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A Safety Net: Early Assessment of Multiple Social Determinants of Health Risk Factors in the Pediatric Inpatient Population

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A SAFETY NET: EARLY ASSESSMENT OF MULTIPLE SOCIAL DETERMINANTS OF HEALTH RISK FACTORS IN THE PEDIATRIC INPATIENT POPULATION

by

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ABSTRACT

A lack of protocol for screening of social determinants of health (SDH), specifically for pediatric patients, despite national endorsement, is setting a basis for increased rates of negative health outcomes that can follow individuals into adulthood. The PRAPARE tool, or the Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences, is a guided national effort to assist healthcare centers in the collection of the necessary social data required to care for patients and act upon their social determinants of health (The National Association of Community Health Centers [NACHC], 2019). This project acted to identify if the early assessment of multiple SDH, utilizing the PRAPARE survey tool, during inpatient admission, operated as a safety net to yield early identification, intervention, and connection with appropriate resources over the course of 50 admissions.

The survey process was completed within the time course of 30 days and consisted of 50 participants with 49 out of 50 surveys completed. The surveys were then analyzed utilizing the *Risk Tally Score* methodology to categorize participants based on their social risks/needs as low-risk, moderate-risk, or high-risk. Post-assessment data was compared to pre-assessment data, consisting of a retrospective chart review to identify the number of participants who would have prompted a social work/coordinated care consult prior to PRAPARE survey use, to identify if there was an increased rate of identified socially at-risk individuals. The results of the intervention, implementation of PRAPARE, show that overall the utilization of the SDH screening protocol did provide for an increased rate of identified individuals.

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LIST OF ABBREVIATIONS

AAP	American Academy of Pediatrics
AAPCHO	The Association of Asian Pacific Community Health Organization
CCT	Culture Care Theory
CDC	Centers for Disease Control and Prevention
DNP	Doctor of Nursing Practice
IAF	The Institute for Alternative Futures
ICD	International Classification of Disease
NACHC	The National Association of Community Health Centers
OPCA	Oregon Primary Care Association
PPE	Personal Protective Equipment
POI	Population of Interest
PRAPARE	The Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences
SDH	Social Determinant(s) of Health
SES	Socioeconomic Status
USM	The University of Southern Mississippi

CHAPTER I - INTRODUCTION

Problem Description

Despite recommendations by several national medical professional organizations, only a small percentage of practicing physicians/nurse practitioners and hospitals are screening for all five of the social needs recommended by the federal government, which are responsible for 90% of health outcomes: "food, housing, utilities, transportation, and experience with interpersonal violence" (Fraze et al., 2019, p. 1). At a minimum, a majority are screening for at least one social need (Meyer, 2019), but the evidence that social risk factors are highly associated with poorer treatment adherence, poorer health outcomes, and increasing costs of care is mounting (Gold & Gottlieb, 2019). There are increasing quantities of data identifying the importance of physician- and hospital-led interventions addressing patients' social determinants of health (SDH) and/or risks in improving health outcomes and a reduction in the cost of medical care (Fraze et al., 2019).

Background

The PRAPARE tool, or the Protocol for Responding to and Assessing Patients' Assets, Risks, and Experiences (Appendix A; cited from the national PRAPARE social determinants of health assessment protocol, developed and owned by the National Association of Community Health Centers (NACHC), in partnership with the Association of Asian Pacific Community Health Organization (AAPCHO), the Oregon Primary Care Association (OPCA), and the Institute for Alternative Futures (IAF). For more information, visit www.nachc.org/prapare [NACHC, 2019]), which is a guided national effort to assist healthcare centers in collecting the necessary social data required to care

for patients and act upon their SDH. PRAPARE utilizes five core measures to assess an individual's SDH; the core measures are as follows: personal characteristics (race, ethnicity, language, veteran status, and farmworker status), family and home (housing stability), money and resources (education level, employment status, insurance status, and transportation needs), social and emotional health (stress and social integration and support), and other prime measures (such as incarceration history, refugee status, safety, and domestic violence) (NACHC, 2019). The overarching purpose of PRAPARE utilization is to assist healthcare providers in identifying the socioeconomic drivers of poor health outcomes and associated increased health care expenditures. PRAPARE also assists in the proper utilization of integrated services to meet the varying needs of patients and address all realms of SDH (NACHC, 2019). For example, one may be under the assumption that a patient is simply non-compliant with his/her medication and other treatment interventions, such as renal diet and an exercise plan (inclusive of physical therapy and occupational therapy). The implementation of the PRAPARE tool would allow this individual's healthcare provider to identify the underlying reasons for the patient's noncompliance, such as poverty; lack of adequate, safe housing; and only having a third-grade education. Knowing this information regarding the patient's SDH allows for a deeper realization that the patient is not simply non-compliant but rather physically unable to obtain the necessary treatment modalities provided for him/her.

Significance of the Problem

SDH are often overlooked when conducting a thorough health assessment. Physicians, and other health care personnel alike, tend to focus on signs and symptoms, diagnosis, and treatment with little contemplation to how the patient will cope with

regards to accessibility to medical facilities and treatment. The issue is compounded for patients who experience multiple chronic complex conditions who may already be unable to satisfy even their most basic needs of adequate food, water, and shelter. Pediatric patients are further disadvantaged as they rely on the resources of their parents and/or caregivers.

In the United States alone, approximately 18% of children under the age of 18 years were living in poverty in 2016 with approximately 16 million children (21%) residing in food-insecure households (Coleman-Jensen et al., 2016; Fontenot et al., 2018). After controlling for multiple risk factors, research has shown that children who are subject to food insecurity experience a greater risk of negative overall health status, are at increased risk for being admitted to the hospital for health complications, and experience slower recovery times from illness and disease (Schwartz et al., 2020). In a multicenter descriptive study completed at four different children's hospitals to survey hospitalists and nurses providing inpatient treatment regarding their SDH screening practices, results exposed that only 29% and 41% of hospitalists and nurses, respectively, were conducting screening for greater than one SDH. Of the 29% of hospitalists conducting screening, only 26% reported consistency in communicating the patient's SDH needs with the primary care providers. Of the 146 hospitalists (58% response rate), 97% conveyed they did not have a consistently utilized screening tool in place for determining SDH risks (Schwartz et al., 2020). The lack of an identified screening tool to be utilized consistently during admission assessment could potentiate delays in care and necessary interventions.

Pediatric health and health care disparities are a pervasive problem that stems from disparities in the care provided based on race, ethnicity, and socioeconomic status

(SES) (Cheng et al., 2015). Socioeconomic status can be the basis that sets up a broken framework for a child's social risk factors. According to Cheng et al. (2015, p. 961), "Children of color and in low-income families continue to fall behind their more affluent and majority peers in health status. Disparities that originate in childhood have been linked to adult chronic illness." Further data shows that childhood exposure to social risks such as poverty, food insecurity, financial stress, and inadequate housing/poor housing quality is linked to stress, socio-emotional hardships, poorer overall health status, and educational and cognitive insufficiencies (Hunt, 2021). Health disparities remain a quality and safety issue for patient care (Cheng et al, 2015), and an intimate clinician-patient relationship that utilizes an SDH screening protocol would allow clinicians the opportunity to uncover patients who are at high risk and necessitate social work assistance and connection with various resources.

