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Pathways to a Sustainable Community Health Worker Program in a Rural Native American Community

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Abstract

Introduction: American Indian/Alaska Native (AI/AN) people have some of the greatest health disparities of any other citizen group in the U.S. (National Indian Health Board [NIHB], 2018). As liaisons between community members and health services, community health workers (CHWs) play an important role in reducing disparities in AI/AN communities (Indian Health Service [IHS], 2018). CHWs in the organization of interest are not being used to their full potential as the documentation of their care is not accessible to the primary care providers (PCPs) for care coordination and the program is threatened by issues related to sustainability.

Objectives: The purpose of this project was to develop a strategic plan to increase efficiency and sustainability of a CHW program located in a rural Native American community in the Midwest U.S. The long-term goals of this project are to improve care coordination and program sustainability.

Methods: The Cultural Care Theory and Pathways HUB Model guided development of this project. The overall project is a multi-phase quality improvement project involving replication of the Pathways Community HUB model in the target organization. The proposed project will be conducted in multiple phases including strategic planning, implementation, and evaluation.

Results: This project represents the first phase of the overall project, which is was the development and delivery of a strategic plan to guide implementation of the proposed practice changes.

Implications: It is anticipated that the implementation of an evidence-based model of care coordination will increase CHW documentation completion rates and provide a standardized measurement tool to efficiently evaluate patient outcomes and CHW performance. It is also expected that there will be better communication and care coordination across multiple health and social services, thereby increasing efficiency, quality of care, and sustainability of the target organization's CHW program.

Keywords: "Community Health Worker", "Community Health Representative", "Pathways Community HUB Model", "CHW Program".

Table of Contents

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AI/AN people have some of the greatest health inequities of any other citizen group in the United States (NIHB, 2018). In an effort to improve quality of care and reduce health inequities in this population, the Indian Health Service (IHS) established the Community Health Representatives Program (Old Elk, 2018). A community health representative, hereafter referred to as a community health worker (CHW), is a trusted member of the community who has a close understanding of the cultural norms, language, and traditions within that community (IHS, 2018). CHWs are trained to provide culturally-sensitive preventative health services, health education, and follow-up care in rural and remote locations. CHWs play an important role in reducing disparities in the populations that they serve and have become essential members of the health care team (IHS, 2018). The purpose of this DNP project was to develop a strategic plan to increase efficiency and sustainability of an identified CHW program at an IHS facility located in the Midwest United States.

The Scope of the Problem

Health outcomes are directly affected by social determinants of health, or the conditions of the physical and social environment in which individuals live, work, and play (Towne et al., 2017). AI/AN people face higher rates of poverty, unemployment, violence, food insecurity and inadequate housing (Elliot et al., 2015; Hutchinson & Shin, 2014; Sequist, 2017). The direct health consequences of these socioeconomic risk factors are evident. Native Americans have higher rates of cardiovascular disease (CVD), obesity, diabetes, tobacco use, infant mortality, and physical inactivity (Elliot et al., 2015; Sequist, 2015). The AI/AN population has the highest age-adjusted prevalence of diabetes of all racial or ethnic groups in the U.S. (Cerasano, 2017; Elliot et al., 2015). AI/AN people also have higher mortality rates from diabetes, CVD, chronic liver disease, suicide, drug overdose, and chronic obstructive pulmonary disease (King et al., 2017; Mack et al., 2017; NIHB, 2018). These widespread socioeconomic and health disparities have contributed to an overall decreased life expectancy in

AI/AN people, who now have the lowest life expectancy of any racial or ethnic group in the U.S. (Jernigan et al., 2015; King et al., 2017).

Social determinants of health also impact healthcare utilization and quality of care. The Agency for Healthcare Research and Quality (Agency for Healthcare Research and Quality [AHRQ], 2017) reported that AI/AN people are more likely to experience poorer quality and access to health care (AHRQ, 2017). Structural characteristics, or place-based factors influence the availability and accessibility of health services (Towne et al., 2017). Lower rates of healthcare utilization and limited availability of specialized healthcare services within the IHS present additional challenges when managing the health of a vulnerable population with complex chronic conditions (Bassett, Tsosie, & Nannauck, 2012). Persistent federal funding deficits and a critical shortage of healthcare providers within the IHS may also be implicated as factors negatively impacting healthcare delivery in this population (Hutchinson & Shin, 2014). Personal and cultural factors may also play a role and present additional healthcare utilization barriers. Cultural differences and historical oppression of Indigenous people may contribute to distrust between AI/AN patients and mostly non-AI/AN providers within the IHS (Bassett et al., 2012). The profound disparities in health outcomes, social determinants of health, quality and access to care in the AI/AN population highlight the necessity of culturally-relevant programs, including community-based outreach via CHWs (Hutchinson & Shin, 2014). A growing body of evidence supports the integration of CHWs into the interdisciplinary primary care team to improve quality of care and reduce health inequities in vulnerable populations (London, Love, & Tikkanen, 2017; National Indian Health Board [NIHB], 2018; Pittman et al., 2015).

Project Setting and Background

The DNP project setting is a rural Native American reservation located in the Midwest region of the United States. The CHW program of interest is based out of a Family Health Clinic in an IHS facility. CHW services are considered a health benefit that is available to Tribe members residing

within the service area. The service area for the CHW program extends throughout six counties to include Tribe members that live outside of the reservation. The core CHW program team includes a CHW supervisor and four frontline public health workers who serve as liaisons between the community members and the health services available within that community (Association of State and Territorial Health Officials [ASTHO], 2017). Prior to developing the strategic plan, it was necessary to conduct a thorough assessment of the organization.

Organizational Assessment

Organizational change is a complex process that requires a thorough understanding of fundamental organizational variables, their relationships, and their impact on the culture and climate (Burke & Litwin, 1992). Use of a scientific and methodical approach to assess key variables and their relationships is an essential step to better understand the nature of the organization and identify the factors that are fundamental to successful change (Stone, 2015). Assessment and understanding of these dynamics were critical to the development of targeted recommendations that result in more predictable outcomes (Stone, 2015). The organizational mentor assisted with the assessment by directing the DNP student to the appropriate resources and facilitating meetings with key stakeholders. The DNP student interviewed stakeholders and observed the clinicians and CHWs in processes relating to the delivery of care.

