IMPLEMENTING A SOCIAL DETERMINANTS OF HEALTH SCREENING TOOL AT A

COMMUNITY HEALTH CLINIC

By

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Submitted to the School of Nursing and the Graduate Faculty of the University of Kansas in

partial fulfillment of the requirements for the degree of Doctor of Nursing Practice.

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16 February 2018

Date Project Proposal Accepted

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approved version of the following DNP Project:

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Date Approved:
24 May 2018

Implementing a Social Determinants of Health Screening Tool to Increase Provider Referrals to Community Services

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Problem: Social determinants of health (SDOH) are the structural determinants and conditions in which patients are born, grow, live, work, and age. They include factors such as access to healthcare, employment, education, the physical environment, and socioeconomic status. These SDOH have a significant influence on the health and well-being of an individual. Patients with poor SDOH have worse health care outcomes because of many factors such as poverty, medication underuse, and inadequate disease management. Poverty is a contributing factor to most SDOH needs. These issues of concern affect many of the patients at the Duchesne Clinic (DC). Providers at the DC care for patients who are uninsured and who are 150% at or below the federal poverty line. However, there was no formal process for SDOH screening at the DC prior to this project.

Project Aim: The aim of this project was to implement a SDOH screening tool to increase provider referral rates to community services for patients cared for at the DC.

Project Method: For this quality improvement project the Health Leads screening tool was administered to assess for unmet social needs of adult patients 18 years and older at the DC in Kansas City, Kansas. Patients who screened positive for one or more SDOH needs were referred to either the Community Health Council of Wyandotte County (CHC) or to El Centro (EC). Both existing referral partners provide an in-depth evaluation of patient needs and assist with resolution of needs. After one month of using the SDOH screening tool, pre and post data from the Health Leads tool were analyzed, and referral rates to the CHC and EC were examined.

Results: A total of 416 patients were invited to participate in the project. There were 233(56%) patients who completed the Health Leads screening tool at the DC over one month of data collection. Of those who participated, 146(63%) screened positive for at least one need, and 87(37%) screened negative for any needs. The Health Leads screening tool identified a total of 347 needs for this sample. There was an average of 1.5 needs per patient for the total number of participants, however for those who screened positive there was an average of 2.4 needs per patient. Overall, there were a total of 44 referrals placed to the CHC, and 7 referrals were made to EC. This was a significant improvement when compared to the previous monthly average referral rate of 11 to the CHC.

Conclusion: The referral practices of the providers at the DC were greatly improved after the implementation of the Health Leads screening tool. The systematic use of the Health Leads screening tool increased provider referral rates, which may help the DC patients with social needs. The DC plans to continue use of the Health Leads screening tool as part of its annual evaluation process for patients being seen at the clinic.

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Introduction

Social determinants of health (SDOH) are defined as the conditions in which people are born, grow, work, live and age, and the wider set of forces and systems shaping the conditions of daily life. Such external forces and systems include economic policies, agendas, social norms, and social policies (WHO, 2017a). SDOH are highly influential factors in health and wellness for individuals and populations across the globe.

In 2005, the World Health Organization (WHO) established the Commission on Social Determinants of Health to support countries and global health partners in addressing social factors contributing to health inequalities (WHO, 2017b). In 2008, it published *Closing the Gap in a Generation: Health Equity Through Action on the Social Determinants of Health.* This report shares a common purpose with one of the four overarching goals of Healthy People (HP) 2020: "Create social and physical environments that promote good health for all" (HP, 2017). These publications from leading authorities examine the phenomena of SDOH and how it affects health outcomes. The purpose of this Doctor of Nursing Practice (DNP) quality improvement project was to implement a SDOH screening tool to increase the rates of provider referrals to community services for patients with SDOH needs at the Duchesne Clinic (DC).

Statement of the Problem

According to the Robert Wood Johnson Foundation (RWJF, 2014), the United States (U.S.) has inferior healthcare outcomes on more than 100 measures when compared to other developed countries. Furthermore, 26 countries have longer life expectancies than citizens in the U.S., and 30 nations have lower infant mortality rates. These numbers are particularly alarming considering that in 2011 the U.S. spent $2.7 trillion on healthcare, more than any other country

(RWJF, 2014). Despite this enormous expenditure on healthcare, poor SDOH continue to be related to poor patient outcomes.

Poverty is a major contributor to almost all of the domains of SDOH. The war on poverty in America is over 50 years old. In that time, federal and state governments have spent more than $19 trillion fighting poverty. There are currently 126 federal anti-poverty programs, and the cost the government has spent on welfare and anti-poverty programs has risen from $107 billion to $688 billion (Tanner & Hughes, 2014).

According to the RWJF (2014), more than one-fifth of all children in America live in poverty, and almost half of black children live in areas of concentrated poverty. Nearly one-fifth of all Americans live in neighborhoods marked by limited job opportunities, pollution, limited access to healthy food, poor housing, and few opportunities for physical activity. By 2043, the majority of American citizens will be people of color. People of color disproportionately suffer from economic disadvantages and have worse health outcomes that are caused by preventable reasons (RWJF, 2014). These data illustrate failed attempts to improve the SDOH.

The Duchesne Clinic (DC) is a safety-net clinic that spans over three decades of service to those in need in Kansas. Founded by the Sisters of Charity of Leavenworth, the DC provides access to health care for those who are uninsured and who are 150% at or below the federal poverty line. Over half of the current patient population at the DC is undocumented (J. Zaudke, personal communication, January 12, 2018). Therefore, many patrons at the DC experience an exorbitant amount of disadvantages regarding social needs, which can be challenging for DC providers to address during office visits.

Many providers avoid asking about social issues and focus on medical treatment and lifestyle counseling because they feel helpless in assisting patients with social challenges.

Providers often use a risk factor paradigm that focuses on behavior modification such as smoking cessation, diet modification, and exercise (Andermann, 2016). Prior to this quality improvement project, there was no standard for the evaluation of SDOH at the DC. Provider referrals to community services were based solely on individual provider practice. Successful attention to improve SDOH at the DC has historically been challenging due to limited time with patients, language barriers, and the competing complexity of health concerns.

Conceptual and Operational Definitions

Conceptual Definition of SDOH. The Centers for Disease Control and Prevention (CDC, 2017) defines SDOH as the conditions in the places where people live, learn, work and play that affect a wide range of health risks and outcomes. Healthy People (HP) 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 (HP, 2017).

Operational Definition of SDOH. For the purpose of this project, SDOH were defined as the conditions that affect health risks and outcomes, which included food insecurity, housing instability, child care needs, utility needs, financial resource strain, transportation needs, exposure to violence, and education needs assessed by the Health Leads screening tool.