Problem Statement

There is a lack of a consistently utilized scoring tool to determine a patient's SDH and their social needs risk, which potentiates delays in health care and subsequent increases in morbidity and mortality rates. For pediatric patients, does the early assessment of multiple SDH during an inpatient admission, compared to the current admission process lacking SDH assessment, act as a safety net to yield early identification, intervention, and connection with appropriate resources over the course of 50 admissions? If admission includes assessment of SDH via the PRAPARE tool, patients may be immediately identified as needing connection with coordinated care/social work/integrated services and linked to necessary resources to improve health outcomes, medication adherence, appointment adherence, etc.

Available Knowledge

In comparison to other industrialized nations, the United States government is lagging far behind in its social services expenditures despite evidence showing that SDH affects almost all health outcomes. Individuals with unmet social needs are often non-compliant with the health care treatment models prescribed to them and are more likely to frequent an emergency department for health care needs (Thomas-Henkle & Schulman, 2017). As highlighted in part of the Healthy People 2020 campaign, the significance of addressing SDH remains a priority goal for the decade. The SDH topic in Healthy People 2020 is designed to identify ways to reduce health care disparities via producing physical, along with social, environments that promote positive health outcomes for all members of society (Office of Disease Prevention and Health Promotion [ODPHP], 2020).

In 2005, the prevalence rate of individuals in America with greater than one diagnosed chronic health condition was up to as high as 21% (Vogeli et al., 2007). As of 2014, the number of Americans with diagnosed chronic health condition had ascended significantly to 60% for the diagnosis of one chronic health condition and 42% for the occurrence of greater than one diagnosed chronic health condition (Buttorff et al., 2017). The lack of sufficient disease management can increase adverse health outcomes and proliferate rates of comorbidity and mortality for patients diagnosed with one or more chronic health conditions The *chronic complex patient* is described as an individual exhibiting a health condition and/or disease of "chronicity where socio-economic, cultural and environmental dimensions play an essential role, reflecting person-specific factors interfering with the delivery of usual care and decision making and the need to

implement specific individual plans" (Iglesias et al., 2018, p. 1). Chronic conditions can be described as those conditions that have a prolonged duration, identified as greater than one year, with functional restrictions and/or limitiations and a necessity for ongoing management, monitoring, and rehabilitation (Raghupathi & Raghupathi, 2018). An escalating prevalence of patients, specifically pediatric patients, diagnosed with multiple chronic conditions and being considered patients with chronic complex health status with numerous health care needs necessitates a modification in the health care system and the assessment of SDH to accommodate this population and their specific health care requirements.

Needs Assessment

With chronic complex health conditions and needs on the rise and a proposed causal pathway linking lower socioeconomic status with poorer health care outcomes, the foundation for pediatric health care for families with high social needs is already profoundly unstable. Children reared in families with unmet needs will experience poorer health compared to their economically and socially stable counterparts due to limited accessibility to required care, reduced quality of received care, and poor self-care behaviors learned from the previous generation (Knighton et al., 2018). Early assessment of social needs/risks and appropriate interventions can assist in combating poor health outcomes and increase health stability into adulthood.

Synthesis of Evidence

An evidence search was conducted to investigate the relationship between SDH and health care outcomes. The search also acted to perform a needs assessment and gap analysis regarding the healthcare system's assessment of SDH and available connectable

resources. With social risks and needs often going unnoticed and unassessed, it is to no surprise that the vulnerable at-risk population, those with social needs/risks, is still facing negative health outcomes (Fraze et al., 2019).

Search

The investigator utilized various search engines including, but not limited to, the following: JSTOR, PubMed®, MEDLINE®, EBSCOhost, JAMA Network™, Cochrane Library, and CINAHL with full text. Information and data provided by the American Association of Colleges of Nursing (AACN), Centers for Disease Control and Prevention (CDC), The National Association of Community Health Centers (NACHC), and The Office of Disease Prevention and Health Promotion (ODPHP) were also utilized. Keyword searches included SDH, chronic complex health care, and social risk factors. Initial research yielded 102 articles before refinement. Further analysis of the articles and removal of duplications and non-full text articles revealed 29 articles applicable to the project.

Focused Topics and Evidence-based Findings

Social Determinants of Health and Social Risk Factors. The CDC defines SDH as conditions in the environment where an individual resides, works, plays, and learns that affect a wide variety of health risks and outcomes (Centers for Disease Control and Prevention [CDC], 2020). Across the nation, health centers are beginning to understand the importance of the impact of SDH on health outcomes. Included in this realization is the recognition that patients with social risks and needs may require additional resources available to them to support their needs (NACHC, 2020). Healthy People 2030 has included this realization by outlining five key areas of SDH: accessibility of healthcare

and quality of the care received, accessibility to adequate education and education quality, social and community context, financial/economic stability, and qualities of the neighborhood built environment (CDC, 2020). The systematic collection of SDH data via standardized questions enables healthcare providers to gain insight into each patient along with the patient population being served as a whole. Collected data can also assist in targeting resources to those individuals and families who will benefit the most from assistance (NACHC, 2016). Hospitalization offers an additional occasion for screening of SDH and linking patients with beneficial resources; however, a minority of pediatric providers presently report completing SDH screening consistently partly due to data showing that 34% and 32% of hospitalist and nurses, respectively, reported feeling adept at screening for SDH (Schwartz et al., 2020).

Chronic Complex Health Care. Chronic complex, or sometimes referred to as complex chronic, health care involves the management of conditions encompassing numerous morbidities that necessitate the consideration of and management by numerous health care providers and/or facilities along with potential needs for home healthcare services. Patients with chronic complex conditions present providers with unique requirements due to their multitude of health conditions and disabilities/functional limitations. Literature and reported data on the support of self-management effects for patients with chronic complex conditions is limited, specifically when considering the effects of SDH on this patient population (Sevick et al., 2007).

Rationale

Population health can be defined as “aggregate, community, environmental/ occupational, and cultural/socioeconomic dimensions of health”, with aggregates

identifying a set of individuals with similar characteristics. (Pfeiffer & Schadewald, 2017, p. 278). Patients at high risk for social needs form a diverse cultural group often unrecognized and imposed on by various health care disparities. The pediatric subset of this social group is a product of the environment in which they are raised, which leads to subsequent disparities as they are a product of their previous generation. The disparities in care Mississippi's pediatric population diagnosed with chronic complex conditions experience are profoundly evident, as this vulnerable population deserves the best, most advanced care available. The disparities of this specific population arise from lack of knowledge on part of the healthcare team of this group's diverse social risks and needs and lack of adequate resources available and offered to this population due to this lack of knowledge. According to Simon and Berry (2010), the total number of chronic complex pediatric patients needing inpatient hospital care is on the rise. As of 2006, 10.1% of pediatric inpatient admissions were individuals with multiple chronic complex medical conditions including a diverse list of healthcare-related needs, an increase from 8.9% in 1997. The 10.1% used 22.7-21.6% of pediatric total hospital days and 37.1-40.6% of pediatric hospital charges (Simon & Berry, 2010). With the total number of patients with chronic complex medical conditions seeking care rising, it is pertinent to improve the quality of available healthcare and healthcare-related services for this population with evidence-based practices to improve health outcomes.

It is also uncommon for children with chronic complex conditions to have adequate insurance coverage due to psychosocial factors such as their family's income status and the presence of high social risks, which plays a huge role in the quality of care they receive. Lack of the five social needs identified by Fraze et al. (2019), "food,

housing, utilities, transportation, and experience with interpersonal violence" (p. 1), place the patient at risk for morbidity and mortality. Lack of adequate insurance coverage can lead to a subsequent further inhibition in preventative medicine such as wellness visits and immunization administration. As compared to children with adequate health insurance and minimal social risks, those who lack insurance and are unable to meet their basic social needs are less likely to receive medical care when reasonably indicated and are at higher risk for substantial avoidable morbidity. Timely medical care can reduce the duration of symptoms of an illness and prevent subsequent sequelae (Stoddard & Peter, 1994).

