieb, 2017). External studies validate these findings specifically in improving long-term food security within families (Bottino, Kreatsoulas, & Fleegler, 2017). Additional studies show similar promising results within adult settings, but these will need replication utilizing high-quality study designs before similar conclusions can be made (Gottlieb, 2017).

The Translational Role of Healthcare

Primary care settings have many opportunities to potentiate access to resources within the community that address unmet SDOH (Koh et al., 2020). Through a meta-analysis of 41 current publications, guidance on how healthcare partnerships can minimize disparities in SDOH was provided. One important component of successful implementation was the development of robust partnerships with community institutions that have the "readiness, capacity, and commitment to engage" (Koh et al., 2020). This requires not only the discernment of the facility that is knowledgeable of available resources, but also the wisdom to know which facilities have the resources to handle the potentially large volume of referrals. Another identified positive influencer was the presence of long-term commitment on the part of the healthcare site, which Koh et al. stated indicates patience and trust to engage key stakeholders in the community. Lastly, investment in collaborative projects that attract both private and public funding were vital to the success of streamlining linkages for patients (Koh et al., 2020).

Challenges remain for the integration of identification and addressment of SDOH within healthcare institutions. The nuanced and site-specific relationships between the facility and

community institutions will almost certainly need to be strengthened through interdependent partnerships (Koh et al., 2020). Depending on the site, this may be even more difficult if significant mistrust between the institution and community exists (Koh et al., 2020). Additionally, interdisciplinary collaboration within a facility is paramount for continuity of care and the successful functioning of processes leading to linkages with external services. Standardization regarding the process of assessment and referrals addressing SDOH is necessary to clarify the translational role that the healthcare system will play in identifying and addressing SDOH. Lastly, there is a significant lack of data available assessing the long-term improvement in health outcomes. This leads to increased resistance from providers to implement SDOH screenings or to engage in community collaboration (Koh et al., 2020).

PRAPARE Screening Tool

The PRAPARE screening tool has been nationally recognized and studied within diverse patient populations throughout the United States to accurately reflect patients' SDOH risks (Weir et al., 2020). Its wide dissemination and open access, as well as the collection of data on a national scale, have made it the dominant social risk screening tool. It has the optional measures of screening incarceration history, domestic violence, and refugee status, which made it applicable to virtually every patient, including those with rural and urban status (Weir et al., 2020). With a total of 7,346 patients in three geographically different cohorts, the study found that, on average, participants identified 7.2/22 possible social determinant risks placing them at a greater risk of long-term negative health outcomes. Over 99% of patients in each cohort were facing two simultaneous risks (Weir et al., 2020). The proportion of patients facing seven risks

was 51%. The top three risks in common social determinants of health across the cohorts were unemployment, lack of insurance, and increased levels of stress (Weir et al., 2020).

Patients' Ability to Access Resources

In larger urban areas, current community resource guides that address social needs exist, but are poorly used by those who could benefit from them. Sorenson et al. (2012) identified influential factors for the lack of use including general literacy, individual characteristics, and prior experience with illness and the healthcare system. More specifically, demographic and social factors affecting health literacy include socioeconomic status, occupation, employment, income, social support, culture and language, environmental and political forces, and media use (Sorenson et al., 2012). Although the exact definition of health literacy is fluid and evolving, it is defined by some as "the personal characteristics and social resources needed for individuals and communities to access, understand, appraise and use information and services to make decisions about health" (Rowlands, 2017, p. 2). Health literacy can be directly affected through health promotion efforts such as education, social mobilization, and policy advocacy.

Sorenson et al. (2012) go on to specify the benefits increased health literacy have on individuals and at population levels. Linking health literacy within communities to the concept of social capital alludes to disparities in SDOH present within vulnerable populations, such as people of color, women, and pediatric populations. Understanding how individual decision-making influences health and resource allocation at the population level solidifies the overarching consequences of unmet social needs (Sorenson et al., 2012).

In a qualitative project using semi-structured interviews, Rowlands (2017) examined the lived experiences of adult learners and identified themes regarding barriers to accessing resources. Key factors identified in what is referred to in the study as the "journey to health" included family history, ethnicity, and culture. Reading, understanding, and the health information environment influence the accumulation of knowledge. While participants expressed that money and work connect with social activity, they emphasized that the local community had strong influence on whether or not the knowledge would translate into health behaviors (Rowlands, 2017). Successfully engaging patients in navigating available resources requires an understanding of key factors that influence patients' knowledge base and health behaviors.

Evidence-based Patient Education

The CDC has created evidence-based recommendations for educational materials that lead to increased knowledge or change in beliefs, attitudes, or behaviors. Clarity, text appearance, the presence of visuals, layout and design, and cultural considerations are key components of educational materials and their explanation follows (Health Literacy, 2021).

When creating educational materials, clarity can be achieved through providing the most important information first, limiting the number of messages, and clearly stating the actions necessary to achieve the target goal (Health Literacy, 2021). Using concrete nouns and an active voice heightens clarity when offering recommendations. Limiting the use of jargon and technical or scientific language will ensure that generalizability is achievable (Health Literacy, 2021).

The visual text greatly influences readability. Using fonts between 12 and 14 points is recommended to reach the majority of people receiving the materials. Headings need to be at

least two points larger than the main text size (Health Literacy, 2021). Serif fonts are usually easier to read because the serif makes the individual letters more distinctive and easier for our brain to recognize quickly (Health Literacy, 2021).

Layout and design must be appealing to the chosen audience. Prioritization of the most important factors at the beginning of the document makes the information easy to access for patients. Presenting one complete idea on one page or two facing pages promotes succinct and cohesive understanding of main points of education (Health Literacy, 2021).

Conclusion

Current evidence indicates a strong correlation between SDOH and long-term health outcomes. Integrating evidence regarding health literacy on an individual level helps providers effectively engage with patients in meaningful ways regarding decisions around health and unmet social needs. Patient resources provided by healthcare providers aimed to streamline patient access to services may greatly help decrease disparities in SDOH. Decreasing disparities in SDOH may positively influence long-term health outcomes.

High quality research is lacking regarding long-term improvement of health through identification of social needs and corresponding community linkages for patients (Gottlieb, 2017). However, the current and emerging evidence indicates a strong correlation between the identification and addressment of actionable social needs and long-term health outcomes (Gottlieb, 2017). The need for standardization of the role that healthcare plays in the identification and addressment of SDOH cannot be overstated.

Progressive policy and reimbursement methods have potentiated the ability for healthcare to play a key role in streamlining access to resources within patients' communities. Emerging research underscores the need for SDOH risks to be appropriately understood and addressed in the United States. Current evidence supports comprehensive social needs assessments aimed at actionable SDOH. Individuals and populations benefit significantly when providers in the primary care setting accurately identify and address unmet social needs and broader SDOH risks.

CHAPTER 3

SETTING AND METHODS

Introduction

The DNP project implemented the PRAPARE assessment of social needs in adult patients ages 18 and older in a holistic primary care setting in southwestern Montana. The implementation of the multi-domain screening of social needs and development of a streamlined clinical resource for services was lacking, thus not meeting national recommendations. The PRAPARE screening tool comprehensively addressed five specific realms of social needs and led to an increase in the access of services targeting food security, housing security, enculturation, education, and employment.

The results from pilot screening guided the development of a site resource guide addressing the top two unaddressed social needs of patients. Guides were then distributed to all of the providers within the facility for input and eventual incorporation into daily practice. The project's overarching aim was to support the overall long-term health of this chosen population through increased linkages to appropriate services.

Quality Improvement Framework

PDSA Overview

This DNP project utilized the plan-do-study-act (PDSA) methodology of quality improvement (Moran, Burson, & Conrad, 2017). This method has four distinct phases that helped the project solidify goals, create action-oriented roles, and maintain momentum

throughout the process. During the planning phase, the identification of a clinical problem occurred through site needs assessment compared to the literature review (Moran, Burson, & Conrad, 2017). Additionally, logistic planning involved site staff to ensure that implementation would effectively translate best evidence to the specific clinical setting. During the "do" phase, implementation occurred over four weeks with weekly assessment of PRAPARE tool completion and team feedback obtained via e-mail. During the third phase, data was studied alongside staff perceptions with modifications then made (Moran, Burson, & Conrad, 2017). The final phase of "act" involved making modifications for the second implementation and eventual resource guide development.

The PDSA methodology was easily adaptable to the primary care site, making it an ideal framework. Its simplified cyclic nature supported the complex medical setting of varying providers and multiple points of patient entry. Additionally, the cycle encouraged constant quality improvement through weekly feedback. This methodology provided sufficient organization while allowing flexibility throughout the process. It lent itself well to sustainability if staff agrees to continue tailoring the process in the future.