Conceptual Definition of Health Equity. **"**Health equity means that everyone has a fair and just opportunity to be healthier" (Braveman, Arkin, Orleans, Proctor & Plough, 2017, p. 4) Barriers to health equity include poverty, discrimination, lack of access to fair paying jobs, education, safe environments, and health care (Braveman et al., 2017).

Operational Definition of Health Equity. For the purposes of this project, health equity was defined as an equal opportunity for all patients at the DC to improve their health.

Conceptual Definition of Provider. A healthcare provider is a physician, nurse practitioner, clinical nurse specialist, or physician assistant who can legally help a patient (U.S. Centers for Medicare & Medicaid Services, 2018).

Operational Definition of Provider. For this project, a provider was defined as any physician or nurse practitioner who was licensed and practicing in patient care at the DC.

Conceptual Definition of Community Services. Community services are the links between people's health and their social needs (Community Health Council of Wyandotte County, 2018).

Operational Definition of Community Services. For this project, community services were defined as the organizations and their employees that serve patients with SDOH needs at the DC.

Review of the Literature

A literature review was conducted from August 2017 to December 2017 to evaluate existing data on SDOH. Multiple databases including CINHAL, PubMed, ProQuest, and Google Scholar were searched using the following search terms: *social determinants of health, health disparity, health inequality, health equity, screening tool, health risk assessment, instrument, questionnaire, survey,* and *evaluation*. Publication date was expanded due to limited initial findings. The final inclusion criteria requirements were studies less than 15 years old, written in English, peer reviewed, and those with at least one or more social determinant of health category. Ineffective definitions of SDOH and inconsistent key terms limited the initial primary resource findings. After mining through individual studies, a total of fourteen primary resources were collected.

The identified studies found in this review of the literature were highly variable from each other because they evaluated different populations, tools, methods, determinant domains, and expected outcomes. The existing literature reflects the inconsistent definitions of SDOH,

limited publications and recommendations on this topic, and the differences in stakeholders. Therefore, this literature review is organized into sections related to type of social determinant domain and prominent screening programs.

Social Determinant by Domain

   Food Insecurity. Food insecurity was a prominent social domain focus in the literature. A cross sectional-study of 9,696 participants from the 2011 National Health Interview Survey revealed that 18.8% of the study sample reported food insecurity which was associated with 23.4% of participants who experienced cost-related medication underuse. Those with food insecurity were significantly more likely to have cost-related medication underuse (aOR 4.03) (Berkowitz, Seligman, & Choudhry, 2014).

   Knight, Probst, Liese, Sercy, and Jones (2016) completed a descriptive study using data from the 2011 National Health Interview Survey. The presence of diabetes and food insecurity was evaluated with a 10-item scale in 3,242 adults. Food insecurity was reported in 67.8% of diabetic respondents, and 24.1% of respondents with marginal food security had household incomes below 200% of the federal poverty line. Food-insecure diabetic adults reported skipping doses (35.2%), taking less medication (36.5%), or delaying medication fills to save money (43.7%) (Knight et al., 2016).

   Ma, Gee, and Kushel (2008) found similar results in their cross-sectional analysis of 12,746 children from low-income households included in the 2002 National Survey of America's Families. Results showed that 39% of low-income children reported food insecurity and 29.5% experienced housing instability (Ma, Gee, & Kushel, 2008). Food insecurity in each of the aforementioned studies was related to poor health care outcomes.

Multiple Domains. Several studies have used SDOH screening tools to assist with identification of referral needs for patients. Baer, Scherer, Fleeger, and Hassan (2015) performed a secondary data analysis of 401 participants from an urban hospital-based Adolescent/Young Adult Medicine Program. The investigators used five tools ranging from The Online Advocate (a 130 question survey), to the 9-item Self-Administered Food Security Survey Module for Youths Ages 12-17. Six additional health-related social domain questions involving health care access, education, income security, housing, substance use, and intimate partner violence were asked. Out of the 400 included patients, 32.5% screened positive for food insecurity. Furthermore, increasing food insecurity positively correlated with cumulative burden of social problems. Finally, food insecurity was associated with inadequate health care access, education, income security, housing, and substance use (Baer et al., 2015).

Fleegler and colleagues (2017) performed a descriptive study of 205 parents of children who were being seen for well-child visits at urban pediatric clinics. The five social domains studied included access to health care, housing, food security, income security, and intimate partner violence. All of 82% of families reported at least one health related social problem, and 54% of families reported at least two or more SDOH needs. A total of 115 referrals to services were made for 79 families. Interestingly, 82% of referral agencies found this screening helpful, and 92% of participants deemed the screening tool acceptable for use at office visits (Fleegler et al., 2017).

Garg, Butz, Dworkin, Lewis, and Serwint (2009) published similar findings regarding social needs and provider opinions. The goals of the study were to identify the prevalence of five basic social needs in a cohort of parents attending an urban pediatric hospital, assess parental attitudes about provider assistance for needs, and evaluate providers' attitudes toward addressing

those needs. Parents had an average of two basic needs. Findings showed that 52% of participants were unemployed, 34% lacked education, 19% needed childcare, 16% reported food insecurity, and 10% had housing needs. Moreover, 91% of providers believed that addressing social needs was important, yet only 18% reported actually screening for them (Garg et al., 2009).

Finally, Berkowitz et al. (2015b) conducted a study of 411 patients with diabetes. A questionnaire was used to assess for food insecurity, cost-related medication underuse, housing instability, and energy insecurity. The study revealed that 19.1% reported food insecurity, 27.6% reported cost-related medication underuse, 10.7% had housing instability, and 14.1% had energy insecurity. Poor diabetes control was detected in 46% of participants. Food insecurity was associated with greater odds of poor diabetes control and increased outpatient visits. Cost-related medication underuse was associated with uncontrolled diabetes and increased inpatient visits. Furthermore, increasing number of insecurities was linked with poor diabetes control and increased use of health care resources (Berkowitz et al., 2015b).

Prominent Screening Tools and Programs

The Online Advocate (TOA). Although no SDOH screening tool has yet been validated, all of the following studies showed important results when various tools were used to screen for SDOH. Hassan et al. (2015) used a web-based tool, TOA, to identify needs and make referrals for patients. The tool was created for the study and was developed with questions from validated tools including the Youth Risk Behavior Survey, the Growing Up Today Study, and U.S. Department of Agriculture food security scales. The tool provided feedback about nine health-related social domains: nutrition and fitness, education, safety equipment, healthcare access, housing, food security, income security, substance use, and interpersonal violence. Outcomes

showed that 78% (313/401) of youth self-selected at least one social problem. A total of 47% of participants reported problems in at least two domains, the most prevalent of which were health care access (37%), housing (34%), and food security (29%). Most importantly, 78% (313/401) of participants identified a need and selected an available referral resource. There was an average of 4 problems per patient, but more importantly, 47% of those who selected a referral service had a resolution of their priority problem at follow up (Hassan et al., 2015).