Evidence-Based Practice Model—Leininger's Theory of Cultural Care Diversity and Universality

Leininger's Theory of Cultural Care Diversity and Universality, specifically Leininger's Sunrise Enabler, can be utilized to conceptualize the early assessment and identification of multiple SDH risk factors in pediatric patients for early identification, intervention, and connection with appropriate resources. The purpose of Leininger's Cultural Care Theory (CCT) is to assist researchers and clinicians to "discover, document, know, and explain" (McFarland & Wehbe-Alamah, 2019, p. 543) the interdependence of medical care and cultural phenomena (McFarland, 2018; McFarland & Wehbe-Alamah, 2015). Though biology remains an important factor in health, there are nonmedical and non-physiological aspects to health, SDH, that can play a foundation in creating disease and disability for patients. Culture is a huge determinant in a patient's experience with SDH and can explain why some individuals experience different degrees of social disadvantage compared to others (Knibbs-Lamouche, 2012). Following

Leininger's CCT and the Sunrise Enabler allows providers to deliver culturally congruent care via transcultural nursing knowledge. The knowledge CCT and the Sunrise Enabler aims to unite care for patients with different cultural backgrounds, including variations in SDH. Cultural and social structure influences such as "technology, religion, family and kinship, politics, cultural beliefs and practices, economics, physical conditions, and biological factors" act as momentous forces influencing care, well-being, and health/wellness patterns (McFarland & Wehbe-Alamah, 2019). Assessment of SDH via the PRAPARE tool will provide medical providers with information vital to caring for a patient and assists in increasing culturally appropriate care for patients with varying SDH factors.

Specific Aims

The overarching goal is to utilize an assessment tool, in this case, the PRAPARE survey tool, to provide a safety net in the healthcare system. This proposed safety net will act to reduce the number of pediatric patients and their families that are unable to receive the social assistance they require by increasing the identification rate of those at risk for social needs on hospital admission. PRAPARE will essentially act as a tool trigger to identify those at risk and set off a chain reaction including a social work consult and connection with required resources, which will assist in the proper utilization of integrated services to meet the varying needs of patients and address all realms of SDH (NACHC, 2019). Further aims include the identification of exact resources are needed by the specific patient population in question.

DNP Essentials

Priority DNP Essentials focused on in the investigator's research and project concept include Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice, Essential V: Health Care Policy for Advocacy in Health Care, Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes, and Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health.

Essential III: Clinical Scholarship and Analytical Methods for Evidence-Based Practice

As scholarship and research remain hallmarks of DNP education, *Essential III* promotes the design and implementation processes to evaluate outcomes of practice and practice patterns within healthcare and/or community setting and compare this data with national benchmarks or against other specified settings. Essential III also focuses on applying relevant conclusions/discoveries within research to develop practice guidelines, improve practice patterns, and adjust the practice environment accordingly (American Association of Colleges of Nursing [AACN], 2006). Despite SDH not being new to the healthcare industry, the concept lacks research guidance and evidence-based practice changes since some healthcare professionals do not acknowledge its role in patient health.

Essential V: Health Care Policy for Advocacy in Health Care

The provision of health care policy, whether government-mandated or institutionally/organizational created, creates a framework that can facilitate or impede the health care services or the capability of the provider to engage in patient-centered care that encompasses a wide realm of healthcare needs (AACN, 2006). With the rising

importance of SDH assessment, as noted by the increased quantities of data identifying the importance of interventions addressing patients' SDH in improving health outcomes (Fraze et al., 2019), utilizing a simple assessment tool, such as PRAPARE, allows for a quick assessment and fast results to identify at-risk patients for early connection with appropriate resources. At-risk patients require advocacy for social justice, equity, and ethical policies within the healthcare arena.

Essential VI: Interprofessional Collaboration for Improving Patient and Population Health Outcomes

Advocacy for patients affected by SDH depends on more than health care policy advancements. Advocacy also depends on the involvement of a multi-tiered healthcare environment and utilization of various integrated services, requiring highly collaborative teams (AACN, 2006). A provider cannot properly anticipate the utilization of coordinated care/social work services without a proper assessment. The utilization of PRAPARE removes the assumption process from determining assistive services patients may need to achieve their health care goals and positive outcomes.

Essential VII: Clinical Prevention and Population Health for Improving the Nation's Health

According to the AACN (2006), "Clinical prevention is defined as health promotion and risk reduction/illness prevention for individuals and families," (p. 15), and population health is defined to "include aggregate, community, environmental/occupational, and cultural/socioeconomic dimensions of health," (p. 15). Unhealthy lifestyle behaviors rationalize greater than 50% of the United States' preventable deaths, yet potential prevention interventions are commonly underutilized

due to the lack of patient information regarding SDH (AACN, 2006). As previously noted, and with regards to the pediatric population, children reared in families with unmet needs will experience expected poorer health compared to their economically and socially stable counterparts due to limited access to care, lower quality of care, and poor self-care behaviors (Knighton et al., 2018).

Summary

With data showing the importance of SDH and their effect on health care outcomes (Fraze et al., 2019), assessment of these factors could assist in the reduction of poor treatment adherence, poor health outcomes, and increasing costs of care (Gold & Gottlieb, 2019). Utilization of the PRAPARE tool to assess SDH and identify the socioeconomic drivers of poor health outcomes and higher healthcare costs is a tool priceless to health care providers. PRAPARE can also assist in the proper utilization of integrated services to meet the varying needs of patients and address all realms of SDH (NACHC, 2019). In agreement with the current evidence, this DNP project helps to support the positive effects of SDH assessment via the introduction of the PRAPARE tool to the inpatient pediatric setting and assists in aligning healthcare systems with Healthy People 2030 goals for improving the assessment and outcomes of SDH (CDC, 2020).

CHAPTER II - METHODS

Context

The inpatient hospital unit that participated in the study consisted of a 25-bed cardiopulmonary monitored unit that specializes in pediatric chronic complex and palliative care along with intensive step-down pediatric/neonatal care. The hospital, being the only children's hospital located within the state and being a level 1 trauma center, serves 82 counties and averages 9,000 pediatric admissions yearly, and sees approximately 150,000 pediatric patients in clinics and the emergency department. With such a sizable patient population and known data providing that multiple SDH are affecting health care outcomes, there is an exponential need for the systematic assessment of SDH to assist in catching pediatric patients before they *fall through the cracks*.

Intervention(s)

Population of Interest

The population of interest (POI) included pediatric patients admitted to an inpatient pediatric hospital; for the purposes of this study the inpatient pediatric unit utilized is a pediatric intensive care step down and chronic complex care unit. The convenience sample consisted of 50 inpatient pediatric patient parents/caregivers who completed the survey/questionnaire. Data was collected over the course of one month. The sample was to act as a representative of the pediatric population and their parents/caregivers of the children's hospital in question. Inclusion criteria included the parent/caregiver is interviewed having an admitted pediatric patient aged birth to 21 years of age. Exclusion criteria included: if of childbearing age then the patient must not have any children of his or her own. If a patient included in the study were to have children of

his or her children, it would constitute an entirely different population with a set of specific needs that are not covered in the investigator's specific research concept, therefore potentially skewing results.