The Burke-Litwin Model

The Burke-Litwin Model (BLM) was selected to guide an organizational assessment of a Native American health clinic and CHW program. The BLM provides a valid and reliable framework to guide an assessment of the environmental and organizational factors that are vital to successful change (Stone, 2015). This open-system, causal model consists of 12 variables that impact the performance of an organization and the organization's capacity for change (see figure 1 in Appendix A).

The theoretical framework of the BLM evolved from constructs of the open systems theory with the external environment being the input (Burke & Litwin, 1992; Stone, Brown, Smith, & Jacobs, 2018). Bidirectional arrows between variables convey the open-systems construct (Burke & Litwin, 1992). The top portion of the BLM represents the transformational dynamics of an organization. Transformational factors (leadership, organizational culture, mission and strategy) are closely linked with transactional factors and the external environment (Stone et al., 2018). The bottom portion of the model demonstrates transactional factors within the model: structure; management practices; systems (policies and procedures); work unit climate; tasks and individual skills; individual needs and values; and motivation (Burke & Litwin, 1992). Transformational and transactional factors are the throughput that ultimately influence motivational factors and drive organizational performance as the output variable (Stone, 2015). Each of the BLM variables are defined and described within the context of the project setting.

External Environment

The external environment variable of the BLM refers to the most influential conditions outside of an organization that have an impact on organizational performance (Burke & Litwin, 1992; Stone, 2015). There are significant external factors influencing the need for change. Economic challenges imposed by federal budget cuts may threaten the future existence of the CHW program. AI/AN communities will no longer receive federal funding for Community Health Representative programs as it was completely eliminated in the FY 2019 budget (U.S. Department of Health and Human Services [DHHS], 2018). In previous years, the IHS received 60 million dollars annually from the federal government to cover some of the costs associated with the Community Health Representative program (DHHS, 2018). Many federally-recognized AI/AN Tribes rely on this funding to cover some of their program costs. Without the development of reimbursable and sustainable models of care, many Native American CHW programs may cease to exist. The future of

the CHW program within the target organization is uncertain without finding sustainable strategies to manage cost and increase effectiveness. External environmental factors are a significant motivating factor for this project.

Mission and Strategy

The second dimension of the BLM includes the mission and strategy. The mission is the purpose of the organization and the strategy is the means by which the organization plans to accomplish the mission (Stone, 2015). The mission statement and vision of the Tribal Council has overarching themes that align with the mission of the CHW program. Restructuring the CHW program to a more sustainable model of care will resultantly increase self-sufficiency of the Tribe's CHW program, which also supports the mission and vision of the Tribal Council and community as a whole.

Leadership

The leadership dimension refers to the executives that provide overall direction of the organization and serve as role models for all employees (Burke & Litwin, 1992). Employee perceptions of executive practices and values are included in this portion of the assessment. The Tribal Council is the highest level in the chain of command in the identified organization and community. The Tribal Council has seven elected executive officers (Chairman, Vice Chair, Treasurer, Secretary, and three Councilors). The Tribal Council holds both closed sessions and open meetings, which are only open to members of the Tribe. Closed sessions are reserved for members who wish to discuss a legal or personal manner with the Tribal Council. Refer to Figure 2 in Appendix B to visualize the chain of command within the context of the organization. Organization personnel and community members convey the processes and practices of the organizational leadership. The Tribal Council is highly respected by the Family Health Clinic personnel and members of the community. This is further supported by the fact that Tribal Council officers are

Tribe members that have been elected by the community. Once, elected, Tribal Council members serve two-year terms, with the exception of the Chairperson who serves a four-year (Tribal communication, 2017).

Organizational Culture

Organizational culture encompasses the values, beliefs, and norms that drive the actions of individuals within the organization (Burke & Litwin, 1992). The organizational culture is patient-centered, holistic, and grounded in Native American culture and heritage. The mission of the Tribal Council is mirrored by the culture of the community healthcare organization. Respecting the culture and following the chain of command within the Indigenous community and health system are important aspects of the organizational culture. The primary core values that apply to each member of the interdisciplinary health care team include appreciating the Native American cultural traditions and respecting Tribe members, especially Elders. The Family Health Clinic follows an interdisciplinary care model and incorporates care from several disciplines including: two physicians, one nurse practitioner, a traditional healer, four CHWs, a behavioral health counselor and a psychiatrist. The use of a healer is a particularly important facet of healthcare delivery in Native populations as traditional healing practices sustain a sense of cultural identity, community connectedness, and health promotion foundations that embrace bio-psycho-socio-spiritual approaches and traditions (George et al., 2018; Koithan & Farrell, 2010).

Structure

Structure is how an organization is designed to achieve its mission (Stone, 2015). The structure of an organization encompasses the various levels of the chain of command, the relationship dynamics, decision-making authority, and levels of responsibility (Burke & Litwin, 1992). Refer to Appendix C to visualize the structure and hierarchy of the Indian Health Services program (Figure 3). At the federal level, the IHS, an agency within the DHHS, oversees allocation of federal funds and

performs periodic assessments or audits to ensure that certain quality measures are met (IHS, 2017). This is why the CHW program changes must align with the policies and quality measures outlined by the IHS. Failing to address these quality measures could jeopardize receipt of federal funding for the Tribe's entire health care system (IHS, 2017). Just below the IHS is the regional office which provides service and support to 38 federally-recognized Indian health programs located throughout the Midwest (IHS, 2017). At the state level there is the Inter-Tribal Council, which is a consortium of federally-recognized Tribes located within the State. At the local and organizational level, there are individual Tribal governance bodies and policies. Any change in policy, practices or allocation of resources first requires approval from the Tribal Council, Tribal manager, and Family Health Clinic administrator.

Management Practices

Management practices refer to the behavior exhibited by managers in the normal course of daily events and how they use human and material resources to carry out the organization's strategy (Burke & Litwin, 1992). The Family Health Clinic administrator employs a democratic-type of leadership and appears well respected among her colleagues. Her calm and professional demeanor exudes confidence and wisdom.

The DNP student's organizational mentor is a board-certified DNP in the Family Health Clinic as well as the CHW supervisor. The Family Health Clinic DNP recently assumed the role of CHW supervisor and employed the help of the DNP student. Formerly, there was limited CHW supervision or program oversight. CHW accountability practices have not been enforced. The former laissez faire-style leadership likely influenced current CHW care delivery practices, productivity, and accountability. The CHW supervisor appears well respected among colleagues and the CHWs. A certain level of respect and authority is critical to the success of this project as there are many

proposed practice changes that may be met by resistance following years of limited program oversight.