A secondary study was performed as part of a larger study on TOA (Wylie et al., 2012). A convenience sample of the first 50 participants who used TOA in a previous study took part in semi-structured interviews. Overall, 90% of participants reported at least one major SDOH problem and 134 referrals were made for further assistance. Ninety six percent of participants recommended use of TOA and 80% would recommend it for annual doctor visits (Wylie et al., 2012). In summary, TOA appears to have a positive impact on SDOH screening and consequently, increased referral of patients for services.

WE CARE. The WE CARE (WC) program has also made a substantial impact in on screening for social needs in the pediatric research community. The WC system includes Well Child Care, Evaluation, Community Resources, Advocacy, Referral, and Education. A cluster randomized control trial performed by Garg et al. (2015) found that the WC system significantly increased community service referrals. A total of 336 mothers from eight urban community health centers participated in the study. Mothers at well-child visits completed a self-reported screening instrument at four intervention group WC clinics. The tool screened for needs of childcare, employment, education, household heat, food security, and housing. When compared to four control clinics, results showed that more WC mothers obtained at least one referral at the initial visit (70% vs. 8%). At the 12-month follow up, more WC mothers had received

community resources (39% vs. 24%), and WC moms had higher odds of being employed. Furthermore, WC children had higher odds of being in childcare and WC families were less likely to be in a homeless shelter (Garg, Toy, Tripodis, Silverstein, & Freeman, 2015).

Garg et al. (2007) evaluated the effects of the WC project on improving the management of family psychosocial issues at low-income well-child visits. The intervention group discussed significantly more psychosocial topics and had fewer unmet desires. Significantly more parents in the intervention group received at least one referral (51% vs 11.6%). The study findings showed improved outcomes in the WC group and residents reported the survey instrument did not slow the visit time (Garg et al., 2007).

Health Leads. Finally, the RWJF Commission to Build a Healthier America (2014) has endorsed the Health Leads (HL) program, a national health care organization that assists providers with screening patients for basic resource needs. The HL program and its screening methods are some of the most universal and effective tools for tackling SDOH needs. For those reasons, and for lack of any existing validated SDOH screening tool, the HL model and screening tool was the selected basis for this project.

The HL toolkit was created by Amy Hulberg, Manager of Program Operations at HL, and her colleague, Zach Goldstein (A. Hulberg, personal communication, October 17, 2017). The first step in creating the tool was establishing essential social need domains and optional social need domains. The designation of each domain was made by the findings of the Institute of Medicine, Centers for Medicare & Medicaid Services, and the HL experience gained over two decades of implementing social needs programs. The essential social need domains include food insecurity, housing instability, utility needs, financial resource strain, transportation, exposure to violence, and socio-demographic information. Optional need domains provided are childcare,

education, employment, health behaviors, social isolation and supports, and mental health (Health Leads USA, 2016).

The final draft of the toolkit was created from experts on several advisory bodies: the Massachusetts General Hospital, Kaiser Permanente, Johns Hopkins, Boston Medical Center, NYC Health + Hospitals Corporation, Contra Costa Regional Medical Center, Cottage Health, Children's National Medical Center, and other collaborative partners (HL USA, 2016). Eight of the ten tool questions were selected from the following separately validated tools: USDA Household Food Security Survey, Veterans Affairs Homelessness Screening Tool, Children's HealthWatch Survey Instrument, Behavioral Risk Factor Survey, The Impact of Competing Subsistence Needs authored by Cunningham and colleagues (2009), U.S. Department of Justice Exposure to Violence Instrument, U.S. Census Survey of Income and Program Participation, and STOFHLA- Brief Questions to Identify Patients with Inadequate Health Literacy authored by Chew and colleagues (2004) (HL USA, 2016).

Garg, Marino, Vikani, and Solomon (2012) examined 1,059 families who used the HL program. Data were collected over two years and six months, over which time the HL program became the standard of care. Data were obtained on referrals, families' needs, and receipt of resources. Six-month follow up data were also collected. The majority of families (87%) were referred to HL, and an astounding 2,265 family needs were identified. Each family had an average of 2.1 needs. The most common needs were employment (25%), housing (14%), child care (13%), health insurance (11%), and food (10%). Most importantly, 50% of families had enrolled in at least one community resource within six months of accessing HL. Resources for employment, health insurance, and food were utilized most frequently. The main limitation of

this study was that data were collected at one site only so results may not have been generalizable.

The effects of social disparities on disease management were shown to be overwhelmingly negative. Berkowitz et al. (2015a) performed a study of primary care patients in two urban academic clinics in Boston over six months. There were no exclusion criteria for the sample participants. A total of 3,166 patients completed the HL survey that focused on health insurance, affording medications, employment, finances, food, housing, legal issues, transportation, and utilities. As many as 416 patients were identified with unmet needs and were enrolled in the HL program. The most prevalent needs were difficulties affording healthcare including medications (46.5%), food (40.1%), and utilities (36.3%). Patients with unmet needs were more likely to have depression (17.8% vs. 9.5%), diabetes (32.7% vs. 20.4%), hypertension (54.3% vs. 46.3%), be frequent emergency department users (11.3% vs. 5.4%), and have frequent no-shows to clinic (21.6% vs. 11.9%).

A final HL study conducted in three academic adult internal medicine practices confirmed that HL successfully uncovered a slew of SDOH disparities. The objective was to determine the effectiveness of HL on systolic and diastolic blood pressure (SBP and DBP), low-density lipoprotein cholesterol (LDL) level, and hemoglobin A1C level (Berkowitz et al., 2017). Those who screened positive for unmet basic needs were compared with those who screened negative, and secondarily between those who did and did not enroll in HL services. Of the 5,125 adults screened, 1,774 (35%) adults screened positive for at least one unmet need. An overwhelming number of 1,021 (58%) screened positive and enrolled in HL. In analyses of 1,998 participants with hypertension, HL groups saw greater reduction in SBP and DBP. Out of 2,281 patients with the need to lower LDL, results were also favorable for the HL group. However,

there was no improvement in hemoglobin A1C levels between the two comparison groups (Berkowitz, Hulberg, Standish, Reznor, & Atlas, 2017).

In summary, there were several definitions of SDOH used in different studies. Some studies have evaluated only one social determinant such as food insecurity rather than several domains of SDOH. The majority of recommendations have been published within the last few years, which may be the reason for lack of psychometric testing for validity of these SDOH tools. Many of the studies have focused on subjects during well child visits because it is known that children in these clinics often have unmet SDOH needs that affect their health and development. Thus, very little focus has been given to adults suffering from poor SDOH.