With language barriers remaining an issue in healthcare advocacy and accessibility, non-English speaking and/or reading patients are not to be excluded from the investigator's research. The PRAPARE tool is translated into 26 languages, as provided by NACHC (2019), able to be utilized for non-English speaking patient parents/caregivers in an effort to extend accessibility to all vulnerable populations. All eligible, consenting patient parents/caregivers, regardless of English-speaking ability, did have the chance to complete the assessment tool in the appropriate language to ensure their social risks/needs are assessed and identified.

Assessment

Potential reduction of health disparities related to SDH in the pediatric population involved the inclusion of an SDH assessment tool, in this case, the PRAPARE tool, to pediatric inpatient hospital admission assessment. PRAPARE utilizes 21 questions to cover personal characteristics, family and home, money and resources, social and emotional health, and three optional additional questions. Distinct risks were measured via a risk tally system (Appendix B). The parent and/or caregiver of each patient was provided an electronic copy of PRAPARE on a tablet that was sanitized between each patient and parent/caregiver interaction. Qualtrics© was utilized to collect and analyze the data provided by the patient parent/caregivers. Each of the PRAPARE's 21 questions were assigned points that were totaled up as a *Risk Tally Score* (Appendix B), which

represents a cumulative total of risks (NACHC, 2019). The points will vary depending on the question and the social risk associated with each question and answer.

The research team, consisting only of the primary investigator, was in charge of administering the PRAPARE tool to participants, after obtaining consent. Post administration of the tool, the same research member was responsible for analyzing the data and completing a *Risk Tally Score* to assess the social risks of the participants. After assessment of all data, findings were compiled noting the number of individuals who score moderate to high risk for social needs/risks.

Step-By-Step Intervention Breakdown

Step 1. Participant inclusion status was identified upon admission assessment to determine if a patient has any exclusion criteria (such as having a child of his or her own). If the patient meets inclusion criteria, as laid out previously in the POI section, the patient parent/caregiver was considered for the study.

Step 2. Appropriate personal protective equipment (PPE) was donned per CDC recommendations prior to entering the patient care area, inclusive of a mask, protective eyewear, and gloves.

Step 3. Informed consent was obtained prior to each patient parent/caregiver participant completing the survey.

Step 4. PPE was doffed per CDC guidelines and the patient care area was exited.

Step 5. The PRAPARE survey was prepared on an iPad for patient parent/caregiver utilization. The iPad was sanitized with Sani-Cloth germicidal disposable wipes per manufacture instructions and allowed to try for 2 minutes prior to being utilized by each participant.

Step 6. After sanitizing the iPad, new PPE was donned and the iPad was provided to the participant. The researcher then exited out of the immediate patient care area and doffed PPE. Approximately five to ten minutes were allowed for the patient's parent/caregiver to complete the survey.

Step 7. Appropriate PPE was donned and the researcher retrieved the iPad from the participant.

Step 8. The iPad with sanitized with a Sani-Cloth germicidal disposable wipe per manufacture instructions and allowed to try for 2 minutes.

Step 9. The process was repeated with each participant.

Contactless Step-By-Step Intervention Breakdown

Step 1. Participant inclusion status was identified upon admission assessment to determine if a patient has any exclusion criteria (such has having a child of his or her own). If the patient meets inclusion criteria, as laid out previously in the POI section, the patient parent/caregiver was considered for the study.

Step 2. Without stepping into the patient care area, staying outside of the patient room, informed consent for survey completion and phone number and/or email contact method were obtained. If non-consenting to survey or provision of phone number and/or email contact method, the interaction was terminated. If consenting to survey completion, each participant was assessed for their preferred method of completing the electronic survey: email or text message link. Surveying was anonymous and was not be linked to email or phone numbers provided by the participants to be utilized to send the link.

Step 3. The link was provided to participants via their preferred method, email, or text link.

Study of the Intervention(s)

Assessment of intervention effectiveness was determined by counting the number of patients who would receive a social work consult based on already in-place mechanisms/trigger systems versus the number of patients who would trigger a social work consult via determination of the PRAPARE assessment *Risk Tally Score*. Patients were placed into three categories, low-risk, moderate-risk, and high-risk. Respectful *Risk Tally Scores* are as follows, low-risk 0-5 tallies, moderate-risk 6-12 tallies, and high-risk 13-22 tallies, with 22 being the highest score possible. Patients who scored moderate to high risk are automatically identified as needing to have a social work consult in place *per protocol*. Scoring in the moderate-risk category triggers the need for a *routine* order, whereas scoring in the high-risk category triggers a need for a *stat* social work consult order.

Observed outcomes, such as an increased number of patients being identified on admission as moderate to high social risk versus a lack of a trigger tool and delayed connection to resources, can be noted as due to the intervention via comparison of pre- and post-assessment data. There is an expected outcome that there will be a greater number of patients identified as needing a connection to appropriate resources (i.e. social work/coordinated care) with the use of the PRAPARE assessment. Further assessment of data collection will display exactly what areas of SDH could be a primary focus for the population in question.

Measures

To identify any improvements and impacts on processes of clinical care, data provided via completion of PRAPARE, by participating patient parents/caregivers, was

analyzed based on its ability to identify patients, as low-, moderate-, or high-risk. Patients scoring as moderate- and high-risk will prompt the need for the placement of a social work consult order. Coordinated care/social work consults are usually only ordered if the parent requests so, medical equipment needs to be ordered, or if abuse is suspected. The main issue is that many families do not understand the realm of what coordinated care covers and what they, coordinated care, can do for them with regards to social risks and needs. Measurements were obtained to see if accomplishments have been made in the form of the increased identification of patients needing connections with coordinated care to increase early connection with resources and interventions for the pediatric population and their families. The numbers of identified needed social work consults will be compared pre-and post-assessment to indicate if there has been an improvement in the workflow process for this vulnerable population. Pre-assessment data was obtained via a retrospective chart review identifying the number of participants who would have prompted a social work/coordinated care consult. Data collected regarding the number of participants who would have prompted a social work/coordinated care consult was not linked back to each participant for post-assessment data comparison, only the number of participants was noted.

Analysis

Analysis of obtained data included a breakdown of the 21 PRAPARE questions to note percentages of responses, providing information regarding areas of social needs/risks pertinent to the population in question. Qualitative data consists of identifying the social needs/risks present. Quantitative data will be displayed in the form of a

statistical breakdown of the number of patients identified as moderate- or high-risk and requiring a social work/coordinated care consult.

The evaluation of outcomes and analysis of whether the project is or is not considered successful, indicated by an increased rate of needed coordinated care referrals for early identification, intervention, and connection with appropriate resources, consisted of a pre- and post-assessment data review. Prior to assessment with the PRAPARE assessment tool, the investigator noted the social work/coordinated care census to identify the number of patients who were linked with social work/coordinated care. The PRAPARE assessment tool was utilized to survey patient's parents/caregivers, and the number of patients who are identified as moderate to high risk for social needs was noted and compared to pre-assessment data. Expectations are that assessment will show that there is a greater number of patients who need coordinated care and affiliated services than those who receive coordinated care consults and connection with affiliated services and benefit from its assistance.

Ethical Considerations

This project was approved by The University of Southern Mississippi (USM) IRB (IRB-21-8) and the utilized facility's IRB. Both approval letters can be found in Appendix B. Specific COVID-19 related precautions were utilized during the intervention phase of the project and include strict handwashing/hand sanitizer use, utilization of Sani-Cloth germicidal disposable wipes for instrument cleaning before and after use by each participant, wearing of facial coverings per facility protocol, and social distancing. Contact with each participant was limited to a maximum of 10 minutes, and no additional contact was made to reduce the transmission of germs.