Systems

Systems are the standardized policies and procedures that facilitate work. This variable includes control systems such as human resource allocation, budget development, and performance appraisal (Burke & Litwin, 1992). At the top of the chain of command and governing body of the organization is the Tribal Council. The Tribal Council functions as a quasi-judicial body and conducts administrative adjudicatory hearings twice per month. The Tribal Chairman or his designee is authorized to negotiate and execute the contract and any amendments to the health services budget (National Indian Law Library [NILL], 2012). The CHW program is currently funded within the health services budget.

CHWs must follow and respect organizational policies as well as policies directing the protection of private patient information. Failure to follow these policies may result in termination of employment, or even disbandment as a member of the Tribe (NILL, 2012). There are existing IHS policies and manuals intended for use by AI/AN CHW programs, but these policies are not currently practiced or enforced within the target organization. CHWs did not have direct supervision and were individually responsible for scheduling patient visits, which is was done using Google Calendar. CHWs are expected to document home visits and completion of tasks in the electronic health record (EHR), Resource and Patient Management System (RPMS). Each CHW has an organization laptop with access to RPMS and Wi-Fi via a mobile hotspot. CHWs do not consistently document home visits, transports, or other metrics such as health education, time spent with a patient, tasks performed, or issues encountered in RPMS. CHWs cited barriers such as a lack of knowledge and limited training on documentation requirements (CHW #2 & CHW #3, personal communication, July

24, 2018). The lack of CHW charting impairs care coordination and limits the ability to provide tangible documentation of CHW work output.

Work Unit Climate

The work group climate is the collective impressions, expectations, and feelings expressed by individual members of a work group and how they affect their relationships with each other (Burke & Litwin, 1992). The CHW supervisor appears well respected by the CHWs and there is a mutual understanding and concern regarding documentation and training. The atmosphere surrounding the completion of certain tasks seemed to differ among CHWs. During a staff meeting, the CHW supervisor expressed concern over the completion of tasks for which CHWs are not legally qualified and asked that CHWs avoid performing said tasks (e.g. complex dressing changes and weekly pill minder set up). There was frustration and concern expressed by a CHW, who noted that she fears that patients may not receive necessary care if she does not perform certain tasks. The CHW supervisor addressed this concern by validating her feelings of frustration, emphasizing the importance of keeping an open line of communication with the patient's primary care provider and that the identified scenario may be resolved via a home health and wound care consult. Referral to a home health care agency in that situation eliminated the need for the CHW to perform a task which they are not legally qualified to perform. At the end of the meeting, it was mutually agreed upon that it was in the best interest of the patient and the CHW to avoid practicing outside of the scope of the CHW role. Mutual goals of CHW program continuation, patient safety and delivery of quality care will help direct program changes associated with this project.

Task Requirements and Individual Skills

Task requirements and individual skills are the specific skills and abilities that are necessary to complete the job and how well these skills match the job requirements (Burke, & Litwin, 1992). The CHW supervisor is a board-certified DNP. This provider is new to the role as a CHW supervisor,

but his educational background, amicable personality, respect among colleagues, and leadership skills make him well suited for this role. None of the four CHWs are certified, nor have they completed a CHW certificate program. One CHW is also a certified nursing assistant. The initial training for CHWs within the organization is minimal and includes CPR certification and basic first-aid training. Currently, the CHW role is not formally defined or documented in organization policies. There are general expectations such as working hours and some tasks; however, there are no formal organizational policies regarding documentation, visits, case load, services, and tasks to be accomplished at a visit. Currently, CHWs at the organization do not meet IHS or State guidelines to be qualified as a CHW (IHS, 2018; XXX State Community Health Workers Alliance [MiCHWA], 2018a; MiCHWA, 2018b).

Individual Needs and Values

The tenth variable within the BLM, individual needs and values, refers to the psychological factors that guide daily behavior and actions of employees within the organization (Burke & Litwin, 1992). The CHWs deeply value their work and recognize that their work helps vulnerable patients within the community. A common theme among interviewed CHWs was the drive to help those in need within their community, especially the Elders. Elders are highly respected and valued in Native American culture and serve as cultural teachers to pass along traditional knowledge (Ross, 2016). Strong cultural values and beliefs are present among the CHWs employed at the organization.

Motivation

Motivation is the willingness or the drive to move toward and accomplish goals (Burke & Litwin, 1992). In this aspect of the BLM, the significance of individual and organizational goals is considered. Currently, leadership at the target organization does not enforce adherence to CHW policies or protocols suggested by the IHS. The primary motivator at the current time is the understanding among CHWs that their current position may be threatened by sustainability issues and

that change must occur. All four CHWs acknowledged that the changes associated with restructuring the CHW program are important and that current practice is not sustainable without a secure funding stream.

Individual and Organizational Performance

The final dimension of the BLM involves individual and organizational performance. The four CHWs are not regularly evaluated with an official performance evaluation. They intermittently check in with the CHW supervisor and the Elder Coordinator in their service area, but only to receive patient updates and review information regarding potential new clients. The Tribe's Family Health Clinic is formally evaluated by the IHS during unplanned audits throughout the year. Government Performance Results Act (GPRA) metrics and quality measures are reviewed during this site visit. The IHS evaluates more than 20 quality measures outlined in the GPRA and GPRA Modernization Act. Meeting these benchmarks and quality measures are critical to the organization's annual federal budget request (IHS, 2017).

SWOT Analysis

Following completion of the organizational assessment, a SWOT analysis was conducted. The summarized results from the SWOT analysis can be found in Appendix D. Construction of a SWOT analysis was valuable to the change process as it allowed the DNP student to view the organizational strengths, weaknesses, opportunities, and major threats to the project from the stakeholders' point of view (Shahmoradi, Darrudi, Arji, & Ahmadreza, 2017). Having this knowledge was useful to identify potential roadblocks, minimize weaknesses and to maximize strengths within the organization (Shahmoradi et al., 2017).

Strengths

The CHW program supports the mission of the Tribal Council, empowers community members, and facilitates comprehensive and culturally competent care. As members of the Tribe, all

four CHWs have strong personal and cultural ties to the community that they serve. Key stakeholders identified a problem in the sustainability of the current CHW program and expressed interest and support in creating a solution. The Tribal Council offered support and granted the DNP student permission to proceed with the strategic planning phase of the project.