Agency Description

Facility Description

The chosen facility is located in an urban area in southwestern Montana and serves both city- and rural-dwelling individuals throughout the lifespan. There is an emphasis on holistic health and integrating and coordinating care through professionals with varying specialties and levels of education and training. Services offered include primary care, behavioral health

services, and physical therapy. The site expresses dedication to empowering individuals and families through courses that provide education in the "wisdom of mind/body traditions." All providers are in private practice but possess an intentional focus on interdisciplinary care of patients. All providers share the same property making communication and rapport building much easier. Collaboration occurs on an organization level through monthly meetings with all providers.

Stakeholders

Stakeholders in this project included the patients, the Family Nurse Practitioner (FNP), multiple interdisciplinary providers, and the surrounding community. If project findings are widely disseminated, this project would include stakeholders throughout the United States who are either caring for adult patients with unaddressed social needs or who are patients accessing preventative services with unaddressed social needs.

Strengths and Weaknesses

Site strengths include a built-in focus on addressing the holistic needs of patients and their families. Interventions of this project closely align with the site philosophy and there was expressed buy-in from all practitioners. The standardized approach to SDOH assessment could lead to an increase in internal referrals to mental health professionals as needs were more quickly addressed, making this mutually beneficial to all the site's services. The multiple interdisciplinary providers use a variety of training and skills daily, allowing for overarching comprehensive understanding of the user/customer social needs. Providers engaged in a holistic model of care have a foundationally helpful methodology in addressing patients' overall needs.

This project provided increased standardization and tangibility to these efforts to the identification of non-medical needs and resources to comprehensively address them.

Barriers hindering implementation of this project included the current COVID-19 pandemic precautions, which limited communications to email and Zoom meetings. Being unable to conduct in-person meetings not only slowed the process of building rapport but hindered the DNP student's ability to intimately understand current clinical processes and effectively impact possible change. The number of practitioners involved at the facility, while eventually a strength, in the beginning project stages led to miscommunication between parties. Clarity in communication regarding the project's implementation was necessary in order to prevent confusion and frustration during the initial stages of the PDSA cycle. Miscommunication was decreased by utilizing one person, the FNP, through which all communication was addressed.

Project Design

DNP Project Purpose

The purpose of this project was to introduce and implement standardized screening of social needs for adult patients. Assessment findings were collated by the CDC's five areas of SDOH and led development and implementation of a clinical guide to local services aimed at meeting specific patient needs within the geographic area.

SMART Goals

The goals of this project focused on assessing the efficacy of the implementation of this process change. This project aimed to screen 50% of all adults over the age of 18 seen by

participating providers at the site. From assessment findings, two social needs most common in this population were identified. A resource guide was then created for the project site that included available social services in the site's services area.

Project Methods

Measures and Instruments

The PRAPARE screening tool was chosen as it encompasses the CDC's parameters of SDOH (Appendix B). The tool is a nationally recognized standardized screening assessing multiple social needs including housing, employment, education, security, transportation, social integration, and stress (O'Gurek & Henke, 2018). It has the optional measures of screening incarceration history, domestic violence, and refugee status, which were beyond the scope of this project and were not utilized. The screening tool has 15 core questions as well as five supplemental questions that were not used in this quality improvement project (O'Gurek & Henke, 2018). The data can be easily uploaded into the electronic health record as "structured data" making it a favorable choice for primary care facilities. The National Association of Community Health Centers and several other organizations utilize the PRAPARE tool for adult patients, demonstrating its applicability to the primary care setting (O'Gurek & Henke, 2018). It can be administered by a clinician or it can be given to patients to be self-administered, as the tool is written for easy reading by patients who have at least a fourth-grade reading level. The estimated time to complete the questionnaire is under 9 minutes, which aided in the self-administration methodology chosen for the project.

According to the Association of Asian Pacific Community Health Organizations (AAPCHO) (2019), this questionnaire has been found to be valid with a Cronbach's alpha of 0.86, has a construct clearly defined, has been pilot-tested with nearly 3,000 patients, and has been refined to a wide variety of patient populations. It is divided into four sections which include personal characteristics, family and home, social and emotional health, and money and resources.

The PRAPARE questionnaire is heavily weighted in assessing social needs relating to economic stability, health and healthcare, and social and community context. Six questions related to economic stability, one related to education level, five related to health and healthcare, one related to the neighborhood and built environment, and four related to social and community context. It is important to note that the question regarding the neighborhood and built environment was omitted for this project after careful consideration of patient privacy.

Scoring the questionnaires was a standardized process. A point was given to each unmet social need identified by the participant. Thus, a patient could report multiple unmet social needs related to one social determinant. For example, a patient could report both insecure housing as well as unemployment resulting in two unmet social needs reflecting disparities in the social determinant of economic stability.

Social Needs and Social Determinants of Health

The unmet social needs were correlated to the CDC's five domains of SDOH (Appendix C). These include the social and community context, neighborhood and built environment, education, economic stability, and health and healthcare. The PRAPARE screening tool evaluates an individual's social and community context by asking questions surrounding race,

ethnicity, veteran status, language, and social integration and support. The social determinant neighborhood and built environment is evaluated in the questions surrounding housing status and housing stability. Economic stability is assessed in the questions targeting employment stability, income, material security, and recent migrant or seasonal farm work. The social determinant health and healthcare entails questions regarding insurance status, transportation, and stress levels.

Human Subject Protection

The project was approved by the Montana State University Institutional Review Board (IRB) for IRB exemption (Appendix F). Respect for informed consent, as well as the ability for patients to opt out of completion, promoted patient choice through an educational patient handout. An informational one-page summary of the project accompanied each PRAPARE tool and informed the patient of the intent of data collection and reminded them that it is an optional survey in which they were not requited to participate (Appendix D). This informational page further informed them that, if they choose not to participate, their care would be in no way affected. The PRAPARE tool included the option on each question for the patient to mark "I choose not to answer this question," maintaining patient autonomy and choice. Additionally, to protect patient identity, the question regarding the individuals' address was removed. No identifying codes or names were used, thus maintaining full patient anonymity and confidentiality.

Site-specific Implementation

Over a seven-week period in January of 2021, the PRAPARE tool was provided by the provider to all adults ages 18 and older being seen by participating providers at this site.

Participating providers included one family nurse practitioner, one massage therapist, and two licensed clinical social workers. The “do” phase of the PDSA was the first three-week implementation cycle. On Monday of each week during the first implementation 30 questionnaires were provided to the site along with 30 copies of the informed consent. The screening tool was implemented in the waiting room of the primary care clinic prior to the provider visit. As customary to practice, patients were asked to arrive 15 minutes prior to their appointment, as multiple forms regarding their health and medical history were required to be completed. Completed forms were returned to the provider. Each Monday as new questionnaires were provided, completed screenings were collected. Contact was made with the facility and an informal check-in was performed weekly. During the week, the PRAPARE tool remained locked within the medical records area of the project site and accessible only to the site liaison, the FNP.

At the beginning of week 4, completed PRAPARE tools were collated, and staff perception of implementation was summarized in a password-protected electronic spreadsheet. The FNP site liaison facilitated a planned staff meeting via Zoom. To elicit further stakeholder feedback regarding the project, options for email surveys and Zoom meetings were offered, but were not utilized during the project timeline.

Once adjustments were made from the synthesis of staff recommendations, as well as the data analysis, a second cycle was conducted. The PDSA cycle repeated twice during the seven weeks each cycle spanning 3 weeks. The second cycle ran identically to the first cycle over three weeks with the modifications determined in cycle 1. Once the second cycle ended, the data were analyzed alongside staff recommendations, once again with similar opportunities for feedback

provided. This DNP project ran the length of one full PDSA cycle and data collection was conducted for two separate implementations.

After two implementation cycles were completed, development of a resource guide began using the results of PRAPARE and practitioners' feedback to address the top two unmet needs in the participating patients. The resource guide used a prior community-resource version. A one-page front-and-back guide focused on the two most identified unmet needs from the PRAPARE questionnaires and was simplified to incorporate CDC guidelines and appropriate resources, such as contact information and qualifications for services in the area.

Sustainability

The implementation of the PRAPARE screening tool was sustainable because, while addressing the social needs of individual patients may seem daunting, the self-administered nature of the intervention simplified the process. The resource guide development simplified and standardized process but would be dependent on the patient to take actions to meet their own identified social needs. Although evidence-based interventions, neither greatly increased time and resources on the part of the provider.

Conclusion

This two-pronged implementation ensured that appropriate measures to identify and address social needs within this specific patient population exist. Utilizing a valid multi-domain screening tool provided the practitioner with vital information regarding the patient's SDOH potentially impacting their long-term health. While it was not within the role of the primary care provider to address these determinants of health, primary care can play a vital role in connecting

the patient to services and the project increased awareness of the site providers without increased time or effort. This approach encouraged integration of regional services, increased the holistic approach to care by including SDOH, while supporting the need for patient engagement in their care.