Issued by the Commission in 1978, The *Belmont Report* notes the three ethical principles for human subject research: respect for persons, beneficence, and justice (Breault, 2006). Ethical protection of human subjects was preserved by maintaining an anonymous status with data collection in order to ensure respect for the participant's rights to privacy; there was no connection between the data and the participants who provide it. All participants also signed a letter of informed consent before the completion of the study survey.

The Centers for Medicare and Medicaid Services (CMMS) Meaningful Measures framework initiative identifies the highest priorities for quality measurement and improvement. CMMS Meaningful Measures contains nineteen Meaningful Measures organized into six healthcare quality priorities: promote effectual communication and coordination of care, encourage effectual prevention and management protocols for chronic conditions and disease, collaborate with communities to promote activities and lifestyle modifications for healthy living, improve healthcare affordability, improve the safety of healthcare by reducing the rates of harm caused by the deliver of care, and support individual person and family engagement as advocates within their care (Centers for Medicare and Medicaid Services [CMMS], 2019). Acting within the principles of beneficence and justice, utilization of PRAPARE as a safety net for social risks and needs assessment fits into the Meaningful Measures framework by assisting in reducing healthcare burdens via the promotion of effective communication and coordination of care by providing healthcare providers information necessary to provide the most efficient, effective care for patients.

Summary

This DNP project intervention was implemented according to the previously detailed methodology outlined in Chapter II: Methods. The PRAPARE tool, a public, free resource of NACHC, was utilized as a standardized assessment tool for SDH data collection and was administered to consenting pediatric inpatient caregivers. The data provided from the implementation of this DNP project assists in demonstrating the usefulness of the PRAPARE tool as a safety net to identify at-risk patients/patient families and connect this vulnerable population to available resources.

CHAPTER III – RESULTS

Demographic Characteristics

A total of 50 participants, parents, and/or caregivers of pediatric inpatient patients meeting inclusion criteria (Inclusion criteria includes the patient [child of the parent/caregiver] being age birth to 21 years of age. Exclusion criteria include childbearing age then the patient must not have any children of his or her own), were included in the study. A total of 49 completed surveys were electronically collected via an anonymous link provided to each participant. One participant did not complete the survey after consent was received as a result of the sudden decline in the patient's health status and a need to withdraw from the study.

Pre-Assessment Data

Pre-assessment data was obtained via a retrospective chart review identifying the number of participants who would have prompted a social work/coordinated care consult. Data collected regarding the number of participants who would have prompted a social work/coordinated care consult was not linked back to each participant for post-assessment data comparison, only the number of participants was noted. Of the 49 participants, only seven prompted a social work consult based on already present hospital admission questions.

Overview of Results

Collected PRAPARE survey results were analyzed utilizing the PRAPARE risk tally system. Each of the PRAPARE's 21 questions were assigned points that were totaled up as a *Risk Tally Score*, which represents a cumulative total of risks (NACHC, 2019). Participants were placed into three categories, low-risk, moderate-risk, and high-

risk, based on their respective PRAPARE *Risk Tally Scores*. Respectful *Risk Tally Scores* are as follows, low-risk 0-5 tallies, moderate-risk 6-12 tallies, and high-risk 13-22 tallies, with 22 being the highest score possible. As noted in Table 1 Survey Results with Relation to Risk Tally Score Categories, of the collected 49 surveys, 19 participants (38.78%) scored in the low-risk category, 18 participants (36.73%) scored in the moderate-risk category, and 12 participants (24.49%) scored in the high-risk category. Individual PRAPARE survey question results, broken down by response percentage, can be noted in Table 2 Survey Results Broken Down by Response Percentage.

Table 1

Survey Results with Relation to Risk Tally Score Categories

	Number of surveys	Percentages with relation to total participant involvement
Low-risk (0-5 tallies)	19	38.78%
Moderate-risk (6-12 tallies)	18	36.73%
High-risk (13-22 tallies)	12	24.49%

Table 2

Survey Results Broken Down by Response Percentage

Question	Results	
Are you Hispanic or Latino?	Yes	6.12%
	No	93.88%
	I choose not to answer this question	0.00%

Table 2 (continued).

Which race(s) are you? Check all that apply.	Asian	2.04%	Black/African American	44.90%
	Pacific Islander	0.00%	American Indian/Alaskan Native	8.16%
	White	34.69%	Other, not listed	10.20%
	Native Hawaiian	0.00%	I choose not to answer this question	0.00%
At any point in the past 2 years, has season or migrant farm work been you or your family's main source of income.	Yes		4.08%	
	No		95.92%	
	I choose not to answer this question		0.00%	
Have you been discharged from the armed forces of the United States?	Yes		10.20%	
	No		89.80%	
	I choose not to answer this question		0.00%	
What language are you most comfortable speaking?	English		97.96%	
	Language other than English		2.04%	
	I choose not to answer this question		0.00%	

Table 2 (continued).

How many family members, including yourself, do you currently live with?	1	2.04%	6	6.12%
	2	22.44%	7	8.16%
	3	30.61%	8	2.04%
	4	14.28%	9	4.08%
	5	8.16%	10	2.04%
What is your housing situation today?	I have housing		75.51%	
	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 a park)		22.45%	
	I choose not to answer this question		2.04%	
Are you worried about losing your housing?	Yes		18.37%	
	No		79.59%	
	I choose not to answer this question		2.04%	
What address do you live at? (Information will only be utilized to identify the demographic zone of participants)	See *Table 3* for a geographic breakdown of participant input by zip code.			

Table 2 (continued).

What is the highest level of school you have finished?	Less than a high school degree	24.49%
	High school diploma or GED	32.65%
	More than high school	42.86%
	I choose not to answer this question	0.00%
What is your current work situation?	Unemployed	8.16%
	Part-time or temporary work	36.73%
	Full-time work	28.57%
	Otherwise unemployed but not seeking work (ex: student, retired, disabled, unpaid primary caregiver)	26.53%
	I choose not to answer this question	0.00%
What is your main insurance?	None/uninsured	14.29%
	Medicaid	44.90%
	CHIP Medicaid	0.00%
	Medicare	0.00%
	Other public insurance (not CHIP)	2.04%
	Other public insurance (CHIP)	0.00%
	Private insurance	38.78%
During the past year, what was the estimated total combined income (in dollars) for you and the family members you live with?.	See *Table 4* for the breakdown of participant input for estimated total household income.	

Table 2 (continued).

In the past year, have you or any family members you live with been unable to get any of the following when it was needed? Check all that apply.	Food	Yes	24.49%
		No	75.51%
		I choose not to answer this question	0.00%
	Utilities	Yes	42.86%
		No	57.14%
		I choose not to answer this question	0.00%
	Medicine or any health care (medical, dental, mental, health, vision)	Yes	69.39%
		No	30.61%
		I choose not to answer this question	0.00%
	Phone	Yes	26.53%
		No	73.47%
		I choose not to answer this question	0.00%
	Clothing	Yes	24.49%
		No	75.51%
		I choose not to answer this question	0.00%
	Childcare	Yes	79.59%
		No	18.37%
		I choose not to answer this question	2.04%

Table 2 (continued).

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 from getting my medications	29.41%
	Yes, it has kept me from non-medical meetings, appointments, work, or from getting things that I need	32.35%
	No	38.24%
	I choose not to answer this question	0.00%
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 week	4.08%
	1-2 times a week	30.61%
	3-5 times a week	26.53%
	5 or more times a week	38.78%
	I choose not to answer this question	0.00%

Table 2 (continued).