Weaknesses

One of the greatest weaknesses revealed in the SWOT assessment was the lack of CHW documentation and consequential inability to complete a thorough CHW program assessment involving standardized metrics. The documentation deficit was challenging to overcome in the early phases of the project as the data would be beneficial to share with stakeholders and to gain financial buy-in for this project. CHWs also have limitations in function and role based on their current level of training and qualifications. The most common CHW service utilized by patients is transportation assistance. While transportation assistance is an important and essential service for the community, it does not require CHW-specific qualifications and may be completed by someone other than a CHW.

Opportunities

One of the greatest opportunities for the CHW program may be the existence of care coordination programs at the Regional and Community Health Departments. There is an opportunity to utilize this infrastructure and combine resources with the Health Department. The Regional Health Department was one of the four organizations in the State selected as a Community Health Innovation Region, or CHIRs. In 2015, the Centers for Medicare and Medicaid Services (CMS) awarded the state a sum of $70 million over four years to CHIRs to trial and implement an innovative healthcare delivery model. This award was made through the CMS State Innovation Model (SIM) initiative (XXX State Department of Health and Human Services, 2018). The Regional Health Department has the infrastructure and funding stream to support three community organizations that employ CHWs and serve high-risk clients living in any of the ten counties located within the Midwestregion

(Sundmacher, 2018). There is an opportunity for the target organization to collaborate, learn from, strengthen these community connections, and potentially combine resources with the CHIR and Regional Health Department.

Threats

Inadequate funding and current lack of program income are the greatest threats to project viability. Lack of patient documentation (e.g., visit notes, delivery of care) of CHW work output was also a significant threat to the project. This was problematic as the DNP student was unable to present stakeholders with current program data and the impact on individual and community health outcomes and per capita health expenses. The DNP student was able to overcome this barrier by compiling aggregate health and demographic data from several key resources including the regional community health assessment, Inter-Tribal Health Data Report, Tribal census data, and personal interviews with staff and community members. CHW motivation and resistance to changes in current practice were also barriers. The CHW supervisor continues to work closely with CHWs and has accommodated by presenting change gradually.

Key Stakeholders

Key stakeholders are the individuals or groups within the organization who touch the project in some way and have vested interests in the outcome of the project (Moran, Burson, & Conrad, 2017). Key stakeholders involved with this project include: the DNP student's advisory team, Regional Health Department personnel, Tribal Council members, the Tribal manager, the Family Health Clinic administrator, Family Health Clinic providers, CHW supervisor, four CHWs, and Tribe members that utilize CHW services. The four CHWs are particularly important stakeholders in this project because of the impact this project could have on their job duties, job structure, and required day-to-day tasks. The Family Health Clinic DNP is a key stakeholder because he is the supervisor for the four CHWs. Additionally, he is the DNP student's organizational mentor and a valued member of

the student's advisory team. The DNP student's four-person advisory team has a vested interest in the project and was instrumental throughout the entire process of project development and delivery of the final output. The Tribal manager and Tribal Council members were the gatekeepers and ultimately gave the DNP student permission to complete this project.

Conclusion of Organizational Assessment

The organizational assessment identified strong need for change and stakeholder support in the need for change. Key stakeholders identified a problem with the financial sustainability of the CHW program. Several problems were identified as barriers to CHW work performance and program sustainability including: limited CHW-specific training; inconsistent or lack of CHW documentation; absence of a formal screening process for potential new clients; a lack of regular performance evaluations of CHWs; and a lack of organization-specific data or metrics to evaluate CHW program impact on clinical and cost effectiveness. Following completion of the organizational assessment, review of literature was conducted to examine the evidence surrounding CHW-delivered care and to explore evidence-based solutions for maintaining CHW services in a vulnerable population.

Literature Review

In order to achieve optimal outcomes with a CHW program, it is necessary to understand and incorporate the key features that produce positive outcomes (Kim et al., 2016). The goal of the literature review was to synthesize evidence concerning the types of CHW interventions, CHW training and qualifications, patient outcomes, and cost-effectiveness of such interventions in vulnerable populations. This literature review was divided into two main parts. The first part of the literature review involved evaluation of randomized controlled trials (RCTs) and systematic reviews assessing the impact of CHW interventions on health and financial outcomes. This also included a review of financial data associated with CHW programs such as program cost and estimated return on investment. The last portion of the literature review included an analysis of various features of CHW

programs including: models of care; training and qualifications; documentation requirements; supervision of CHWs; performance evaluation; and various role of CHWs.

Method

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guideline served as the framework for this literature review (Moher, Liberati, Tetzlaff, Altman, & PRISMA Group, 2009). A comprehensive electronic search was conducted in the GVSU Library Online Catalog and the ProQuest, CINAHL, and PubMed databases (see figure 4 in Appendix E for PRISMA flow diagram). The initial search was limited to peer-reviewed articles published between 2013 to 2018. The literature search was then expanded using an ancestry approach to find earlier relevant studies. The search strategy included subject headings and keywords related to the cost, benefit, sustainability, and care models of community health worker programs in the U.S. Keywords included in the search were: “vulnerable population”, “community health representative”, “community health worker”, and “chronic condition”.

Summary of Findings

Nine papers met the inclusion criteria and are included in this review. Two systematic reviews, one pre-post implementation study, and six RCTs were reviewed to assess the impact of CHWs on health outcomes. The review was primarily focused on the following outcome categories: clinical health outcomes, healthcare utilization, cost-savings, patient knowledge, behavior, and satisfaction or quality of care. The systematic reviews included in this paper are considered to be high quality evidence (Level I) in the evidence hierarchy, followed by individual RCTs and pre-post design studies (Level II) (Polit & Beck, 2016).

CHW-delivered interventions appear to be effective in improving patient risk factor status and clinical outcome measures for health conditions in high-risk populations. Five of the individual RCTs included in this review evaluated the impact of various CHW-delivered interventions on outcomes in

high-risk patients with complex chronic conditions (diabetes, hypertension, obesity, CVD). Three of the reviewed RCTs included study populations from ethnic minorities and included bilingual CHWs who either lived in the community that they served or at least had a close understanding and respect for the culture (Carrasquillo, Patberg, Alonzo, Li, & Kenya, 2014; Islam et al., 2014; Rothschild et al., 2014). The individual studies and accompanying CHW interventions are summarized in Table 2F (see Appendix F).