Though there are no validated SDOH screening tools, the data collectively showed that structured screening for SDOH yields higher needs sensitivity, improved referral practices, and improved health outcomes. All individual studies indicated a need for screening, positive user feedback, improved resolution of needs, some improved health outcomes, and some provider ease. Based on this literature review, the Health Leads (HL) screening tool appeared to be optimal for this project due to its ease of completion, low reading level, use of questions from validated tools, and its endorsement by the RWJF.

Project Aims

The overall aim of this Doctor of Nursing Practice (DNP) project was to implement a SDOH screening tool to increase provider referrals to community services for those being cared for at the DC. The DC has worked closely with the Community Health Council of Wyandotte County (CHC) and El Centro (EC) to assist low-income patients. The goal of this project was to maximize referrals to these existing partnerships.

Theoretical Framework

For this DNP project, the guiding framework used is called the Donabedian framework. This framework was used because it provides the foundation for conducting a quality improvement (QI) project related to health care (Hall & Roussel, 2014). Donabedian's three primary components of health care are structure, process, and outcomes.

Donabedian's concept of structure is described as the condition in which care is provided, such as resources, organizational characteristics, and human resources. More importantly, structure may be the major deterrent for quality care. In some cases, processes are more directly related to outcomes. Processes are smaller changes that produce more immediate outcomes, and therefore are specific indicators of quality (Hall & Roussel, 2014).

Finally, outcomes are the changes, both desirable and undesirable, that happen in individuals as a result of health care. Quantified patient outcomes are the primary indicator for effective patient care (Hall & Roussel, 2014). The most effective use of this framework is to evaluate all three aforementioned components together. For this DNP project, the major outcome was to improve the health of patients at the DC through improved provider referral rates to community services. For this to occur, the results from this DNP project would provide the evidence to the DC providers and administrators that using the HL screening tool streamlines the process for providers to create referrals for patients in need. Figure 1 illustrates the current structure at the DC prior to project implementation, the expected process change that was implemented as part of this DNP project, and the anticipated outcomes from the process change.
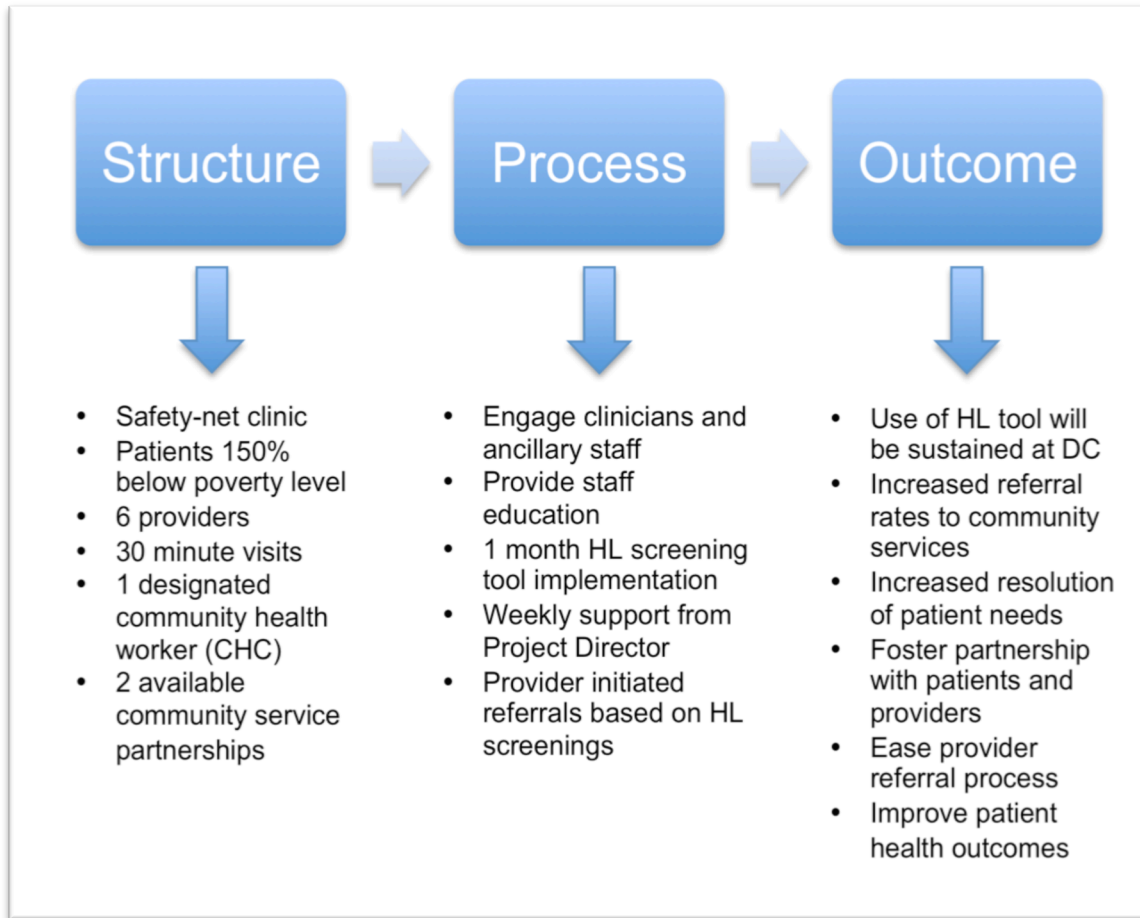
Figure 1

<p style="text-align:center">DNP Project Assumptions</p>

After discussion with the staff working at the DC, there were several assumptions for this DNP project.

1. Referring patients to community services after assessing their SDOH may be helpful to improve their overall health.

2. Although the DC staff were aware of SDOH, there may be room for growth for staff to better understand the scope of the problem and potential resolutions.

3. Assessing SDOH and referring the DC patients for community resources may burden the provider by reducing the time the provider has for physical examination.

4. Addressing SDOH for Spanish-speaking patients may pose an even greater time barrier for providers.

Project Methods

Design

For this DNP Project a quality improvement (QI) process was used. A pre- and post-test design was employed to determine if the DC providers' referral rates to services increased after they used the SDOH screening tool. The Project Director used the three major concepts of the Donabedian framework to guide the study.

Organization Setting

The patient population at the DC has a variety of health care needs such as acute and chronic illness, preventative care needs, limited health literacy, language barriers, and counseling needs. The DC, located in the Strawberry Hill neighborhood of Kansas City, Kansas, offers a wide variety of outreach services to vulnerable populations in Wyandotte County. Due to its community partnerships with CHC and the EC, the DC has been a beacon for patrons who need services that are not available elsewhere.