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	28.57%
	A little bit	24.49%
	Somewhat	30.61%
	Quite a bit	8.16%
	Very much	8.16%
	I choose not to answer this question	0.00%
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	16.33%
	No	83.67%
	I choose not to answer this question	0.00%
Are you a refugee?	Yes	0.00%
	No	100.00%
	I choose not to answer this question	0.00%
Do you feel physically and emotionally safe where you live?	Yes	75.51%
	No	12.24%
	Unsure	12.24%
	I choose not to answer this question	0.00%

Table 2 (continued).

In the past year, have you been afraid of your partner or ex-partner?	Yes	8.16%
	No	67.35%
	Unsure	2.04%
	I have not had a partner in the past year	22.45%
	I choose not to answer this question	0.00%

A geographical breakdown of participant responses by zip code shows the inclusion of participants from 20 Mississippi zip codes. Of the 49 participants who completed the survey, six reported no permanent address and five chose not to provide geographic data. A detailed breakdown can be noted in Table 3 Geographic Breakdown of Participant Input by Zip Code. In relation to federal poverty guidelines, two participants fell into the 100% or below category, eight fell into the 101-150% category, seven fell into the 151-200% category, and 31 fell into the 200% or more category. One participant chose not to reveal data regarding total household income. A detailed breakdown of participant input for total household income with relation to federal poverty guidelines can be found in Table 4 Breakdown of Participant Input for Estimated Total Household Income in Relation to 2021 Federal Poverty Guidelines. A detailed breakdown of the U. S. Department of Health and Human Services 2021 poverty guidelines can be found in Table 5 U. S. Department of Health and Human Services Office of the Assistance Secretary for Planning and Evaluation's 2021 Poverty Guidelines (U.S. Department of Health and Human Services [USDHHS], 2021).

Table 3

Geographic Breakdown of Participant Input by Zip Code

Zip code	Number of participants residing in zip code
38801	1
39042	4
39047	6
39110	2
39145	1
39180	1
39206	1
39208	1
39211	3
39212	2
39218	1
39301	2
39350	4
39367	1
39402	2
39451	1
39503	1
39601	2
39629	1
39648	1
Zip code not provided by participant (ex: participant chose to not provide geographic data)	5
The participant indicated no permanent address	6

Table 4

Breakdown of Participant Input for Estimated Total Household Income in Relation to 2021 Federal Poverty Guidelines

Category	Number of participants falling into each category	Number of participants falling into each category as a percentage of total participants (49)
100% or below	2	4.08%
101-150%	8	16.33%
151-200%	7	14.29%
200% or more	31	63.27%
Unknown	1	2.04%

Table 5

U. S. Department of Health and Human Services Office of the Assistant Secretary for Planning and Evaluation's 2021 Poverty Guidelines

Persons in family/household	Poverty guideline
1	$12,880
2	$17,420
3	$21,960
4	$26,500
5	$31,040
6	$35,580
7	$40,120
8	$44,660
9	$49,200
10	$53,740

(USDHHS, 2021)

Identified Needs

Participants were asked, as part of the PRAPARE survey, if, in the past year, they or any family members living within the home were unable to get any of the following:

food, utilities, medicine, or any health care (including medical, dental, mental, health, or vision), phone, clothing, or childcare. Childcare and medicine or health care were the top two reported categories that participants identified as unable to obtain by themselves or members of the family living within the home. Further breakdown of each category can be found below.

Food

Of the 49 participants who completed the PRAPARE survey, 24.49% of participants reported that they or someone living within their home was unable to obtain food in the past year.

Utilities

Of the 49 participants who completed the PRAPARE survey, 42.86% of participants reported that they or someone living within their home was unable to obtain and/or pay for utilities for their residence in the past year.

Medicine or Any Health Care (Medical, Dental, Mental, Health, Vision)

Of the 49 participants who completed the PRAPARE survey, 69.39% of participants reported that they or someone living within their home was unable to obtain medicine or necessary medical care in the past year. An inability to obtain medication or health care was identified by participants as the number two reported category identified as unobtainable/unaffordable for participants.

Phone

Of the 49 participants who completed the PRAPARE survey, 26.53% of participants reported that they or someone living within their home was unable to obtain and/or pay for telephone services for their residence/self in the past year.

Clothing

Of the 49 participants who completed the PRAPARE survey, 24.49% of participants reported that they or someone living within their home was unable to obtain and/or pay for clothing in the past year.

Childcare

Of the 49 participants who completed the PRAPARE survey, 79.59% of participants reported that they or someone living within their home was unable to obtain and/or pay for childcare in the past year. At 79.59%, childcare was the number one reported category identified as unobtainable/unaffordable for participants.

Missing Data

As previously noted, though 50 participants were included in the study only 49 completed surveys were collected due to one participant needing to eliminate themselves from the study after consent was obtained. The participant was unable to complete the survey due to a sudden decline in inpatient status and the participant interaction was terminated. Data calculations were adjusted to ensure calculations were not skewed and were representative of the 49 participants who did complete the survey.

Summary

A total of 50 participants were included in the study, and a total of 49 surveys were completed. Pre-assessment data revealed that of the 49 participants, only seven prompted a social work consult based on already present hospital admission questions. PRAPARE survey results indicated that 19 participants (38.78%) scored in the low-risk category for social needs, 18 participants (36.73%) scored in the moderate-risk category for social needs, and 12 participants (24.49%) scored in the high-risk category for social

needs. An in-depth discussion regarding results and their indications can be noted in Chapter IV.

CHAPTER IV – Discussion

Summary

Key Findings and Relevance to the Rationale and Specific Aims

Pre-assessment data comprised of a retrospective chart review utilized to identify the number of participants that would have prompted a social work/coordinated care consult based on already in present hospital admission questions revealed that only seven of the 49 participants would have prompted a social work/coordinated care consult. With the utilization of the PRAPARE survey, participants were categorized into three categories (low-, moderate-, and high-risk) that are indicative of their, participant's, risk for social needs. PRAPARE survey results reveal that 19 participants (38.78%) scored in the low-risk category, 18 participants (36.73%) scored in the moderate-risk category, and 12 participants (24.49%) scored in the high-risk category. As previously discussed, scoring in the moderate-risk category triggers the need for a *routine* social work/coordinated care order, whereas scoring in the high-risk category triggers a need for a *stat* social work/coordinated care consult order. Utilizing the PRAPARE tool, results are indicative that 18 participants (36.73%) need a *routine* social work/coordinated care consult and 12 participants (24.49%) need a *stat*, or immediate, social work/coordinated care consult. In sum, 30 out of 49 participants (61.22%) were in need of a social work/coordinated care consult based on data provided by participants on the individual PRAPARE surveys and resultant *Risk Tally Scores*. When compared to identified participants needing social work/coordinated care consults before PRAPARE survey use (seven out of 49 participants, or 14.29%), usage of the PRAPARE survey increased the

total number of identified patients/patient families who need social work/coordinated care consults by 46.93%.

With an overarching goal of providing a safety net for patients/patient families to assist in reducing the number of pediatric patients and their families that are unable to receive required social assistance with the utilization of the PRAPARE survey tool as an early identifier, utilization of the PRAPARE survey provided for a 46.93% increase in identified patients/patient families at risk for social needs and needing either a routine or stat social work/coordinated care consult. With the further aim of identifying what resources are reported by the patient population, the PRAPARE survey identifies what percentages of the participant population reported the inability to obtain needs in six categories: food (24.49%), utilities (42.86%), medicine, or any health care (69.39%), phone (26.53%), clothing (24.49%), and childcare (79.59%). The PRAPARE survey further identifies that 22.45% of participants reported not having a housing and 18.37% of participants reported a fear of losing their housing.