Clinical health outcomes. Five of the reviewed RCTs reported statistically significant improvements in intervention group participants' hemoglobin A1c (HbA1c) from baseline (Allen et al., 2011; Carrasquillo et al., 2017; Islam et al., 2018; Kangovi et al., 2017; Rothschild et al., 2014). When compared to usual care, patients receiving individually or culturally-tailored CHW interventions experienced greater reductions in cholesterol and blood pressure (Allen et al., 2011; Islam et al., 2018; Kangovi et al., 2017; Kim et al., 2016). CHW interventions have been shown to provide better patient support for disease self-management than standard outpatient care alone (Allen et al., 2011; Kangovi et al., 2014; Kangovi et al., 2017). Sixteen studies included in the review by Kim et al. (2016) found a significant effect of CHW intervention on CVD risk reduction. Five studies demonstrated greater improvements in lipid profile, blood pressure, and HbA1C for the CHW intervention group versus the comparison group (Kim et al., 2016). Verhagen and colleagues (2014) categorized the seven study outcomes into three categories: access to care, health behavior, and health status. Comparisons were made between studies and positive effects were found in each of the three categories, suggesting that CHWs may help to improve access to health care, health-related behavior, and health outcomes among ethnic minority older adults (Verhagen, Steunenberg, De Wit, & Ros, 2014).

Cost-savings. Allen and colleagues (2014) estimated a cost-savings of about $190 per every 1% reduction in systolic blood pressure and diastolic blood pressure, $149 for every 1% reduction in

HbA1C, and $40 for every 1% reduction in LDL. Kim et al. (2016) noted that all eight of the studies in the systematic review that included cost analyses found that CHW integration into the healthcare delivery system was associated with cost-effective and sustainable care. CHWs may also play an important role in reducing the number of preventable hospitalizations in high-risk patient populations, which may also contribute to significant cost-savings. Kangovi et al. (2014) concluded that CHW-delivered interventions (patient education, goal setting & goal support, healthcare navigation assistance, and referral to social services) may help reduce 30-day readmission rates and improve timeliness of post-hospital primary care follow-up. Using a similar intervention protocol modified for use in the outpatient setting, Kangovi et al. (2017) conducted a later study and demonstrated an overall reduction in the number of hospitalizations in the intervention group compared to the control group. The promising results from the reviewed studies suggest that CHWs may play an important role in reducing the number of preventable hospitalizations in vulnerable populations.

CHW program structure, supervision, and training. Similar qualities were noted among the CHW programs featured in the RCTs (see Appendix G for Table 3 outlining characteristics of articles reviewed). Each CHW program either followed or based their protocol on manuals and toolkits published by reputable organizations such as the Centers for Disease Control and Prevention (CDC), AHRQ, National Institute of Health (NIH), and National Heart Lung & Blood Institute (NHLBI). All of the reviewed studies reported that the CHWs in the intervention groups received job-specific training and were required to complete core competency requirements. The CHWs in all programs were also required to complete documentation that was periodically reviewed by their supervisors. The CHWs in the studies also received regular performance evaluations and feedback from their supervisors (Allen et al., 2011; Carasquillo et al., 2017; Islam et al., 2018; Kangovi et al., 2014; Kangovi et al., 2017; Rothschild et al., 2014; Redding et al., 2014).). Case managers (social worker or registered nurse) and advanced practice registered nurses (APRNs) were most commonly

assigned the role of CHW supervisor (Allen et al., 2011; Carasquillo et al., 2017; Kangovi et al., 2014; Kangovi et al., 2017; Rothschild et al., 2014; Redding et al., 2014). The majority of CHW programs reviewed in the studies included: mandatory training, core competency requirements, supervision by a case manager or APRN, regular performance evaluations, and mandatory documentation that is reviewed by a supervisor (see Appendix H for Table H4 summarizing the key components of reviewed CHW programs).

Limitations of the Literature Review

There were several limitations of this review. One limitation was the lack of AI/AN population-specific scholarly articles related to CHW interventions and outcomes. This limitation was addressed by reviewing studies featuring vulnerable populations diagnosed with or at risk for health conditions that disproportionately affect AI/AN people (i.e. diabetes, obesity, tobacco use, and low birth weight infants) (Cerasano, 2017; Elliot et al., 2015). The geographic locations and individual study settings may also be considered another limitation. All of the reviewed studies were conducted in urban settings. While a number of rural-based CHW programs exist, there is limited availability or access to quantitative data or studies involving outcomes from these programs. For AI/AN populations that live on reservations and remote locations, the resources that the reviewed CHW programs have access to are likely to be substantially different.

Literature Review Conclusion

There were several salient findings from the literature review. CHWs help underserved and high-need patients access the right care at the right time by reducing barriers to care (Carasquillo et al., 2017; Islam et al., 2018; Kangovi et al., 2017; Kim et al., 2016). There is substantial evidence supporting the use of CHWs in vulnerable populations with multiple chronic conditions (Allen et al., 2011; Carasquillo et al., 2017; Islam et al., 2018; Kangovi et al., 2017; Kim et al., 2016). CHWs facilitate access to health services, improve quality of care, and increase communication between

patients and their providers, all of which are critical in reducing disparities in AI/AN people (Hutchinson & Shin, 2014). The results of this review suggest that the current evidence supports the CHW role and suggests that integration of CHWs into the interdisciplinary care team may be an effective strategy to improve quality of care, reduce healthcare costs, and contribute to better health outcomes in high-risk populations with multiple chronic conditions.

Common themes were noted among the CHW programs in the review. These fundamental program components include: mandatory training, core competency requirements, supervision by a case manager or APRN, regular performance evaluations, and mandatory documentation that is reviewed by a supervisor (Allen et al., 2011; Carasquillo et al., 2017; Islam et al., 2018; Kangovi et al., 2017; Redding et al., 2014). These commonalities among the reviewed studies suggest that implementation of an evidence-based and structured CHW model of care may contribute to positive clinical outcomes, higher quality of care, and improve cost-effectiveness. The findings of the review were used to guide the selection of a CHW program model that is evidence-based, cost-effective, efficient and meets the unique needs of the target organization and population.