CHAPTER FOUR

OUTCOMES AND RESULTS

Introduction

The aim of the DNP project was to implement the PRAPARE social-needs screening tool for in 50% of adult primary care patients, where no comprehensive needs assessment screening had previously been performed. These individual social needs were categorized by the SDOH identified by the CDC's Healthy People 2020. Then, the two most prevalent social determinants discovered in the participants guided the development of a patient resource to meet social needs. Data was tabulated and provided in descriptive statistics.

The project findings are presented based on SMART goals, demographic information of participants, SDOH analysis, project qualitative and observational adaptations, and analysis of the two social determinants with the highest reported unmet social needs.

SMART Goals

The first aim of this DNP project was to implement the screening process for 50% of the identified adult patient population. Although initially thought to be an achievable goal, the actual return rate of surveys completed was unknown, as the facility lacked the infrastructure to determine the number of patients seen by various clinicians during the project timeline. Out of 90 questionnaires distributed to the site, 28 were returned yielding a 31% return rate. While there was an increase from the previous lack of assessment of unmet social needs, which was 0% pre-project, it did not meet the aim of 50% implementation identified in DNP project planning.

Recommendations for improvement, quality assurance, and future sustainability will be discussed later.

The second aim of this DNP project was to identify the top two SDOH that affected this patient population. This was accomplished through identifying the highest reported unmet social needs and correlating these with the CDCs five domains of SDOH. This goal was achieved during the project timeline and led to the development of a regional resource guide submitted for review of providers at the site.

Demographic Information

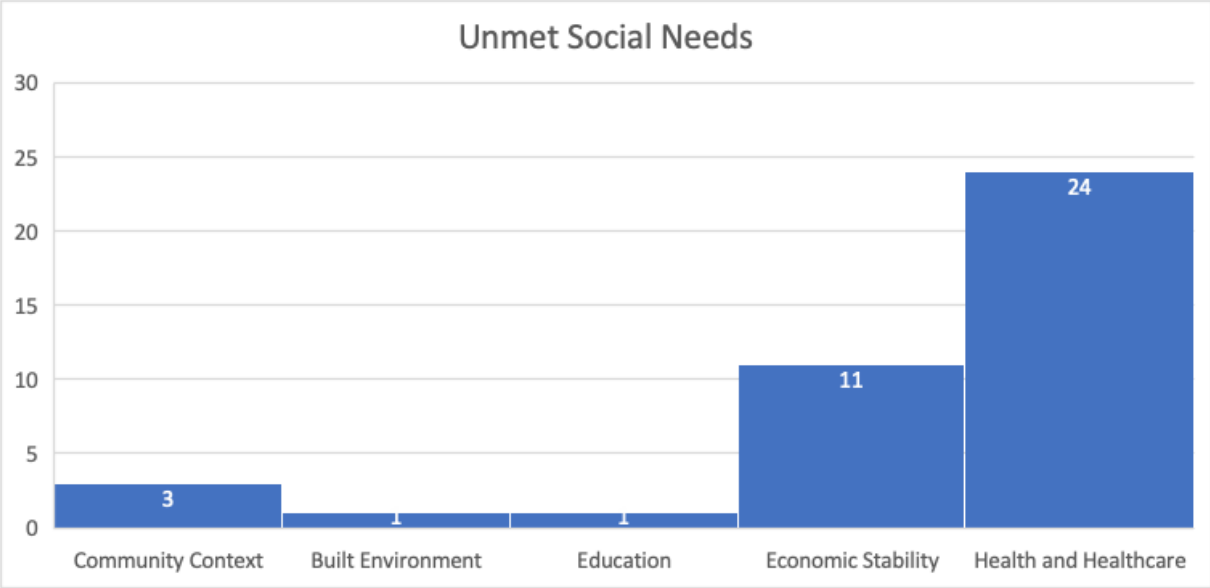
Ultimately, 28 people completed the screening. A majority of participants identified themselves as Caucasian (90.4%, n = 19) and non-veteran (95.2%, n = 20). A majority of participants identified English as the language they feel most comfortable speaking (90.4%, n = 19). One participant identified German and English as equal, while another identified Spanish and English as equally comfortable. Although this was identified as serving an area of Montana with a high rate of Indigenous residents, none of the participants identified themselves as this race.

To promote privacy and comply with granted IRB exemption, the address question was omitted from the PRAPARE questionnaire. This question, while potentially valuable in identifying patients from rural areas, was deemed not necessary to understand overarching unmet social needs in this project setting.

SDOH Analysis

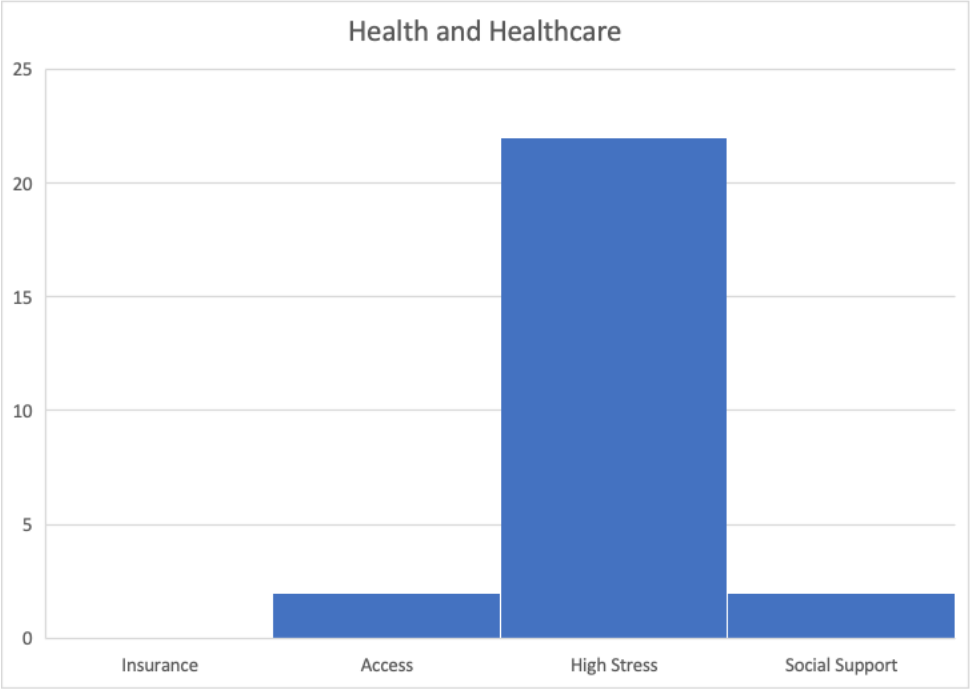
A point was given to each unmet social need. Thus, a patient could report multiple unmet social needs related to one social determinant (Appendix C). For example, related to economic stability, a patient could report both insecure housing as well as unemployment resulting in two unmet social needs. Results overwhelmingly demonstrated the greatest need within this patient population as health and healthcare (92.3%, n = 26), with economic stability reported as the second highest unmet social need (57.1%, n = 16). Table 1 summarizes the major domain results.

Table 1. Unmet Social Needs



As noted, the highest reported unmet needs were related to health and healthcare. Within this category, unmanaged stress was reported by a large majority of participants (78.6%, n = 22). The next highest unmet social need was access to medical, dental, and appointments for daily living (7.14%, n = 2). Difficulty accessing medical services and food was reported by one participant. See Table 2 for data on unmet social needs related to health and healthcare.