The DC sees on average 500 adult patients each month. The clinic has a total of six providers, two nurse practitioners and four physicians. From October 2017 through March of 2018, there was a monthly average of 11 referrals being made from the DC to the CHC. For those six months, there were 68 referrals made, and 24 of those patients were enrolled with the CHC to work on resolution of their needs (A. Neira, personal communication, May 4, 2018). The CHC is a non-profit community health collaborative of hospitals, safety-net clinics, federally qualified clinics, public health departments, and academic research institutions in the Kansas City area (CHC, 2017). Several meetings were held with the CHC staff and the Project Director

prior to project implementation. These meetings facilitated knowledge of current processes, and articulated the application of the HL screening tool to optimize the use of the CHC services.

El Centro (EC) is a not-for-profit corporation established in 1976 by the support of the Archdiocese of Kansas City, the Archbishop Ignatius J. Strecker, Father Ramon Gaitan, and the Cordi Marian Sisters. EC has expanded to three locations in the greater Kansas City area, and the organization serves over 12,000 individuals and families annually. EC services include a Senior Day Program, a dual-language Pre-Kindergarten program, money management workshops, home ownership workshops, health education, and policy advocacy for the underserved. EC concentrates and tailors its services for the Latino population. This is exceptionally important for the DC since over half the patient population are undocumented Latinos. Prior to this project, referrals from the DC to EC were not being monitored, which was a desired system change for the DC (J. Zaudke, personal communication, January 12, 2018). Both EC and the CHC have been valuable referral assets to the DC, as they provide an array of services to underserved patients at the DC.

Sample

This project utilized a convenience sample of both adult patients at least 18 years old at the DC, and DC providers who agreed to participate in this project. Patient participants were also limited to those who were English and Spanish speaking.

Health Leads Screening Tool

The Health Leads (HL) screening tool is a survey used to assist providers with screening for basic social needs. The use of this tool helps providers "prescribe" resources to patients (RWJF, 2014). The HL screening tool has a total of 10 questions. The screening tool questions are categorized into eight domains: 1) Food Insecurity; 2) Utility Needs; 3) Housing Insecurity;

4) Childcare Needs; 5) Financial Resource Strain, 6) Transportation Needs; 7) Education; and 8) Exposure to Violence. The ninth question asks, "If you checked YES to any boxes above, would you like to receive assistance with any of these needs?" The final question asks, "Are any of your needs urgent?" Each question in the screening tool is answered with either "yes" or "no."

The tool is designed to be completed within five minutes, which made it an ideal screening method to integrate into clinical workflows (Health Leads USA, 2016). While the HL screening tool is not all-encompassing, it was ideal for use at the DC where providers could access community resources such as the CHC and EC.

Data Collection Plan

Pre-intervention data for the CHC referral rates were obtained from the at the DC from October 1, 2017 to the first day of project implementation. There was no pre-comparison for EC referral rates because the DC did not track EC referral rates prior to project implementation. Pre-intervention data included the average number of adult patients seen at the DC monthly, the average number of patients referred to the CHC per month, and treated needs by domain for the total six months prior to data collection. For one month, patients over the age of 18 who were seen at the DC were invited to fill out the Health Leads screening tool (Appendix A).

The screening tool was offered to patients in both English and Spanish, and was filled out while they were waiting to be seen by a provider. Any duplicate surveys completed by the same patient within the same month were excluded from the findings. Any patient not being seen by a provider, such as nurse visits or lab draws, were excluded from the study. If a patient screened positive for any SDOH need, the provider reviewed the completed form and made an appropriate referral via the electronic medical record for either the CHC or EC.

The staff at the front desk was provided an instruction sheet to guide them in the process of administering the HL screening tool (Appendix B). Ancillary staff at the front desk of the DC offered HL screening tools to all English and Spanish speaking adult patients over the age of 18. Participating patients completed the ten-question HL screening tool while in the DC waiting room. This procedure was designed to minimize the time taken from the visit with the provider.

Medical assistants who helped patients to the examination room delivered the completed tool to the provider. It was the responsibility of the provider to assess the patient's desire for referral and to complete the referral documentation on the electronic medical record. Designated staff selected by the DC Medical Director maintained the completed screening tools after the providers placed the appropriate referral for each patient. The Project Director was on site weekly to assist staff and to collect screening tool data from the DC staff.

Pre-intervention data were collected for the total number of adult patients older than 18 being seen monthly at the DC and the average monthly number of CHC referrals made over the past six months. Post-intervention data points included the following: total number of patients older than 18 being seen at the DC for one month, total number of HL surveys administered, total number of positive HL screenings, total number of consents for referral to services, and total completed referrals to the CHC and EC for one month of data collection. Pre-intervention data included the total number of patient referrals and the frequency of needs per domain at the CHC (Appendix C). The Project Director collected pre-post data from the providers weekly, and generalized data concerning referrals from the Medical Director of the DC who accessed data on all the referrals to the CHC and EC.

Project Timeline

The project proposal defense was completed on February 16, 2018. Quality Improvement designation approval was obtained from the University of Kansas Institutional Review Board on February 26, 2018. Staff education at the DC monthly staff meeting was held on March 20, 2018. Data collection was started on April 2, 2018 and ended on May 1, 2018. The Project Director transferred all of the unidentified pre- and post-implementation data into an Excel document and securely transported the file to the University of Kansas Medical Center Department of Biostatistics on May 4, 2018 to begin data analysis.

Human Subjects and Protected Health Information

The Project Director of this DNP project submitted to the Institutional Review Board (IRB) at the University of Kansas Medical Center and received notification as a QI project (Appendix D). Written approval to conduct this DNP project was obtained from Dr. Jana Zaudke, Medical Director at the DC (Appendix E). No personal health information of participants was utilized or kept by the Project Director, however the name and date of birth of participants was collected, so that completed forms could be scanned into the electronic medical record. After the forms were scanned, they were shredded by the Project Director. As previously stated, the primary focus of this DNP project was provider referral rates; however, unidentified demographic information such as race, ethnicity, age, and gender was described.

Privacy, Data Storage, and Confidentiality

Privacy of patient information was protected by utilization of electronic medical record referrals at the DC. All completed HL screening tools were held on site in a secure location under the supervision of staff selected by the DC Medical Director. The Project Director was on site weekly to obtain non-identifiable data from the completed forms for later data analysis. Completed forms were scanned by the designated DC personnel, and were subsequently

destroyed by the Project Director. All data were stored in patients' electronic medical record as part of their health history.

After a patient screened positive on the HL screening tool by marking "yes" to any of the social needs questions, the provider initiated the referral process securely on the electronic medical record with the patient's consent. The referral process to community services at the DC was unchanged by this QI project. Any Protected Health Information (PHI) involved in the referral process was contained securely within the electronic medical record. However, any PHI submitted to the CHC or EC over the course of the project remained with those organizations. Confidentiality was maintained at all times during the course of the project through the aforementioned security measures.