Evidence Supporting the Project

The Pathways HUB Model of Community Care Coordination was selected as a resource and care delivery model to guide this DNP project. The Pathways HUB model was ultimately selected because of the solid foundation of supporting evidence; clear guidelines for program replication in a variety of settings; availability of free resources to guide planning, implementation and evaluation; clearly defined CHW roles that fall within scope of practice; availability of a Pathways-based CHW training program near the target organization; and the close geographic proximity of several organizations utilizing the Pathways HUB model.

The Pathways Community HUB Model, as designed by Dr. Mark Redding, MD and Dr. Sarah Redding, MD, is a community care coordination approach focused on reducing modifiable risk

factors for high-risk individuals and populations (AHRQ, Pathways Community HUB Institute, & Community Care Coordination Learning Network, 2016). This innovative healthcare delivery model was designed for comprehensive identification and risk reduction using a culturally connected pay-for-performance approach (Pathways Community HUB Institute [PCHI], 2018b). In the HUB model, CHWs complete an initial comprehensive assessment of risk factors (health, social, and behavioral) for a client that was identified using a standardized screening tool. A care coordination team comprised of social workers, CHWs, and medical personnel then develop a risk reduction plan of care for each risk factor. Each identified risk factor is assigned a specific Pathway which is then tracked and monitored by the HUB until completion. Tracking and monitoring of specified Pathways help ensure accountability, quality of care, and provides a standardized metric to assess individual and organization performance (AHRQ et al., 2016; Alley, Asomugha, Conway, & and Sanghavi, 2016).

The Pathways HUB model has been recognized by the AHRQ, as well as several prominent organizations in the State (Zeigler, Redding, Leath, & Carter, 2014). Publications by Alley et al. (2016) and Redding et al. (2014) have provided moderate strength evidence supporting improved patient outcomes and reduced healthcare costs following implementation of the HUB model (as cited in PCHI, 2018). The Community Health Access Project (CHAP) by Redding et al. (2014) evaluated the adjusted odds of low birth weight infants (LBW) between CHAP recipients and non-CHAP recipients. The Pathways HUB model was used as a guide for this project. Redding and colleagues (2014) concluded that the women in the CHAP group had significantly lower odds of LBW delivery compared to non-CHAP women. Redding et al. (2014) estimated that the long-term savings of a CHW-delivered intervention for high-risk pregnant women resulted in a savings of about $5.59 per each dollar invested. Several more promising studies involving the Pathways HUB model are currently in the process of manuscript preparation and publication.

Phenomenon Conceptual Model

The selection of a conceptual and theoretical framework was useful to provide a broad understanding of the phenomenon of interest (Polit & Beck, 2016). The phenomena of interest in this project are the CHW program structure and care delivery processes related to community-based, CHW-delivered care in in a rural Indigenous community. The conceptual model that was used to better understand the phenomena of interest was Margaret Leininger's Cultural Care Theory (CCT). The Sunrise Model depicts theoretical constructs of the CCT and factors influencing care (see Appendix I for figure 5 depicting the Sunrise Model). Leininger postulates that culture and care together are influential theoretical constructs that are essential to an individual's health and wellbeing (Leininger, 2008). Not all pieces of the CCT are discussed below due to the scale and complexity of the theory. Interpretation and application of two key action modalities in the CCT are described below within the context of the project.

Leininger's CCT is comprised of three action modalities or decision modes, which are deemed essential for providing culturally congruent care (Leininger, 1988; Leininger, 2008). The action modality of cultural care preservation is one of the overarching goals of both the CCT and this DNP project. One goal includes provision and maintenance of culturally congruent care. As Tribal members and residents of the community that they serve, the CHWs at the target organization are culturally competent and valued members of the Tribe's interdisciplinary care team. The second action modality of the CCT includes the accommodating provider care actions that facilitate culturally congruent, safe, and effective care (Leininger, 2008). The DNP student took the time to build a relationship of trust and show respect by learning about the cultural traditions, which included attendance at cultural events such as powwows, an Indigenous youth camp, Elder's lunch, and a ceremony to learn about the sacred spiritual connection to bonfires and tobacco. The DNP student also demonstrated respect of cultural practices by adhering to the chain of command and waiting for Tribal Council approval before initiating particular steps in the project. Waiting for project approval

between Tribal Council sessions extended the project timeline, however, respecting and following this cultural practice was critical to the success of this project and maintained a relationship of trust with the target organization.

Project Purpose and Design

Purpose of Project

The purpose of this project was to develop a strategic plan to increase efficiency and sustainability of an identified CHW program located in the Midwest United States. This was accomplished by answering the following clinical question and sub questions: What evidence-based model of care coordination can be replicated in a rural Native American CHW program to increase CHW accountability and program sustainability?

- What steps must the organization take to replicate features of the Pathways Community HUB model in the target organization?
- How can the Tribal CHW program build on existing community coalition efforts and partner with the Regional Health Department to develop community care coordination Pathways?

Objectives

The main objective of this project was to develop a strategic plan to improve efficiency, care coordination and sustainability of the identified Native American CHW program. The final output of this DNP project was a detailed strategic quality improvement plan tailored to the target organization, which stakeholders may use to guide the next phase of the project: replication and implementation of the proposed CHW care coordination model. The next piece included delivery of an electronic output and outcome tracking toolkit to assist with the implementation, evaluation, and quality improvement processes. Development and delivery of the final pieces of this project required accomplishment of a number of additional objectives and sub-objectives which will be described in detail in the project plan section.

Type of Project

The overall project is a multi-phase quality improvement project involving replication of the Pathways Community HUB model in the target organization. A quality improvement project is continuous or systematic process improvement with the fundamental goal of improving outcomes (Moran et al., 2017). This DNP project included strategies on how to implement and sustain an evidence-based model of community care coordination in an identified rural Native American community health setting. This quality improvement project will be conducted in multiple phases including strategic planning, implementation, and evaluation. This DNP project represents the first phase of the overall project, which was development of a strategic plan to guide the implementation and evaluation phases of the final project.

Setting and Participants

The DNP project setting is a rural Tribal health clinic located in the Midwest region of the United States. Since this DNP project is only the first phase of a large-scale quality improvement and program development, there will be no direct involvement of patients. The majority of clients that currently receive CHW services are older adults, or Elders within the community. Common chronic conditions that the CHWs encounter on a daily basis include obesity, diabetes, hypertension, COPD, tobacco dependence, mental health issues, and asthma in the pediatric population. CHWs also encounter a variety of social issues, particularly issues regarding transportation to and from medical appointments. The most common tasks that CHWs complete on a regular day include: transporting patients to and from health services, picking up medication refills from the pharmacy, and organizing pills in weekly pill minders.