Strengths of the Project

For the purposes of this research, identifying if the early assessment of multiple SDH during inpatient admission, compared to the current admission process lacking social determinants of health assessment, acts as a safety net to yield early identification, intervention, and connection with appropriate resources, the project provides clear indications that the use of the PRAPARE survey tool does increase early identification of socially at-risk patients/patient families for early intervention and connection with resources via the connection with social work/coordinated care. The utilization of PRAPARE as part of the admission process, as it was utilized for this project, allowed for

quick and early assessment of social risks and needs and can be noted as a strength because PRAPARE can lessen potential delays in inpatient health care and subsequent increases in morbidity and mortality. An individual breakdown of each participant's completed survey provides an in-depth view of each participant's social risks/needs and can further assist in the implementation of interventions and connection with appropriate necessary resources by social work/coordinated care. The project extends beyond meekly identifying at-risk versus not at-risk participants and breaks down the individual risk factors to allow for further investigation into each participant's needs/risks.

Interpretation

Given the nature of the analysis of this research, a causal link can be established between the utilization of the PRAPARE survey tool on the admission of pediatric inpatient patients and the early identification of those at risk for social needs and subsequent connection with coordinated care/social work/integrated services for the appropriate connection with necessary resources. A 46.93% increase in the identification of socially at-risk patients/patient families was revealed with the utilization of the PRAPARE survey tool. The discovered 47.93% increase in early identification of socially at-risk patients/patient families aligns with the specific aims/expected outcomes of this research, as identified previously. The PRAPARE survey proves to act as a trigger tool to recognize those at-risk and to allow for the setting off of a chain reaction inclusive of a social work/coordinated care consult and successive connection with required resources. PRAPARE assists in the proper utilization of integrated services to meet the varying needs of patients and address all realms of SDH, a primary goal as noted by NACHC (2019).

Interpretation of Results When Compared to Similar Publications

Interpretation of results, when compared to results from similar publications, is limited in consequence of the limited data present on the utility of the assessment of SDH on the admission of pediatric inpatient patients. Comparative research did find that the act of screening for SDH in the pediatric population does provide for increased referrals to community-based resources and subsequent improved child health and decreased social needs, but there is a lack of consensus regarding the superiority of one SDH screening tool when compared with others (Hunt, 2021). The American Academy of Pediatrics (AAP) endorses the screening of SDH at all health supervision visits from ages birth until 21 years despite the lack of an identified standardized tool and cites that there is room for personalization of the chosen SDH screening tool by each pediatric provider to fit the needs of the assessment population and availability to act on positive screeners (Hunt, 2021).

Another comparative publication addressing the toxic stress response of unmet social needs in pediatric health care found that unmet social needs and a high level of social risk factors, such as poverty, violence exposure, food insecurity, etc., can prompt a physiological stress response in infants and children and result in negative health effects in adulthood. On the contrary, protective factors, such as the early intervention of social risk factors and meeting of social needs, have been shown to independently predict positive adult health outcomes (McCrae et al., 2021). The publication goes on to state that since SDH are multi-faceted, a multi-systemic approach must be taken in response. Child health practitioners should endorse the existing service continuum and a healthy,

effective relationship across health care and community-based services by promoting early assessment and an early connection with resources (McCrae et al., 2021).

Impact of the Project on People and the Systems

With an increased identification rate of those at risk for social needs by an astounding 47.93%, it is evident that a positive impact on the patient population, pediatric inpatient patients, has occurred. It can be further assumed that the project had a positive effect in the sense that an increased rate of early identification will result in increased connection to appropriate resources for identified needs via social work/coordinated care consults. Interpreted results on the healthcare industry can be tied back to PRAPARE's overarching purpose of identifying socioeconomic drivers of poor health outcomes and higher healthcare system costs and assisting in the utilization of integrated services to meet the social needs of the patient population by addressing all realms of SDH (NACHC, 2019). As stated previously, SDH is recognized as a strong predictor of health outcomes and disease management, and a lack of adequate disease management can result in negative health outcomes and increased rates of comorbidity and mortality (Iglesias et al., 2018), which are driving factors of increased health care costs. According to Bonnell et al. (2021), the critical threat placed on overall health by SDH in adult primary care patients provides for a significantly lower functional capacity, especially when there are one or more social risks present when compared to those without social risks. This threat is only multiplied for pediatric patients, who are completely reliant upon their parents/caregivers to meet their needs. If unable to meet their basic needs, as parents, their children are at risk for negative health outcomes and increased morbidity and mortality. With AAP endorsement of SDH screening in pediatric patients ages birth

to 21 years, a safety net is provided for early identification and intervention at the parental level, which results in positive outcomes for the children.

Cost and Strategic Trade-Offs

As cited by McCrae et al. (2021), though there are boundless positive indications that early assessment and intervention of social risks and unmet social needs provides for increased rates of positive health care outcomes, the multi-systemic approach in response to identified SDH can be seen as a barrier to the system. The largest reported barrier is not within the act of the assessment process itself. Costs of implementing the assessment process are limited, as assessment is quick and efficient and can be completed as part of the normal admission process (as was done for the purposes of this project). The barrier lies within the limited, and sometimes unavailable, community-based and healthcare system-based resources. A lack of resources to combat social risks and fill needs, along with the costs of available resources, often leads to reluctance to implement the screening protocol in the first place (McCrae et al., 2021).

As the cost, and reimbursement, are hindering factors in the process of responding to SDH, the inclusion of ICD-10 "Z" codes documented within the patient's medical record can aid in negating costs indirectly. Though not directly reimbursable, "Z" codes, such as Z55-Z65 (persons with potential health hazards related to socioeconomic and psychosocial circumstances), can be utilized in at-risk patient's medical records to assist in population health, quality improvement initiatives, and panel management. As data is documented and collected in this way value-based payment systems and reimbursement can occur, along with the development of partnerships and innovative solutions to address SDH identified for each patient population in question (O'Gurek & Henke,

2018). In sum, assessment and adequate documentation of SDH will result in the development of and partnership to the required resources for the patient population in question.

Implications for Future Nursing Practice

Completion of this research assisted in identifying the clinical issues regarding the lack of SDH assessment in the pediatric inpatient population by enacting the utilization of the PRAPARE survey tool. PRAPARE is free for facilities to utilize, and NACHC provides a step-by-step guide on implementation for use within electronic health records as well as the ability to utilize a paper format of the survey tool. Implementation assisted in identifying socioeconomic drivers of poor health outcomes and higher health system costs and assisted in the utilization of integrated services to meet the social needs of the patient population by addressing all realms of SDH. Implementing PRAPARE on pediatric inpatient admission and early in the patient assessment/intake process by the advanced practice registered nurse, physician, bedside nurse, or other healthcare professionals alike would provide the perfect situation for early identification of social risks/needs and allow for early connection with social work/coordinated care. Further implications for future practice include having associated hospitals and clinics follow the same assessment process with PRAPARE to ensure the continuum of care is followed and further reduce healthcare disparities by reducing gaps in assessment and provided care.