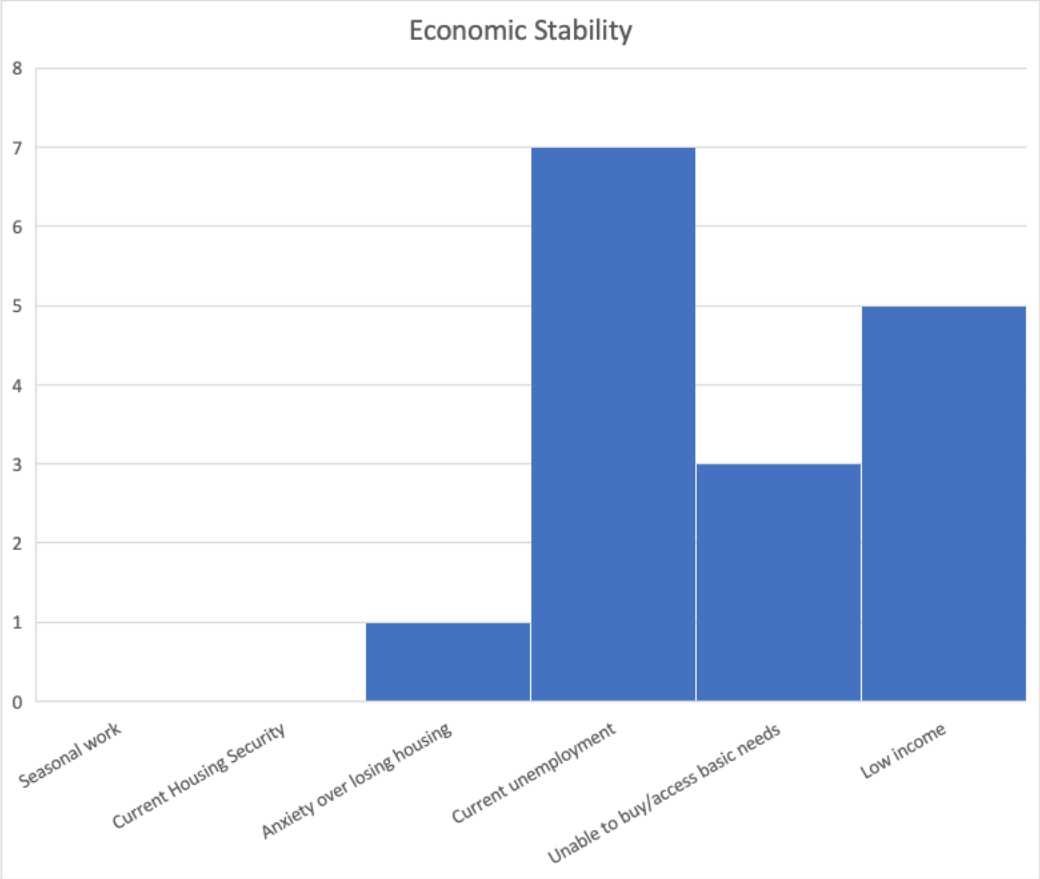
Table 2. Health and Healthcare



Following the social determinant of health and healthcare, economic stability revealed the next highest rate of unmet social needs. The question screening annual income was optional and many (39.3%, n = 11) of the participants opted not to answer this, making meaningful extrapolations difficult. Of the 17 participants who answered the question regarding income, three (14.2%) participants were living below the poverty line in Montana for the number of members in their household. All of these patients reported income equal to or less than $36,000 for annual income. Employment status was identified as a determinant of economic stability as well. Optional responses for employment included unemployed, part-time or temporary work, full-time work, otherwise unemployed but not seeking work, and the choice to not answer. Of the completed surveys nearly one-quarter of participants (23.8%, n = 5) identified themselves as

unemployed. Only one participant chose not to answer this question. See Table 3 for data on unmet social needs related to economic stability.

Table 3. Economic Stability



Patient Resource Guide

Appendix E is a patient resource guide that was compiled detailing local resources that address the SDOH of health and healthcare and economic stability. It was designed in accordance with the CDC's recommendations for effective patient education using serif text and appropriate font sizes for text and headings (Health Literacy, 2021). It was disseminated throughout the facility electronically and is under stakeholder review. It is planned to be available for patient use by May 2021.

Project Qualitative and Stakeholder Collaboration

Following the PDSA methodology, after the first cycle of screenings were implemented, feedback was incorporated into the second implementation cycle. During the scheduled meeting, providers discussed the change process and feedback detailing changes that should be made. The next day, the FNP site representative and the DNP student met and shared providers' concerns.

Suggestions that were taken from providers were implemented in the second cycle. Providers expressed that, as it was a change in the workflow, it was difficult to always remember to ask patients to complete the screening. An email was sent out weekly to serve as a reminder for the new change process. Additionally, patients would occasionally forget to complete the second page. The screenings were changed to two pages from double-sided to ensure that patients complete the second page of the screening. While these changes did not lead to an increase in the number of completed questionnaires on two pages ensured that all questionnaires filled out after that were completed.

Conclusion

This project aimed to normalize the assessment of social needs potentially increasing acceptability and offered availability of resources through patient-specific interventions. Although the providers could not provide the total number of adult patients seen within the project timeframe, making it impossible to assess the total percentage of adults not offered the PRAPARE screening, of the 90 screenings provided, 22 were completed. Among these, two

predominant unmet SDOH were identified. Health and healthcare, as well as economic stability components of the PRAPARE tool were used to develop a pilot resource guide. The literacy level for the guide was set at a fourth-grade reading level with size-11 serif font in a two-color layout for easy demand print (Health Literacy, 2020). The resource guide was compiled by utilizing a more comprehensive local resource guide. To fulfill the project and specific site requirements, the resource was decreased to only include resources that addressed economic stability and health and healthcare.

CHAPTER FIVE

DISCUSSION

Introduction

This DNP project focused on identifying and addressing population-level SDOH needs of adult patients seeking primary health services in a single site within southwest Montana. A two-pronged approach was utilized., The DNP project aimed to successfully screen 50% of adults over the age 18 seen by providers within the chosen site but yielded an unknown return rate. The DNP project aimed to identify specific disparities in SDOH at the chosen site, by collating individual social needs that were then categorized by the CDC's five areas of SDOH. The top two unmet SDOH reflecting the highest rate of unmet social needs included economic stability and health and healthcare. These guided the development of a patient resource guide (Appendix E), which is planned to be available for patient use by May 2021.

Prior to the implementation of the DNP project, the lack of assessment by any provider led to unaddressed and unmet social needs within the setting's adult primary care population. It was identified that unmet social needs contributed to disparities in SDOH within this specific population. Implementation within a facility that values holistic care was advantageous for buy-in from providers. The practice improvement project met with a multitude of difficulties, struggles, and successes.

The results found mirrored the literature where health and healthcare and economic stability are two of the most reported sources of unmet social needs.

Strengths

There were a number of strengths that added to the success and sustainability of this scholarly project. The site's mission of intentional collaboration and holistic care aligned very closely with the goals of this scholarly project. Implementation within a facility that values holistic care was advantageous during the planning stage when establishing the plan for implementation. The PRAPARE screening process identified social needs revealing gaps in the care of patients, which had previously gone unnoticed due to a lack of standardized assessment. For example, patients' reporting of unmanaged levels of stress was a nearly universal theme in patient responses previously unbeknownst to the providers. While this project served as a pilot study for addressing the disparities in SDOH of adults within the primary care setting, it has the potential for future projects and implementations that more fully identify and address unmet social needs. Utilizing an evidence-based, self-administered questionnaire, the PRAPARE tool, strengthened the validity of the results and eased implementation.

This site is uniquely positioned to effectively promote health through the educational focus in its care model. A number of participants reported Medicaid or Medicare as their insurer (39.2%, n = 11) reflecting a fixed, low, or very low income. Among various other criteria, in order to be eligible for Medicaid in Montana, an individual must be a resident of the state of Montana, a US national citizen, a permanent resident, or a legal alien in need of healthcare/insurance assistance whose financial situation would be characterized as low income or very low income (Welcome to Benefits, 2021). It is probable that many of these patients have unmet social needs even if access to healthcare services has been addressed.

Limitations

COVID-19 Restrictions

The COVID-19 pandemic drastically decreased the ability to engage in relationships in a meaningful way throughout the planning and implementation stages of this project. Almost all communication had to be done virtually. In addition, communication was determined by the site to be only between the DNP student and the FNP site representative to decrease additional time and energy requirements of other site providers. While streamlining the process of communication, this made it difficult to assess provider buy-in and engagement.

Multiple components made data collection difficult. During the first PDSA cycle implementation, screenings were difficult to integrate into multiple providers' differing workflows. The inability of the DNP student to physically be at the facility limited the process of collaboration and integration between the scholarly project and faculty. At the end of the first implementation phases, 21 screenings were returned. This was unexpectedly low return rate, as the number anticipated was 80 per week as the four participating providers see on average 20 patients per week. Strategies to increase the percentage of screenings included additional reminders sent through email to providers and an additional reminder during the monthly provider meeting. Implemented strategies to increase PRAPARE screenings yielded limited improvement. This could be in part due to the COVID-19 restrictions that limited the DNP student's visitation of the site. Because the DNP student was unable to be part of monthly meetings, the site representative led the dialogue regarding the importance of these screenings.

This increased the possibility for gaps in communication between the DNP student and the faculty.

According to the IRB exemption, it was necessary that no patient identifiers be a part of the screening processes. This rationale was applied when the question regarding address was omitted from the site-specific PRAPARE screening tool. As this was the only question relating to the built neighborhood and built environment, no data was collected regarding unmet social needs reflecting that social determinant of health. COVID-19 precautions made it difficult for some patients of providers who conducted telehealth appointments to remain anonymous when completing the screening. Telehealth appointments were not taken into account during the planning stages, which could have complicated the low return rate.