Individuals that will be directly involved in this phase of the project include: the medicine lodge director, the CHW supervisor/clinic DNP, two clinic physicians, four CHWs, the health officer of the regional health department, and members of the clinical community linkages work group.

Tribal council members will also be involved in this project as any proposed changes to the current CHW program and budget requires approval from the Tribal Council.

Ethics and Protection of Human Subjects

An application for review and approval of this project was submitted to the Grand Valley State University's Institutional Review Board (GVSU IRB). Data collection commenced following GVSU IRB approval and after the target organization's Tribal Council granted the DNP student permission to collect project-pertinent data from within the organization. The scope and purpose of this project are limited to CHW program evaluation and proposal for an evidence-based practice improvement. Privacy was maintained throughout the course of the project to ensure Health Insurance Portability and Accountability Act (HIPAA) compliance. No identifiable patient information was collected for this project. This project was not associated with any risk to participants as this project involved development of a strategic plan and presented no physical, social, psychological, legal, or economic threats to patients.

Model Guiding the Strategic Plan

The Pathways Community HUB model was used as a guide for the development of the strategic plan (AHRQ et al., 2016). The foundation of the model includes three main steps: find (comprehensive risk assessment), treat (assign Pathways), and measure (track/measure results). While the three main steps sound quite simple, the steps required to get to the point of finding, treating, and measuring, is much more complicated. Luckily, there is a step-by-step guide to assist service providers and community organizations in creating a HUB to coordinate health and social service delivery (AHRQ et al., 2016). The Pathways Community HUB Manual is available as open source on the AHRQ website (see Appendix J for a Figure 6 depicting the model). The step-by-step guide consists of 11 steps, which are separated into three phases. Only the first eight steps, or phase one and

two, are applicable to this DNP project as these are the HUB planning and development phases. A project timeline was developed and is included in Appendix K.

The DNP student used key planning steps from the first two phases of the Pathways HUB model manual to identify nine fundamental project objectives (see list of objectives and associated metrics in Appendix L). The nine objectives were necessary to accomplish the overarching goals of this project and deliver the final output of this project: a strategic plan in the form of a manual tailored to the organization. Each objective listed in the table is accompanied by a brief description of the execution plan and metrics which were used as implementation benchmarks to measure project progress.

Phase One: Planning a HUB

The first phase involves four essential HUB planning steps. The initial step involves identification of key community stakeholders to bring together and form a planning group (AHRQ et al., 2016). The planning team then designates a lead agency and works together to identify target populations and priority needs. Sustainability and funding issues are also addressed in the planning phase (AHRQ et al., 2016).

Form a planning group. The first step in the Pathways Community HUB manual involves bringing together stakeholders who have an interest in improving the delivery of health and social services to vulnerable individuals within the community (AHRQ et al., 2016). A small planning group was formed early on in this project, but it is recommended that organizational stakeholders continue to expand this group as the project moves into the implementation phase. It is essential to include organizations already involved in community care coordination (i.e. human services, behavioral health, housing department, and transportation). Non-profit community organizations such as the health department and other private companies may also have an interest in becoming more

involved. Health Department stakeholders have been extremely supportive throughout the planning phases of this project.

Designate a lead agency. The next step involves either designation of an existing agency as the lead, or the creation of a new umbrella organization. In most cases, an existing organization with network building and data tracking experience may be designated to serve as the lead agency (AHRQ et al., 2016). The creation of a new umbrella may make sense in certain situations if such an organization does not exist or if stakeholders are unable to agree on a lead agency. The lead agency or umbrella organization will then be responsible for providing the resources and infrastructure required to more effectively serve vulnerable populations (AHRQ et al., 2016). Designating the Tribal health clinic as the lead agency, or the "HUB", may be a good option as this agency already provides the current CHW program infrastructure and resources.

Complete a community needs assessment. A community needs assessment is useful to determine priority health and social service needs (AHRQ et al., 2016). An examination of local and regional health data was required to accomplish this step. For an existing CHW program, the most critical health and social service issues can often be identified following an examination of current program data pertaining to client needs. The current documentation practices by CHWs in the target organization eliminate this suggestion as a possibility. Secondary data was extrapolated from the 2015 Regional Community Health Assessment and the 2007-2013 State Tribal Health Data Report to overcome this barrier and to help identify health and social service priorities in the region and AI population in the state.

Discuss sustainability issues and develop a plan to secure funding. The planning team must discuss sustainability issues and develop a plan to secure funding (AHRQ et al., 2016). The DNP student formulated strategies to overcome barriers identified during the organizational assessment. Barriers to practice change included cost, current underutilization of CHWs, lack of

formal CHW training, and patient-related barriers such as lack of transportation. All of the CHWs reported a desire to practice to their full potential, but cited lack of training and the excess time required to transport patients as barriers to care delivery. These barriers may be overcome by looking into financial assistance for job training from a state workforce development program, exploring options for local transportation assistance (i.e. Bus tokens, Medicaid health plan transportation assistance benefit), and collaborating with the local health department to combine CHW training courses. Combining resources and training with the health department will help to reduce overall costs of the CHW the certification program and will reduce barriers for the CHWs by providing a local training site. A sustainability plan was developed and will be described later in this paper.

Phase Two: Creating Tools and Resources for the HUB

The second phase involves completion of four additional steps intended to build infrastructure, provide support, and help meet the needs of community stakeholders. The primary goal in this phase is to eliminate duplication and increase efficiency and effectiveness of the program.

Establish benchmarks to create accountability. The fifth step involves the establishment of benchmarks or metrics for measurement of outcomes with the goal of quality improvement (AHRQ et al., 2016). The Pathways Community HUB Model comes was designed to provide a set of work products with identified actions steps to facilitate success. Each of the 20 Pathways serve as a tracking and documentation tool that is unique to each identified risk factor (AHRQ et al., 2016). The Pathways were designed to track and document every critical step necessary to address or eliminate a risk factor. The Pathway is considered complete when the final outcome is achieved (AHRQ et al., 2016).

The second part of this step also includes a determination of the initial focus outcomes and related Pathways. There was a discussion among stakeholders to determine whether the CHWs will use all 20 of the designated Pathways or start with specified number of higher needs Pathways. A

number of factors were considered before making the final decision. There was consideration of community needs, Pathways data from the health department, population demographics, and the availability of staff and resources.