Data Analysis

Descriptive statistics were performed to describe the number of providers and patients who participated in the project. Demographic data were evaluated related to significance of need according to ethnicity, race, age, and gender. The primary focus was related to the total monthly referral rates; however data were also analyzed to illustrate any barriers to referral such as patient refusal to be referred, duplicate screenings completed in the same month, provider refusal to participate, and incomplete survey responses. An in-depth evaluation of SDOH domain needs was performed to identify the most prevalent needs and the average number of needs per participant. A logistic regression was performed to evaluate social needs related to ethnicity, race, and gender.

Results

From April 2, to May 1, 2018, a total of 416 patients at the DC were invited to complete the HL screening tool. Of those patient visits, a total of 233(56%) patients completed the HL

screening tool in its entirety. Exactly 18 forms were thrown out of the study either due to being incomplete or having marked "yes" to filling out the form previously. Two participants with missing age and gender were included in the descriptive data totals because they were referred to community services, however their data were excluded from statistical analysis.

Out of the 233 participants, 146(63%) reported at least one unmet SDOH need. For those who screened positive, there were a total of 347 needs reported. The average number of needs per patient was 1.5 for the entire sample of 233 patients respectively. The average number of needs per patient for those who reported any need was 2.4 respectively. Frequencies related to race, ethnicity, age, and gender were displayed in tables (Appendix F). The most common race of respondents was white (179), and the majority of respondents were of Hispanic or Latino ethnicity (196). The most common age ranges of respondents were ages 45 to 54 (73), ages 35 to 44 (61), and ages 55 to 64 (54). Female respondents totaled 154, and there were 77 male respondents. The most prominent need by domain was help with reading (76), followed by cost constraints (72), and thirdly food insecurity (55).

A logistic regression was performed to analyze needs risks according to race, ethnicity, and gender. Much of the data were found to be insignificant for need related to these variables, however some were found to be significantly related. When evaluating race, the categories of White, American Indian or Alaskan Native, and Native Hawaiian or Other Pacific Islander did not show significant relation to any specific needs by domain. However, African American respondents were significantly more likely to report financial resource strain ($p=0.0092$) and transportation needs ($p=0.0226$). Those who reported more than one race were significantly more at risk for transportation needs ($p=0.0476$). Both Non-Hispanic and Hispanic patients were

significantly at risk for financial resource strain (p=0.0032) and education needs (p=0.0188). Needs related to gender, both male and female, did not show statistical significance.

Prior to data collection, the CHC had been tracking referrals from the DC and the needs by domain for each patient referred. From the 68 total referrals, 24 patients were enrolled in the CHC services. Out of the 24 patients successfully enrolled in the CHC program from October, 2017 to March, 2018, the most prominent social needs accomplished were as follows: dental care (31), other (21), food pantries (15), specialty medical care (15), primary care/medical home placement (12), discount cards and coupons (10), education to utilize interpreter services (10), medical equipment and supplies (9), Medicaid applications (7), food stamps (6), medications (6), affordable health services (6), employment (6), and basic household needs (5). The CHC will continue to provide comprehensive needs assistance for additional needs that are not included on the HL screening tool. The practices of the CHC will continue to be done through a comprehensive assessment performed by the CHC staff after the DC staff places a referral.

Overall, a total of 89 respondents marked "yes" to wanting assistance. However, the total number of referrals made to the CHC was 44. There were a total of 7 EC referrals made. All six providers at the DC agreed to participate in the project.

Informal feedback from the providers and other staff was helpful to determine future tailoring of the HL screening tool for continued use at the DC. The majority of DC providers stated that screening for SDOH was important, but there were several concerns. First, many patients were misinterpreting the question: "Are you afraid you might be hurt in your apartment building or house?" Patients thought of this question often as related to housing safety such as risk of falling, rather than violence in the home. Providers were concerned that by reviewing the HL screening tool with the patient, they would not have time to answer all the questions during

the patient visit. Providers also stated that they were unsure how to most effectively utilize the referral services, and they would like to have more training to know which community service partnership would best suite a patient's needs. Furthermore, the providers would have liked to include a question at the bottom of the form asking if there were any notes or other self-reported needs not listed above. The providers also suggested that a question be placed at the bottom asking: "Do you want to see a social worker for your needs?" Many times the patients would mark "yes" to wanting assistance, but would not want a referral to social work for that help. Historically, many undocumented patients have refused a referral to social work out of fear that they may be reported to authorities or their children may be taken from their homes (A. Neira, personal communication, May 4, 2018).

It was discovered by the Medical Director at the monthly staff meeting that staff were not placing all referrals because they were fearful of "burning out" their CHC social worker. A previous CHC social worker assigned to the DC had left the clinic due to an overwhelming workload, which left the DC without social needs assistance for quite some time. Education and reaffirmation to place all referrals as indicated by the HL screening tool was given to the providers by the Medical Director after this discovery. Some of this informal feedback and resistance from patients to see a social worker may have contributed to the discrepancy in number of patients wanting assistance, and the actual number of patients referred.

Discussion

The primary aim of this QI project was to increase provider referral rates to community services for patients with unmet social needs at the DC. Prior to data collection, the total number of referrals made to the CHC from October 2017 through March 2018 was 68. This means that the average of monthly referrals to the CHC was 11 respectively. The total number of CHC

referrals made after project implementation was 44. Therefore, the referral rates were significantly greater after systematically screening for SDOH needs at the DC. As previously stated, EC referrals were not previously tracked, however it is encouraging that 7 referrals were made to that organization. The total number of needs (347) was robust, and the average number of needs per patient (1.5) indicates that identification of unmet social needs is of utmost importance. The identification of needs empowers the provider to tailor medical treatment and provide avenues for the patient to obtain assistance and alleviate their burden of disease management.

The DC provides care to a subset of the Wyandotte County population that is highly at risk for many social needs. It is evident, based on the results of this project, that SDOH should be routinely screened for, and acted upon. The literature review illustrates the relationship between social needs intervention and improved health outcomes. Therefore, it is recommended that the DC continues use of the HL screening tool as a form of systematic screening for SDOH for the patients being cared for at the DC.

Dissemination of Results

The results and outcomes of this QI project will be disseminated through several avenues. First, the results and recommendations for practice will be shared at the DC monthly meeting to all staff, as well as to the CHC staff. The project results will be shared by presentation at the annual Student Forum at the University of Kansas Medical Center. It will also be presented at the University of Kansas School of Nursing Doctor of Nursing Practice Project Public Presentation. The project will be publicized on the American Association of Colleges of Nursing website, and results will be shared with the Health Leads Organization. Finally, this QI project will finally be

disseminated to the Kansas Legislature, as well as the Midwest Nursing Research Society conference if the abstracts are accepted.