Limited Sample

Generalizability from the results of the project is limited for multiple reasons. First, this data may be skewed, as those who struggle with access may not be able to obtain primary care services. Second, although the project site serves numerous Indigenous tribes in southwest Montana, none of the participants identified themselves as American Indian (as specified on the questionnaire), thus not fully representing the needs of adults in the area. This could be due to the low return rate of questionnaires causing a gap in assessment. It also could be due to disproportionate disparities in access to care which is impossible to assess accurately in the outpatient setting.

Future social-needs assessments may help identify broader adult population concerns. Working to standardize the implementation of the screening process among all holistic providers may lead to higher return rates. Increased screening could lead to a more accurate picture of

unmet needs. Additionally, populations of interest may need more specific screenings to identify specific needs. These projects could potentially focus on women, families, Indigenous populations, or adolescents.

Multiple Provider Participation

Buy-in from providers was initially high prior to implementation. However, due to most communication being virtual, it was impossible to assess buy-in from providers throughout the weekly process. Additionally, all communication was with a FNP liaison within the facility making collaboration with other providers difficult. In addition to barriers in communication, multiple providers participating with different workflows and patients made the standardization of the screening process impossible. This was a contributing factor in the low rate of screenings overall.

Closure of Facility

The facility was closed for a week when the practitioners had vacation simultaneously, which was not determined during the planning phase of the project. Thus, the anticipation of this was not incorporated into the original seven-week timeline. This one-week off period greatly reduced patients' availability for the screening. This could potentially account for the drastic decrease in returned surveys during the second implementation of the questionnaire screening.

Patient Engagement

A significant number of patients opted not to answer questions related to income and current employment status. If the questionnaire had been prefaced with standardized

communication by a trusted provider, rates of unanswered questions may have been decreased. Literature indicates there is correlation between increased communication surrounding sensitive issues between the patient and a trusted provider and increased rates of completed screenings (O'Gurek & Henke, 2018). Although patient education was provided, reassurance from individual providers of privacy and the importance of the data might have increased the number of patients who decided to answer questions around income.

As discussed previously, during the first implementation, the questionnaires were originally printed double-sided. This led to multiple incomplete questionnaires. These questionnaires were still included in the aggregation of data. Because of this, data could have been skewed to the questions on the front page which mostly assessed the SDOH of economic status.

Sustainability

The DNP project served as a pilot and increased provider awareness setting the stage for future projects aimed at identifying and addressing SDOH. While numerous barriers existed, sustainability may be strengthened by strategizing for increased buy-in from providers within the facility. Implementation of future projects may also be more effective in a time when COVID-19 restrictions are relaxed or lifted leading to in-person communication and implementation throughout the process. Additionally, because unmanaged stress was an unmet social need in the vast majority of patients, resources for stress management and contacts for internal service referrals could be provided to promote the holistic mission of the site.

The PRAPARE questionnaire may be used for the assessment of unmet social needs of the individual. This assessment can lead to individual recommendations for appropriate services within the community. The PRAPARE questionnaire may also be incorporated into the workflow of every provider within the electronic health record leading to increasingly individualized care within the practice. In addition to physical copies of the patient resource guide, electronic access to the suggested resources through a patient portal may increase engagement from the patient.

The literature supports partnerships between medical and nonmedical sites as a supportive measure to identify and address SDOH (Koh et al., 2020). This could strengthen collaboration and the continuity of care between agencies. Tracking external referral processes could be used to qualify for grants in the future as well as increase compliance with future CMS reimbursement structure changes.

This project created a foundational basis for identifying and addressing broad SDOH within adults receiving care. Various subpopulation categories within the patients of this site existed, such as women, pediatric populations, migrant workers, and Indigenous people, and their needs may be different. However, the limited project timeline prevented further investigation of these subpopulations, thus future screenings may be tailored by the site providers for more individualized social needs assessment. Because the PRAPARE questionnaire can function as an individualized self-administered assessment for patients, findings can increase internal referrals. The integration of the questionnaire into the EHR may increase screening rates at the project site.

Doctor of Nursing Practice (DNP) Essential Recommendations

This scholarly project addressed an existing practice gap regarding the identification and addressment of SDOH. As reported in the literature, disparities in SDOH have broad and overarching consequences in long-term health outcomes for patients, including poor adherence, access to medications, and financial stability to maintain insurance due to unemployment (Havranek et al., 2015). This project identified gaps within this population that mirrored existing literature regarding disparities in economic stability and healthcare, in particular unemployment, lack of insurance, and increased levels of stress among diverse cohorts of patient populations (Weir et al., 2020).

While standardization of healthcare's role still needs rigorous development, evidence-based tools to address disparities in SDOH is a proactive approach to reach patient needs (About SDOH, 2020). Current recommendations exist for assessing unmet social needs, which contribute to decreasing disparities in SDOH, but have not translated to practice (About SDOH, 2020). Guided by the Doctor of Nursing Practice (DNP) essential III outlining Clinical Scholarship and Analytical Methods for Evidence-Based Practice, the PRAPARE questionnaire was chosen due to its well-established validity and reliability (AAPCHO, 2019). Recommendations for future projects include utilizing evidence-based screening tools for specific populations.

Integrating processes for identifying and addressing SDOH into the electronic health record of this project aligns with the DNP Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care. This DNP

essential was met through the integration of the screening tool in provider's workflows. For future projects, multiple easily accessible options exist for the seamless integration of the questionnaire into the electronic health record. This additional measure would promote transparency to providers within the site. The utilization of the electronic health record in identifying unmet social needs of patients is vital when gathering accurate data on a population level.

Essential V: Health Care policy for Advocacy in Health Care aligns with the providers' role to engage in discussions surrounding legislation that affects the health of patients. As mentioned in Chapter Two, policies surrounding reimbursement and incentivization are evolving regarding SDOH. As providers engage in identifying and addressing SDOH within their facilities, it's important that advocacy on a local legislative level take place. On a global level, future use of SDOH screening in the primary care setting is likely to impact quality measures and reimbursement.

Future efforts should examine effective dissemination and implementation strategies that translate evidence-based guidelines for identifying and addressing disparities in SDOH. Regardless of statistical outcomes, this project raised awareness of the prevalence in the disparities in SDOH, and usefulness of the PRAPARE screening tool to identify the needs. Time restrictions precluded the aims of this project assessing the efficacy of the patient resource guide. However, it is the hope that increased awareness of services will help patients to access services that meet current needs that support their long-term health.

Conclusions

Although the goal of increasing screening within the facility from 0% to 50% was not met for various reasons, economic stability and health and healthcare were identified as the two social determinants that reflected the highest rate of unmet needs. The results from this project mirrored the literature citing the same SDOH reflecting the most unmet social needs, increasing the validity of the finding although in a small sample of adults (Weir, 2020). These SDOH were addressed through the development of a patient resource guide. This project has the capacity for long-term sustainability through the integration of screenings in the providers' workflow, further population-level assessments, and intentional collaboration among providers within the site and with local organizations that address individuals' unmet social needs. Further projects may be tailored to fit the needs of the patients within this facility increasing the potential for collaborative holistic care of patients.

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APPENDICES

APPENDIX A

EVIDENCE TABLE

Citation: (i.e., author(s), date of publication, & title)	Conceptual Framework	Design/ Method	Sample/ Setting	Major Variables Studied and Their Definitions	Measurement of Major Variables	Data Analysis	Study Findings	Strength of the Evidence (i.e., level of evidence + quality [study strengths and weaknesses])
Bottino CJ, Rhodes ET, Kreatsoulas C, Cox JE, Fleegler EW. Food insecurity screening in pediatric primary care: can offering referrals help identify families in need? *Acad Pediatr*. 2017;17(5): 497-503.	None listed	Prospective study	N= 432 Boston Massachusetts	Food Insecurity - uncertain access to adequate food	TOA Food Insecurity Screen Referral Menu Demographics collected	Chi-square tests Multiple logistics regression analysis Bivariate analysis (strength of associations was estimated by odds ratios with 95% CI)	34.6% participants were highly food secure 12.2% marginally food secure 31.8% food secure 21.5% food insecure with hunger Direct relationship found between greater food insecurity and increasing odds of selecting one or more referrals	Strengths: Large sample size, appropriate study design Weaknesses: only English-speaking participant, low generalizability