Limitations

One limitation of this project can be noted in the limited sample size, a total of 50 participants with 49 completed surveys. The limited sample size could have potentially

limited the amount of data collected from survey participants. Increased sample size could have potentially increased generalizability to the POI. Although the sample size is restricted, the utilization of a nationally recognized SDH assessment tool, PRAPARE, and scoring system, PRAPARE *Risk Tally Score*, provides for a thorough collection and assessment of data regarding the five core measures of SDH. A second limitation of the study was related to the limited collection of data from one facility versus multiple facilities, which could have hindered the generalizability of data. Despite the limitations of this small-scale project, data collected is essential to the improvement of population health by showing the importance of SDH assessment and starting the process of implementing SDH assessment tools for the pediatric inpatient population.

Conclusions

In conclusion, the project implemented the nationally recognized PRAPARE survey tool for SDH assessment to act as a safety net for early identification of socially at-risk pediatric inpatient patients and their parents/families with a specific aim of acting as a trigger tool to set off a chain reaction inclusive of a social work/coordinated care consult and subsequent connection with required resources to assist in the proper utilization of integrated services to meet the varying needs of patients and address all realms of social determinants of health. The project adequately shows that the utilization of the PRAPARE survey as a trigger tool increases the rate at which socially at-risk patients/patient families are identified and connected with social work/coordinated care for early intervention and connection with required resources.

APPENDIX A – PRAPARE Survey

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 Pacific Islander	Native Hawaiian 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?

	English
	Language other than English (please write)
	I choose not to answer this question

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, Zipcode: _____

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) Private Insurance		Other Public Insurance (CHIP)

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

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 from getting my medications
	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 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 week		1 or 2 times a week
	3 to 5 times a week		5 or more times a week
	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 question

19. Are you a refugee?

	Yes	No	I choose not to answer this question

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			

(NACHC, 2019)

APPENDIX B – PRAPARE *Risk Tally Score*

PRAPARE Risk Tally Scoring Methodology

"Risk tally score" represents the cumulative number of distinct risks that are present vs absent for an individual patient. This social determinants of health (SDH) total score is calculated by summing the total number of present SDH risk responses as defined by literature for an individual patient completing the full PRAPARE assessment. For example, for the domain of housing status, "risk presence" would be defined as not having housing whereas "absence of risk" would be defined as having housing.

Response Categories	PRAPARE Tally Points by Response Category
Ethnicity: Are you Hispanic or Latino? (maximum of 1 tally)	
No	0
Yes	1
Race: Which race(s) are you? (check all that apply) (maximum of 1 tally)	
Asian	1
Native Hawaiian	1
Pacific Islander	1
Black/African American	1
American Indian/Alaskan Native	1
White	0
Other	1
Multiple Races	1
Farm Worker Status: At any point in the past 2 years, has seasonal or migrant farm work been your or your family's main source of income? (maximum of 1 tally)	
No	0
Yes	1
Veteran Status: Have you been discharged from the armed forces of the United States? (maximum of 1 tally)	
No	0
Yes	1
English Proficiency: What language are you most comfortable speaking? (maximum of 1 tally)	
English	0
Language other than English	1

Generate %FPL (maximum of 1 tally)	
100% or below	1
101-150%	1
151-200%	1
200% or more	0
Unknown	0
Housing Situation: What is your housing situation today? (maximum of 1 tally)	
I have housing	0
I do not have housing	1
Housing Stability: Are you worried about losing your housing? (maximum of 1 tally)	
Yes (unstable housing)	1
No (stable housing)	0
Education: What is the highest level of school that you have finished? (maximum of 1 tally)	
Less than high school degree	1
High school diploma or GED	1
More than high school	0
Employment: What is your current work situation? (maximum of 1 tally)	
Unemployed and seeking work	1
Part-time work	1
Full-time work	0
Otherwise unemployed but not seeking work	1
Insurance: What is your main insurance? (maximum of 1 tally)	
None/uninsured Medicaid	1 1
CHIP Medicaid Medicare	1 1
Other public insurance (Non-CHIP)	1
Other public insurance (CHIP)	1
Private insurance	0
Material Security: 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.) (maximum of 7 tallies)	
Food Clothing	1 1

Utilities	1
Child care	1
Medicine or health care	1
Phone	1
Other (enter written answer)	1
No unmet needs	0
Transportation: Has lack of transportation kept you from medical appointments, meetings, work, or from getting things needed for daily living? (Check all that apply.) (maximum of 2 tallies)	
Yes, it has kept me from medical appointments or from getting my medications	1
Yes, it has kept me from non-medical meetings, appointments, work, or from getting things that I need	1
No transportation needs	0
Social Integration: 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) (maximum of 1 tally)	
Less than once a week	1
1 or 2 times a week	1
3 to 5 times a week	1
More than 5 times a week	0
Stress: Stress is when someone feels tense, nervous, anxious, or can't sleep at night because their mind is troubled. How stressed are you? (maximum of 1 tally)	
Not at all	0
A little bit	1
Somewhat	1
Quite a bit	1
Very much	1

(NACHC, 2019)

APPENDIX C –IRB Approval Letters

Office *of*
Research Integrity

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

118 COLLEGE DRIVE #5125 • HATTIESBURG, MS | 601.266.6576 | USM.EDU/ORI

NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident template on Cayuse IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.
- Face-to-Face data collection may not commence without prior approval from the Vice President for Research's Office.

PROTOCOL NUMBER: IRB-21-8
PROJECT TITLE: A Safety Net: Early Assessment of Multiple Social Determinants of Health Risk Factors in the Pediatric Inpatient Population
SCHOOL/PROGRAM: School of LANP, Leadership & Advanced Nursing
RESEARCHER(S): Emily Brister, Cathy Hughes

IRB COMMITTEE ACTION: Approved
CATEGORY: Expedited

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

PERIOD OF APPROVAL: January 26, 2021

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

Office *of*
Research Integrity

THE UNIVERSITY OF SOUTHERN MISSISSIPPI

118 COLLEGE DRIVE #5125 • HATTIESBURG, MS | 601.266.6576 | USM.EDU/ORI

Modification Institutional Review Board Approval

The University of Southern Mississippi's Office of Research Integrity has received the notice of your modification for your submission A Safety Net: Early Assessment of Multiple Social Determinants of Health Risk Factors in the Pediatric Inpatient Population (IRB #: IRB-21-8).

Your modification has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident template on Cayuse IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER: IRB-21-8
PROJECT TITLE: A Safety Net: Early Assessment of Multiple Social Determinants of Health Risk Factors in the Pediatric Inpatient Population
SCHOOL/PROGRAM: Leadership & Advanced Nursing, Professional Nursing Practice
RESEARCHER(S): Emily Brister ,Cathy Hughes

IRB COMMITTEE ACTION: Approved

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

PERIOD OF APPROVAL: June 30, 2021

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

[redacted]

Institutional Review Board
Telephone (601) 984-2815
Facsimile (601) 984-2961

DHHS FWA # 00003630

Approval Notice
Initial Application

05/25/2021

Emily Brister, BSN, RN, CPN
[redacted]

RE: IRB File # 2020V0326
A Safety Net: Early Assessment of Multiple Social Determinants of Health Risk Factors in the Pediatric Inpatient Population

Your Initial Application was reviewed and approved by the Expedited Review process on 05/25/2021. You may begin this research.

Please note the following information about your approved research protocol:

- Protocol Approval period: 05/25/2021 – 05/24/2022
- Approved Enrollment #: 50
- Performance Sites: [redacted]
- Expedited Category(ies): (7) Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies. (NOTE: Some research in this category may be exempt from the HHS regulations for the protection of human subjects. 45 CFR 46.101(b)(2) and (b)(3). This listing refers only to research that is not exempt.)

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