Conclusion

SDOH can be significant barriers to the health and well being of individuals. Assessing SDOH is important to determine the impact of these variables on a patient's health and wellness. The aim of this project was successfully achieved by significantly increasing provider referrals made to community services through the implementation of a SDOH screening tool at the DC. The DC plans to continue to utilize the HL screening tool as part of its annual evaluation process for all patients. By improving community resource referrals for adults at the DC, those involved in this project have created an opportunity not only to impact the health and wellness of those referred, but possibly their families and future patients cared for at the DC.

Acknowledgements

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Appendix A

Health Leads Screening Tool: Original Form (English)

Recommended Screening Tool

This is a sample social needs screening tool – please tailor it based on your population, scope, and goals.
This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License

Example introductory text: This form is available in other languages. If you do not speak English, call
(800) 555-6666 (TTY: (800) 777-8888) to connect to an interpreter who will assist you at no cost.

Name: _____   Phone number: _____

Preferred Language: _____   Best time to call: _____

			YES / NO
	🍎	In the last 12 months, did you ever **eat less than you felt you should** because there wasn't enough money for food?	Y N
	💡	In the last 12 months, has your **utility company shut off your service** for not paying your bills?	Y N
	🏠	Are you worried that in the next 2 months, you **may not have stable housing?**	Y N
	👥	Do problems getting **child care make it difficult for you to work** or study? *(leave blank if you do not have children)*	Y N
	$	In the last 12 months, have you needed to see a doctor, **but could not because of cost?**	Y N
	🚗	In the last 12 months, have you ever had to go without health care because you didn't have **a way to get there?**	Y N
		Do you ever need help **reading hospital materials?**	Y N
	✚	Are you **afraid you might be hurt** in your apartment building or house?	Y N
	✎	If you checked YES to any boxes above, **would you like to receive assistance** with any of these needs?	Y N
	💬	**Are any of your needs urgent?** For example: I don't have food tonight, I don't have a place to sleep tonight	Y N

FOR STAFF USE ONLY:
- Place a patient sticker to the right
- Give this form to the patient with patient packet
- PRINT your name and role below.

Staff Name: _____

Place patient sticker here

Health Leads Screening Tool: Original Form (Spanish)

# Recommended Screening Tool (Spanish)

This is a Spanish version of the sample social needs screening tool – please tailor it based on your population, scope, and goals. This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License.

Example introductory text: Este formulario está disponible en otros idiomas. Si no habla inglés, llame al (800) 555-6666 (TTY: (800) 777-8888) para conectarse con un intérprete que le ayudará gratis.

Nombre: _____ Teléfono: _____

Idioma preferido: _____ Mejor momento para llamarle: _____

		Sí / No	
	En los últimos 12 meses, **¿comió menos de lo quecreía que necesitaba** porque no le alcanzaba el dinero para la comida?	S	N
	En los últimos 12 meses, **¿le cortó una compañía un servicio público** por no pagar sus cuentas?	S	N
	¿Le preocupa **quedarse sin vivienda estable** en los próximos dos meses?	S	N
	¿Conseguir cuidado de niños le **dificulta trabajar o estudiar?** *(Dejar en blanco si no tiene niños.)*	S	N
	En los últimos 12 meses, ¿necesitó ver a un médico **pero no pudo por el costo?**	S	N
	En los últimos 12 meses, ¿alguna vez dejó de recibir cuidados de salud porque **no tenía cómo llegar al sitio?**	S	N
	¿Alguna vez necesita ayuda para **leer los materiales del hospital?**	S	N
	¿Tiene **miedo de lesionarse** en su edificio de apartamentos o casa?	S	N
	Si marcó que sí a cualquiera de las casillas anteriores, **¿le gustaría recibir ayuda** con cualquiera de estas necesidades?	S	N
	¿Es urgente alguna de estas necesidades? Por ejemplo: No tengo qué comer esta noche, no tengo dónde dormir esta noche.	S	N

PARA USO EXCLUSIVO DEL PERSONAL/FOR STAFF USE ONLY:
- Place a patient sticker to the right
- Give this form to the patient with patient packet
- PRINT your name and role below.

Place patient sticker here

Staff Name: _____

Health Leads Screening Tool Adapted for QI Project (English)

Have you completed this form before? (Circle one) Yes or No
What is your race? (Circle one)
     White
     American Indian/Alaskan Native
     Asian
     Native Hawaiian or Other Pacific Islander
     Black or African American
     More than one race
What is your ethnicity? (Circle one)
     Non-Hispanic or Non-Latino
     Hispanic or Latino

Name:
Date of birth:
What is your age?
What is your gender? (Circle One) Male or Female

		Yes / No
	In the last 12 months, did you ever **eat less than you felt you should** because there wasn't enough money for food?	Y N
	In the last 12 months, has your **utility company shut off your service** for not paying your bills?	Y N
	Are you worried that in the next 2 months, you **may not have stable housing?**	Y N
	Do problems getting **child care make it difficult for you to work** or study? *(leave blank if you do not have children)*	Y N
	In the last 12 months, have you needed to see a doctor, **but could not because of cost?**	Y N
	In the last 12 months, have you ever had to go without health care because you didn't have **a way to get there?**	Y N
	Do you ever need help **reading hospital materials?**	Y N
	Are you **afraid you might be hurt** in your apartment building or house?	Y N
	If you checked YES to any boxes above, **would you like to receive assistance** with any of these needs?	Y N
	Are any of your needs urgent? For example: I don't have food tonight, I don't have a place to sleep tonight	Y N

Referral: Yes   No

        CHC

        EC   _____   _____

Health Leads Screening Tool Adapted for QI Project (Spanish)

Has completado este formulario antes? (Un Círculo) Sí o No
Cuál es su raza? (Un Círculo)
    Blanco
    Indio Americano/Nativo de Alaska
    Asiático
    Nativo de Hawai u Otra Isla del Pacífico
    Negro o Afro americano
    Más de una raza
Cuál es tu etnia? (Un Círculo)
    No Hispano o No Latino
    Hispano o Latino

Nombre:
Fecha de nacimiento:
Cuál es tu edad?
Cuál es su género? (Un Círculo) Masculino o Femenino

|		Sí / No
	En los últimos 12 meses, **¿comió menos de lo quecreía que necesitaba** porque no le alcanzaba el dinero para la comida?	S N
	En los últimos 12 meses, **¿le cortó una compañía un servicio público** por no pagar sus cuentas?	S N
	¿Le preocupa **quedarse sin vivienda estable** en los próximos dos meses?	S N
	¿Conseguir cuidado de niños le **dificulta trabajar o estudiar?** *(Dejar en blanco si no tiene niños.)*	S N
	En los últimos 12 meses, ¿necesitó ver a un médico **pero no pudo por el costo?**	S N
	En los últimos 12 meses, ¿alguna vez dejó de recibir cuidados de salud porque **no tenía cómo llegar al sitio?**	S N
	¿Alguna vez necesita ayuda para **leer los materiales del hospital?**	S N
	¿Tiene **miedo de lesionarse** en su edificio de apartamentos o casa?	S N
	Si marcó que sí a cualquiera de las casillas anteriores, **¿le gustaría recibir ayuda** con cualquiera de estas necesidades?	S N
	¿Es urgente alguna de estas necesidades? Por ejemplo: No tengo qué comer esta noche, no tengo dónde dormir esta noche.	S N

Referral: Yes   No

     CHC

     EC   ____   ____

Appendix B

Duchesne Clinic Quality Improvement Project for Social Determinants of Health Staff
Instructions

First, I would like to thank you for your participation in this Quality Improvement Project. Your help with this project is greatly appreciated, and if you have any questions or concerns please feel free to contact Erin Floyd (Project Director) at (620) 224-0344.