							. An overall increase in services accessed found Subanalysis indicates relationship between food-related referrals and non-food related referrals (i.e. housing)	
Friedman, N. L., & Banegas, M. P. (2018). Toward Addressing Social Determinants of Health: A Health Care System Strategy. *The Permanente Journal*, *22*, 18-095.	None Listed	Analysis of EHR data elements and the development of novel workflows via noncli	N= 11,273 Patients screened	The increase in the identification of needs and referral to community resources by patient navigators as documented in the EHR	Smart Set was utilized to track all identification, referrals, and needs in the EHR	Percentage of patients with specific health insurance Number of patients screened	11,273 patients screened 47,911 needs documented in the EHR 28% Medicare 24% Comme	

https://doi.org/10.7812/TPP/18-095		nical patient navigators to address patient's SDOH through community resource referrals between March 31st, 2016-March 25th, 2018.		Insurance coverage was also documented		Number of needs documented Number of referrals to community services	rcial health plan 22% Medicaid And 26 were non-KP members 66% identified an unmet social need	
Gottlieb LM, Wing H, Adler NE. A Systematic review of interventions on patients' social and economic needs. Am J Prev Med. 2017;53(5): 719-729.	None Identified	Studies analyzed include: Qualitative research, descriptive research, observation,	N=67 Articles analyzed	Focus of research included was efficacy of SDOH conducted in clinical settings The measurements varied	Studies assigned ratings reflecting methodologic quality based on	Review was guided by the PRISMA workflow	Improvements reported in child health were reported in studies analyzed with interventions regarding SDOH	Moderate Strengths: Significant amount of studies analyzed Weaknesses: Qualitative and observational studies made up

		pre-post studies, and RCTs		depending on study	GRADE		Adult health was mixed in regard to improvement in behavioral factors with interventions	most of the studies analyzed
Heller, C. G., Parsons, A. S., Chambers, E. C., Fiori, K. P., & Rehm, C. D. (2020). Social risks among primary care patients in a large urban health system. American Journal of Preventive Medicine, 58(4), 514-525. doi:http://dx.doi.org.proxybz.lib.montana.edu/1	None identified	Pilot study Primary care patients completed two questionnaires: 1 home grown tool and one Health Leads' screener	N=24,633 Primary care patient Large network of hospitals, ambulatory sites, and school of medicine in the Bronx, NY	Having any 1,2, or >3 social risks	Data were extracted from the EHR utilizing Looking Glass Clinical Analytics	SPSS Data analysis	Population patterns and predictors of increased disparities in SDOH were identified. 20% reported at least 1 social risk.	Strengths: significant sample size Significant number of SDOH assessed Limitations: Provides little generalizability beyond New York Not population specific

0.1016/j.amepre.2019.11.011								
Koh, Howard K, Bantham, Amy, Geller, Alan C, Rukavina, Mark A, Emmons, Karen M, Yatsko, Pamela, & Restuccia, Robert. (2020). Anchor Institutions: Best Practices to Address Social Needs and Social Determinants of Health. *American Journal of Public Health (1971), 110*(3), 309-316.	None Identified	3 meta-analysis. 3 databases were searched (Medline & PubMed, Embase, and Web of science) or all publications related to anchor medical institutes interviews with 14 anchor	N= 41	The extent to which SDOH are identified and addressed Policy reforms and their effects Semi-structured interviews with organizational leaders	Qualitative analysis was utilized	4 thematic insights were highlighted with successfully identifying and addressing SDOH as an anchor institute	Findings outlined extensively in writing	Qualitative Lack of literature evaluating long-term outcomes within communities with successful implementation

		med leaders to probe the process of, and reasons for, adopting an anchor mission, its implementation, and the types and outcomes of commitments.						
Rowlands, G., Shaw, A., Jaswal, S., Smith, S., & Harpham, T. (2017). Health literacy and the social determinants of health: a qualitative model from adult learners. *He*	None Listed	Qualitative Study Semi-structured interviews with people who'd participated	N=20	N/A Qualitative methodology	N/A	Health literacy themes were deduced	Themes: Acquiring knowledge was seen as a core skill Clarity and simple language were	Small sample size Low generalizability

alth Promotion International, 32(1), 130–138. https://doi-org.proxybz.lib.montana.edu/10.1093/heapro/dav093		in an English adult health skills program for health					highlighted Inclusivity in regard to ethnicity needed to be present in conversations with providers	
Sorensen, Kristine, Van den Broucke, Stephan, Fullam, James, Doyle, Gerardine, Pelikan, Juergen M, Slonska, Zofia, & Brand, Helmut. (2012). Health literacy and public health: A systematic review and integration of definitions	None listed	Systematic Review Review of Medline Pubmed and Web of science	170 publications	Thematic analysis of literature answering two research questions to answer 2 research question: How is health literacy defined? How can health literacy be conceptualized	N/A	Definitions of health literacy were clearly delineated Concepts of health literacy were thematically synthesized	Greater than 10 years old	

and models. *BMC Public Health, 12*(1), 80.								
Walker, Rebekah J, Smalls, Brittany L, Campbell, Jennifer A, Strom Williams, Joni L, & Egede, Leonard E. (2014). Impact of social determinants of health on outcomes for type 2 diabetes: A systematic review. *Endocrine, 47*(1), 29-48.	None Listed	Systematic Review	61 studies	Markers for management of diabetes: Glycemic control and glycemic control, heart disease markers Social determinants were defined per the WHO	LDL, HDL levels and glycemic control through H1Ac, blood pressure	Summarization of all studies' findings grouped by the social determinant studied social and community context, neighborhood and built environment, and race	Impacts on glycemic control were found in patients who were lower socioeconomic status. Lack of access to healthcare and food insecurity and racial disparities in glycemic control were significant	Search was limited to articles between 2000 and 2013 Publication bias may influence results Small number of RCTs and heterogenous methodology prevented a meta-analysis A majority of articles were observational precluding the ability to comment

								on causation
Weir, Rosy Chang, Proser, Michelle, Jester, Michelle, Li, Vivian, Hood-Ronick, Carlyn M, & Gurewich, Deborah. (2020). Collecting Social Determinants of Health Data in the Clinical Setting: Findings from National PRAPARE Implementation. *Journal of Health Care for the Poor and Underserved*, *31*(2), 1018-1035.	None Listed	Cross-sectional study Data analyzed on three implementation cohorts	Pioneer cohort= 2,982 patients Texas Cohort= 1,655 patients California Cohort= 2,709 patients	measures of social determinants Including housing, financial security, social and emotional health. Household size and income were excluded as they were open-ended	Descriptive Statistics	Mean number of risks per patient Total number or risks 0-22	Pioneer Cohort-6.3 SDH risks Texas Cohort-5.9 SDH risks California Cohort-9.6 SDH risks Average number of patient SDH risk was 7.2/22 possible Unemployment, lack of insurance, and lack of high school diploma were	More studies are needed to understand complex interactions Data was collected within different time periods Most centers were urban and not rural (14 urban and 4 rural)

							some of the highest rated concerns	

Legend

SDOH	Social determinants of health
PRISMA	preferred reporting items for systematic review and meta-analysis and protocols guidelines
GRADE	Grading Recommendations Assessment Development and Evaluation
CI	Confidence Interval
EHR	Electronic Health Record
SDH	Social determinant of health
WHO	World Health Organization

APPENDIX B

PRAPARE SCREENING TOOL

PRAPARE

Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences

PRAPARE®: Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences

Paper Version of PRAPARE® for Implementation as of September 2, 2016

Personal Characteristics

1. Are you Hispanic or Latino?

☐	Yes	☐	No	☐	I choose not to answer this question

2. Which race(s) are you? Check all that apply

☐	Asian	☐	Native Hawaiian
☐	Pacific Islander	☐	Black/African American
☐	White	☐	American Indian/Alaskan Native
☐	Other (please write):		
☐	I choose not to answer this question		

3. At any point in the past 2 years, has season or migrant farm work been your or your family's main source of income?

☐	Yes	☐	No	☐	I choose not to answer this question

4. Have you been discharged from the armed forces of the United States?

☐	Yes	☐	No	☐	I choose not to answer this question

5. What language are you most comfortable speaking?

Family & Home

6. How many family members, including yourself, do you currently live with? _____

☐	I choose not to answer this question

7. What is your housing situation today?

☐	I have housing
☐	I do not have housing (staying with others, in a hotel, in a shelter, living outside on the street, on a beach, in a car, or in a park)
☐	I choose not to answer this question

8. Are you worried about losing your housing?

☐	Yes	☐	No	☐	I choose not to answer this question

9. What address do you live at?
Street: _____
City, State, Zip code: _____

Money & Resources

10. What is the highest level of school that you have finished?

☐	Less than high school degree	☐	High school diploma or GED
☐	More than high school	☐	I choose not to answer this question

11. What is your current work situation?

☐	Unemployed	☐	Part-time or temporary work	☐	Full-time work
☐	Otherwise unemployed but not seeking work (ex: student, retired, disabled, unpaid primary care giver) Please write:				
☐	I choose not to answer this question				

12. What is your main insurance?

☐	None/uninsured	☐	Medicaid
☐	CHIP Medicaid	☐	Medicare
☐	Other public insurance (not CHIP)	☐	Other Public Insurance (CHIP)
☐	Private Insurance		

13. During the past year, what was the total combined income for you and the family members you live with? This information will help us determine if you are eligible for any benefits.