This form details the role you will play in the process of patients completing the Health Leads screening tool. Please hand each patient a copy of the Health Leads screening tool when the patient is being checked in at the front desk.

Next, please check to see if the patient has completed the tool in its entirety. If it has been left blank or partially filled out, please ask the patient once more if they would like to complete it. The patient can decline to fill out the Health Leads screening tool. If the patient needs assistance with reading the tool and filling it out, please assist them with this to the best of your ability.

Finally, please place the completed Health Leads screening tool on the top of the patient's folder so that the Medical Assistant and the Provider are reminded to review this during the office visit. Again, thank you for your participation in this project.

Appendix C

Table 1: Pre-Intervention Data Collection

	October 2017-March 2018
Total referrals to CHC for adults ≥18 years of age	68
Total referrals who refused enrollment to CHC	13
Total referrals who failed to be contacted by CHC	25
Total enrolled successfully in CHC program	24
Total social needs goals obtained by domain for enrolled referrals (not comprehensive) **Food Insecurity** **Utility Assistance** **Stable Housing** **Child Care Supplies** **Financial/Health Services** **Transportation** **Literacy** **Home Violence**	 21 1 1 1 16 1 10 1

Appendix D

NOT HUMAN RESEARCH DETERMINATION

February 26, 2018

Erin Floyd

efloyd@kumc.edu

Dear Erin Floyd:

On 2/26/2018, the IRB reviewed the following protocol:

Type of Review:	Initial Study
Title of Study:	Implementing a Social Determinants of Health Screening Tool at a Community Health Clinic
Investigator:	Erin Floyd
IRB ID:	STUDY00142101
Funding:	None
Grant Title:	*None*
Grant ID:	None
IND, IDE, or HDE:	None
Documents Reviewed:	• NRSG 980 DNP Project Institutional Review Board Quality Improvement Determination Erin Floyd.docx, Category: IRB Protocol;

The IRB determined that the proposed activity is not research involving human subjects as defined by DHHS and FDA regulations.

IRB review and approval by this organization is not required. This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these activities are research involving human in which the organization is engaged, please submit a new request to the IRB for a determination. You can create a modification by clicking **Create Modification / CR** within the study.

Sincerely,

Krista Whitaker
Sr. Compliance Specialist

Appendix E

Caritas Clinics, Inc.

Dear Dr. Janet Pierce,

I am writing in support of Erin Floyd's capstone project, *Implementing a Social Determinants of Health Screening Tool to Increase Provider Referrals to Community Services*. We are excited to have Erin in our clinic. Her project will help us formalize a screening process for Social Determinants of Health.

Again, we are very excited to welcome her on our team, and thank you and the KU School of Nursing for supporting Erin and her project.

Sincerely,

Jana K. Zaudke MD, MA
Medical Director
Caritas Clinics, Inc.
636 Tauromee
Kansas City, KS 66101
(913) 321-2626
Jana.Zaudke@caritasclinics.org

818 N. 7th Street   Leavenworth, KS 66048   Phone: 913-651-8860   Fax: 913-682-4409
Affiliate of the Sisters of Charity of Leavenworth Health System
Saint Vincent and Duchesne Clinics are United Way Agencies

Appendix F

Table 2: Post-Intervention Descriptive Data

April 2 to May 1, 2018

	April 2-May 1, 2018
Total Count by Race	
White	181
American Indian or Alaska Native	1
Asian	0
Native Hawaiian or Other Pacific Islander	1
Black or African American	11
More than one race	41
Total Count by Ethnicity	
Non-Hispanic or Non-Latino	37
Hispanic or Latino	196
Total Count by Age	
18 to 24	6
25 to 34	14
35 to 44	61
45 to 54	73
55 to 64	54
≥ 65	23
Total Count by Gender	
Male	77
Female	154
Total adults ≥ 18 years of age seen at the DC	416
Total number of HL screenings administered	233
Total positive HL screenings	146
Total negative HL screenings	87
Total consents for referral to the CHC or EC	89
Total completed referrals to the CHC	44
Total completed referrals to EC	7
Average number of reported needs per patient	1.5
Average number of needs per positively-screened patients	2.4
Total needs reported	347

Table 3: Social Needs by Race

Race	Food	Utilities	Housing	Child Care	Cost	Transportation	Education	Home Violence	Total Needs
White	41	27	26	14	51	21	58	19	257
American Indian or Alaska Native	0	0	1	0	0	1	0	0	2
Asian	0	0	0	0	0	0	0	0	0
Native Hawaiian or Other Pacific Islander	0	0	0	1	1	0	1	0	3
Black or African American	4	1	2	0	7	3	2	0	19
More than one race	10	9	8	3	13	1	15	7	66

Table 4: Social Needs by Ethnicity

Ethnicity	Food	Utilities	Housing	Child Care	Cost	Transportation	Education	Home Violence	Total Needs
Non-Hispanic or Non-Latino	15	4	10	4	20	9	8	2	72
Hispanic or Latino	40	33	27	14	52	17	68	24	275

Table 5: Social Needs by Age

Age	Food	Utilities	Housing	Child Care	Cost	Transportation	Education	Home Violence	Total Needs
18-24	0	0	0	0	0	0	0	0	**0**
25-34	1	3	2	4	3	1	4	0	**18**
35-44	12	10	4	6	19	4	15	5	**75**
45-54	15	7	18	5	12	13	24	6	**100**
55-64	17	13	10	2	26	6	19	10	**103**
Age ≥ 65	9	4	3	1	10	2	13	5	**47**

Table 6: Social Needs by Gender

Gender	Food	Utilities	Housing	Child Care	Cost	Transportation	Education	Home Violence	Total Needs
Male	18	13	16	3	26	9	25	9	**119**
Female	36	24	21	15	44	17	50	17	**224**