_____

☐	I choose not to answer this question

PRAPARE

Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences

PRAPARE®: Protocol for Responding to and Assessing Patient Assets, Risks, and Experiences

Paper Version of PRAPARE® for Implementation as of September 2, 2016

14. In the past year, have you or any family members you live with been **unable** to get any of the following when it was **really needed**? Check all that apply.

Yes	No	Food	Yes	No	Clothing
Yes	No	Utilities	Yes	No	Child Care
Yes	No	Medicine or Any Health Care (Medical, Dental, Mental Health, Vision)			
Yes	No	Phone	Yes	No	Other (please write):
	I choose not to answer this question				

15. Has lack of transportation kept you from medical appointments, meetings, work, or from getting things needed for daily living? Check all that apply.

	Yes, it has kept me from medical appointments or
	Yes, it has kept me from non-medical meetings, appointments, work, or from getting things that I need
	No
	I choose not to answer this question

Social and Emotional Health

16. How often do you see or talk to people that you care about and feel close to? (For example: talking to friends on the phone, visiting friends or family, going to church or club meetings)

	Less than once a		1 or 2 times a week
	3 to 5 times a week		5 or more times a
	I choose not to answer this question		

17. Stress is when someone feels tense, nervous, anxious, or can't sleep at night because their mind is troubled. How stressed are you?

	Not at all		A little bit
	Somewhat		Quite a bit
	Very much		I choose not to answer this question

Optional Additional Questions

18. In the past year, have you spent more than 2 nights in a row in a jail, prison, detention center, or juvenile correctional facility?

	Yes		No		I choose not to answer this

19. Are you a refugee?

	Yes		No		I choose not to answer this

20. Do you feel physically and emotionally safe where you currently live?

	Yes		No		Unsure
	I choose not to answer this question				

21. In the past year, have you been afraid of your partner or ex-partner?

	Yes		No		Unsure
	I have not had a partner in the past year				
	I choose not to answer this question				

APPENDIX C

PRAPARE QUESTIONS AND CORRESPONDING SDOH

Economic Stability	Education	Health and Health Care	Neighborhood and Built Environment	Social and Community Context
At any point in the past 2 years, has season of migrant farm work been your or your family's main source of income?	What is the highest level of school that you have finished?	What is your main insurance?	Address question was omitted	Are you Hispanic or Latino?
What is your housing situation today?		In the past year, have you or your family members you live with been unable to get any of the following when it was really needed? Medicine or any health care (medical, dental, mental health, vision)		What race(s) are you? Check all that apply
Are you worried about losing your housing?		Stress is when someone feels tense, nervous, anxious, or can't sleep at night because their mind is troubled. How stressed are you?		Have you been discharged from the armed forces of the United States?
What is your current work situation?		How often do you see or talk to people that you care about and feel close to? (For example, talking		What language are you most comfortable speaking?

		to friends on the phone, visiting friends or family, going to church of club meetings)		
In the past year, have you or any family members you live with been unable to get any of the following when it was really needed? Food, utilities, clothing, childcare, phone?				
During the past year, what was the total combined income for you and the family members you live with?				

APPENDIX D

QUALITY IMPROVEMENT PROJECT INFORMATION SHEET

Quality Improvement Project Information Sheet

Introduction: [redacted] is dedicated to offering the best care possible, which is why we are conducting a quality improvement project. The purpose of this project is to assess if our patients have unmet social needs, such as concerns about housing, food, and safety, which could impact their health. Danielle Gillaspie, a registered nurse and Doctor of Nursing Practice student at Montana State University, is leading the project described below.

Purpose: This project includes two steps. First, by completing the attached "*PRAPARE Assessment Tool*" you will help us identify where to begin for the second step. Secondly, a resource guide of Missoula area services will be made for the highest needs identified for [redacted] patients. This guide will be available in early March 2021 and will be free of charge. If you need urgent help before then, please talk with your provider today.

Procedure: The attached questionnaire should take no more than 5 minutes to complete.

You may choose **one** the following, but with **EITHER CHOICE** we ask you to return this to the secure mailbox found in the lobby.

1. Not complete the questionnaire and return this blank copy.
2. Complete the questionnaire and return.

Confidentiality: The questionnaire is completely voluntary, and you may opt out of the project at any time without any changes to your care. Completed documents have no identifiers and forms will be secured in a locked location in [redacted]. Data will be summarized and shared without any identifiers to the [redacted] leadership and the Montana State University Doctor of Nursing Practice faculty.

APPENDIX E

PATIENT RESOURCE GUIDE

Patient Resources for Health and Healthcare

Alcoholics Anonymous
888-607-2000 www.aa-montana.org
Learn about resources and groups for alcoholics in Missoula.

Blue Mountain Clinic
610 N. California Street Missoula, MT 59802
406-721-1646 www.bluemountainclinic.org
Family practice, sexual and reproductive health care, abortion care, and mental health counseling.

Carole A. Graham Home
1326 Wyoming St., Missoula, MT 59801 406-532-9800
www.westernmontanaaddictionservices.org/residential-services-carole-graham-home.html
A 24-hour residential program for substance abuse pregnant and/or parenting women and their children.

Missoula Urban Indian Health Center
830 West Central Missoula, MT 59801
406-829-9515 www.muihc.org
Addiction and mental health services.

Nurse on Call Community Medical Center
406-327-4770
Free service - call nurse hotline and nurses will help determine if symptoms require emergent care

Good Rx
Goodrx.com
Virtual coupons work at almost every U.S. pharmacy.

Partnership Health Center
401 Railroad Street West Missoula, MT 59802
406-258-4789
www.missoulacounty.us/community/partnership-health-center
Serves all community members regardless of income.

Planned Parenthood
219 E. Main Street Missoula, MT 59802
www.plannedparenthood.org
Routine medical exams, sex health information and services, birth control, pregnancy testing, STI testing,

Western Montana Addiction Services
1325 Wyoming Street Missoula, MT 59802
406-532-9800
www.westernmontanaaddictionservices.org
Transitional living assistance with special services for women, teens, and homeless

Youth Dynamics
619 SW Higgins Street Missoula, MT 59803 1-800-406-7170
Private, nonprofit licensed mental health center, for youth and families, with emotional and behavioral issues.

All Nations Health Center
830 W. Central Ave, Missoula, MT
406-829-9515
Culturally competent primary care and behavioral health services

Patient Resources for Employment and Housing Services

Community Dispute Resolution Center
543-1157; 519 S Higgins, Missoula; M-F 1pm-5pm Email: cdrcmissoula@gmail.com
Nonprofit confidential mediation services at little or no cost. Programs specialize in solving landlord/tenant problems, parenting plans, employment disagreements, and family conflicts.

Human Resource Council
728-3710; 1801 S Higgins Missoula; M-F 8:30-5; www.hrcxi.org
Rental assistance (HUD sec. 8), energy costs (LIEAP, Energy Share) and energy conservation (weatherization) assistance, employment and training for youth and WORC teen parents, homeowner rehab loans, support & assistance for disabled indigent adults.

The Lifelong Learning Center
549-8765; 310 S Curtis Missoula; M-F 8a.m.-8p.m.; www.thelifelonglearningcenter.com
Adult Basic and Literacy Education. Basic skills classes, preemployment program, English as second language classes, GED classes and testing and college preparation. Even Start program promotes family literacy. Some daytime and evening classes offered at no cost

Missoula Job Service - Workforce Center
728-7060; 539 S 3rd W; Mon, Wed, Thurs, Fri 7:30-6 Tues. 9-6
www.wsd.dli.mt.gov/local/missoula/ Fax: (406) 721-7094
Employment counseling, proficiency/aptitude testing, job referral training and placement. Computer Resource Center includes internet access, resume assistance, Montana Career Information System and Microsoft WORD access. Employer services. All services offered at no charge.

Missoula Aging Services
406-728-7682
337 Stephens Avenue, Missoula, MT
https://missoulaagingservices.org/
Services include assistance with food security, housing, Medicare and finances, caregiver support, daily living, elder rights, and dementia resources

Free Transportation Services
www.umt.edu/transportation
Office of transportation offers free transportation through UDASH and Mountain Line. Additional information on routes, schedules and trip planning assistance available on website. UDASH bus information available by smartphone app.

Montana Vocational Rehabilitation
329-5400; 1-888-279-7528; 2675 Palmer St., Suite A Missoula; Mon-Fri 8-5
Helps people with permanent disabilities return to competitive employment. Variety of services including counselor on-the-job training, job location services and assessment to determine potential.

Office of Public Assistance
1-888-706-1535; Fax 1-877-418-4533.
NO LOCAL PHONE NUMBER 2677 Palmer St. Ste. 100 Missoula; Mon-Thurs 7-5:30
www.dphhs.mt.gov/hcsd/snap.aspx
Access to S.N.A.P. (Supportive Nutrition Assistance Program, Child Care Assistance, Energy Assistance, Medicaid, and TANF (cash assistance). Based on income. WORC Program; 329-1275; 2677 Palmer St., Ste. 222 Missoula Mon-Fri 7:30-5:00 Provides support for TANF participants to transition into employment and become self-sufficient. Educate people on job hunting, assist with resumes, make job referrals and provide supportive services for employment related expenses.

Opportunity Resources
721-2930; 2821 S Russell Missoula; M-F 8-5; www.orimt.org *Training and employment services for adults with disabilities. Also offers residential and transitional living services*

APPENDIX F

INSTITUTIONAL REVIEW BOARD APPLICATION AND APPROVAL FOR EXEMPTION

MONTANA STATE UNIVERSITY
Request for Designation of Research as Exempt from the Requirement of Institutional Review Board Review
(12/1/2017)

****
THIS AREA IS FOR INSTITUTIONAL REVIEW BOARD USE ONLY. DO NOT WRITE IN THIS AREA.
Confirmation Date:
Application Number:
****

DATE: 12/5/2020

I. INVESTIGATOR(s):
Name: Danielle Gillaspie
Complete Department and/or Home Address (where you want the approval letter sent): **2335 Mount Avenue Unit A, Missoula, Montana, 59801**
Telephone: **406-868-5947**
E-Mail Address: **dgillaspie@billingsclinic.org**
DATE TRAINING COMPLETED: **May 19, 2020 – Gillaspie; November 17,2020 Lucas**

Name of Faculty Sponsor (if above is a student; also must complete CITI training):
Amanda Lucas DNP

SIGNATURE (INVESTIGATOR or ADVISOR): Amanda M Lucas, DNP

(If more than one investigator, repeat information for all investigators or team members.)

II. TITLE OF RESEARCH PROJECT: *(Try to keep title on first page.)*

Multiple Domain Social Determinants of Health Screening in Adults

III. BRIEF DESCRIPTION OF RESEARCH METHODS (also see section VII). If using a survey/questionnaire, provide a copy with this application.

This quality improvement Doctor of Nursing (DNP) project will be completed in two parts utilizing the plan-do-study-act methodology. The first part will include use of a needs assessment of adult primary care patients utilizing the evidence-based tool called the PRAPARE. The PRAPARE screens social needs of adults including food security, housing security, education, access to healthcare, and employment. Given with each questionnaire, will be a patient disclosure ensuring that each patient understand that care will not be affected by the patient's choice to not participate in the project. All questionnaires will be kept confidential within the facility in a locked box. No identifiers will be on the form maintaining anonymity. The implementation will be done in two three-week cycles. Between these cycles, staff input will be elicited and data will be analyzed, as well as modifications made to the implementation strategy. After two three-week implementation cycles, a resource guide will be developed to address the two top unaddressed social needs for patients at the chosen site. The resource guide will detail services in Missoula and the surrounding area, and will be made available for interested clinic patients.

IV. RISKS AND INCONVENIENCES TO SUBJECTS (also see section VII; **do not answer 'None'**):

Risks include the time and energy required to complete the provided screening tool.

V. SUBJECTS:

A. Expected numbers of subjects: **40**

B. Will research involve minors (age <18 years)? Yes **No**
(If 'Yes', please specify and justify.)

C. Will research involve prisoners? Yes **No**

D. Will research involve any specific ethnic, racial, religious, etc. groups of people?
(If 'Yes', please specify and justify.) Yes **No**

E. Will a consent form be used? (Please use accepted format from our website. Be sure to indicate that participation is voluntary. Provide a stand-alone copy. Do not include the form here.)

VI. FOR RESEARCH INVOLVING SURVEYS OR QUESTIONNAIRES:
(Be sure to indicate on each instrument, survey or questionnaire that participation is voluntary.)

A. Is information being collected about:
Sexual behavior? Yes **No**
Criminal behavior? Yes **No**
Alcohol or substance abuse? Yes **No**
Matters affecting employment? Yes **No**
Matters relating to civil litigation? Yes **No**

B. Will the information obtained be completely anonymous, with no identifying information linked to the responding subjects? **Yes** No

C. If identifying information will be linked to the responding subjects, how will the subjects be identified? (Please circle or bold your answers) NA
By nameYes No
By code Yes No
By other identifying information Yes No

D. Does this survey utilize a standardized and/or validated survey tool/questionnaire? **Yes** No

VII. FOR RESEARCH BEING CONDUCTED IN A CLASSROOM SETTING:

A. Will research involve blood draws? (If Yes, please follow protocol listed in the "Guidelines for Describing Risks: blood, etc.", section I-VI.)

VIII. FOR RESEARCH INVOLVING PATIENT INFORMATION, MATERIALS, BLOOD OR TISSUE SPECIMENS RECEIVED FROM OTHER INSTITUTIONS: **NOT APPLICABLE**

A. Are these materials linked in any way to the patient (code, identifier, or other link to patient identity)? Yes No

B. Are you involved in the design of the study for which the materials are being collected?
Yes No

C. Will your name appear on publications resulting from this research?
Yes No

D. Where are the subjects from whom this material is being collected?

E. Has an IRB at the institution releasing this material reviewed the proposed project?
(If 'Yes", please provide documentation.) Yes No

F. Regarding the above materials or data, will you be:
Collecting them Yes No
Receiving them Yes No
Sending them Yes No

G. Do the materials already exist? Yes No

H. Are the materials being collected for the purpose of this study? Yes No

I. Do the materials come from subjects who are:
Minors Yes No
Prisoners Yes No
Pregnant women Yes No

J. Does this material originate from a patient population that, for religious or other reasons, would prohibit its use in biomedical research?
Yes No Unknown source

IX. FOR RESEARCH INVOLVING MEDICAL AND/OR INSURANCE RECORDS

A. Does this research involve the use of:
Medical, psychiatric and/or psychological records Yes No
Health insurance records Yes No
Any other records containing information regarding personal health and illness Yes No

If you answered "Yes" to any of the items in this section, you must complete the HIPAA Worksheet.

MONTANA
STATE UNIVERSITY

INSTITUTIONAL REVIEW BOARD
For the Protection of Human Subjects
FWA 00000165

114 Hamilton Hall
PO Box 173085
Montana State University
Bozeman, MT 59717
Telephone: 406-994-4706
FAX: 406-994-4790
E-mail: irb@montana.edu

Chair: Mark Quinn
406-994-4707
mquinn@montana.edu
Administrator:
Kelly Beiswanger
406-994-4706
kelly.beiswanger@montana.edu

MEMORANDUM

TO: Danielle Gillaspie

FROM: Mark Quinn Mark Quinn KB
Chair, Institutional Review Board for the Protection of Human Subjects

DATE: January 4, 2021

RE: *Multiple Domain Social Determinants of Health Screening in Adults* [DG010421-EX]

The above research, described in your submission of January 4, 2021, is exempt from the requirement of review by the Institutional Review Board in accordance with the Code of Federal regulations, Part 46, section 101. The specific paragraph which applies to your research is:

___ (b) (1) Research conducted in established or commonly accepted educational settings, involving normal educational practices such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

__X__ (b) (2) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability, or be damaging to the subjects' financial standing, employability, or reputation; and (iii) the information obtained is recorded by the investigator in such a manner that the identity of the human subjects can readily be ascertained, directly or through identifiers linked to the subjects, and an IRB conducts a limited IRB review to make the determination required by section 16.111(a)(7).

____ (b) (3) Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if: (i) the human subjects are elected or appointed public officials or candidates for public office; or (ii) federal statute(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.

____ (b) (4) Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available, or if the information is recorded by the investigator in such a manner that the subjects cannot be identified, directly or through identifiers linked to the subjects.

____ (b) (5) Research and demonstration projects, which are conducted by or subject to the approval of department or agency heads, and which are designed to study, evaluate, or otherwise examine: (i) public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs.

_____ (b) (6) Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed, or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the FDA, or approved by the EPA, or the Food Safety and Inspection Service of the USDA.

Although review by the Institutional Review Board is not required for the above research, the Committee will be glad to review it. If you wish a review and committee approval, please submit a Request for Expedited Review Application.