Create supporting tools and documents for care coordination. The sixth step involves the identification or development of documentation tools necessary to implement the Pathways Community HUB model. It is essential to ensure that ethical and legal issues are met with consent form, release of information and notice of privacy practices documents. It was also important to identify a screening tool and process to identify potential clients and individuals in the community who would benefit from CHW program services. Several examples of tools and templates are provided within the Pathways Community HUB manual. The nationally standardized Pathways are available to download on the PCHI website. The target organization may use the Pathways without special permission as they are open source and free to organizations implementing the Pathways HUB Model (AHRQ et al., 2016; PCHI, 2018a). The standardized Pathways are the only tools in the model with a copyright protection and may not be modified in any way (PCHI, 2018a). The rest of the forms provided in the manual have the flexibility to adapt to meet the needs of the target organization and community.

Develop sustainable funding strategies. The pay-for-performance component of the model is critical to CHW program sustainability. In order to become a certified Pathways Community HUB, the PCHI requires that a minimum of 50 percent of the overall payment to the HUB is tied to outcomes (AHRQ et al., 2016). When planning a new HUB and initiating contracts with existing care coordination agencies, a kick start financial strategy is strongly encouraged (AHRQ et al., 2016). Many organizations will require kick start funding via grant resources, state funding allocations, and donations from community or private business donations. Grant department personnel within the target organization are critical to this step in the strategic plan. The DNP student communicated with

an individual from the target organization's Grants Department to develop a plan for this piece of the project. Plan details are discussed in the results section later in this paper.

The funding streams sustaining the existing Pathways Community HUBs follow a pay for outcomes approach (AHRQ et al., 2016). Evidence suggests that many HUBs eventually become self-sustainable once the infrastructure, systems, and contracts to receive payments for outcomes are in place (Redding et al., 2014; AHRQ et al., 2016). Payments may be assigned to each of the 20 nationally certified Pathways. For example, a completed Pregnancy Pathway may reach a value in the range of $800.00 to $1,600.00. Completion of a Social Service Pathway may have a value of $40.00 or less (AHRQ et al., 2016). The value of the completed Pathway is something that must be negotiated and agreed upon by the HUB and the payer.

Develop systems to track and evaluate performance. This step involves the development of systems to centrally track the progress of clients, the performance of individual CHWs, and overall organizational performance. The development of a system to track and evaluate individual and organizational performance was a critical piece of the project. Having the systems in place to evaluate overall organizational performance is necessary to support appropriate payments, secure additional funding, and promote continuous quality improvement. The project plan included development of a CHW quality improvement performance tool for the organization. There was a discussion among stakeholders to determine the most efficient system to track the number of new clients in a given time period, plus the number of Pathways opened/closed and checklists completed by CHWs in that same time frame. Associating specified CHW interventions with Relative Value Units (RVUs) or Outcome Based Units (OBUs) may also be an effective strategy to track and evaluate individual and organization performance (PCHI, 2018c). This concept is discussed in greater detail below in the *Results* section of this paper.

Train and organize HUB staff. This step represents the initiation of phase three in the Community HUB manual. The goal at the target organization is for all CHWs to eventually complete a training and certification program. Following training and certification, there should be a discussion among stakeholders to assign role responsibilities of CHWs and supporting HUB staff. This step represents the final step of the first phase of the overall project. The DNP student then handed off responsibility and proposed plans to the identified project leader within the organization.

Outcome Measures

The final output of this project was completion of a detailed strategic plan with the steps necessary to replicate an evidence-based model of CHW care coordination within the target organization. Stakeholders may use this as guide the next phase of the project: replication and implementation of the proposed practice changes. The contents of this guide will be discussed in greater detail later in this paper. Development and delivery of the final piece of this project required accomplishment of at least nine key objectives (see Appendix M). Using key planning steps from the Pathways HUB model as a guide, the DNP student identified the nine objectives, documented strategies to accomplish the objectives, and identified specific metrics associated with each objective listed in Appendix L. The metrics associated with each objective in Appendix L were used to measure project progress. The nine objectives were then used to guide and outline the step-by-step plan designed for the organization (See Figure 8 in Appendix M for figure depicting step-by-step plan)

Data Collection Procedures

After permission was granted by the Tribal Council, the DNP student collected available financial data and metrics associated with the CHW program at the target organization. Demographic data were collected from the Tribal membership department. The demographic data were available as an Excel document and was sorted according to geographic area, member sex, and age.

Data Management and Analysis

Appropriate measures were taken to ensure the security and safety of data collected from the organization. Only de-identified data was included in the analysis and write-up for this project. The organization-specific data collected for this project included financial information. This data was included in a cost-benefit analysis which is described later in this paper. This project did not include data analysis of protected health information (PHI) due to a lack of patient data secondary to limited CHW documentation practices. The student overcame this barrier through extrapolation of aggregate data from the 2015 regional Community Health Assessment and the 2007-2013 State Tribal Health Data Report. The population health data from these documents did not require security precautions as it is available in the public domain. The DNP student was responsible for analysis of the data collected.

Project Resources and Budget

The two greatest resources required to complete this project were time and money. An estimated budget was created and is depicted in Table 5 to approximate the costs associated with the strategic planning phase of this project (See Appendix N). The net operating cost of this project included an estimate of the clinic DNP's wages as this was time spent taken away from his regular duties to work on program planning. The DNP student's time, travel expenses, three-ring binders to house the manual, password-protected USB drive, printing of the manual and reference materials were in kind donations. The budget also included an estimate of the time donated by two regional HUB coordinators and a health department nurse practitioner time as this is time spent taken away from their regular duties to assist with program planning. A separate budget was created by the DNP student to include an estimate of the costs associated with CHW training and initial project implementation. This budget was kept separate as none of the CHWs have completed a training program at this time and this phase of the project does not include implementation.

Results

Introduction

The primary objective of this project was to develop and propose strategies to increase efficiency and sustainability of the identified Tribal CHW program. The primary objective of this project was met through identification of an evidence-based, replicable care coordination model and the development of strategies to overcome identified unmet needs. The Pathways HUB model of community care coordination was selected as a resource and care delivery model to guide the project. The Pathways HUB model has a solid foundation of supporting evidence and was designed for comprehensive identification and risk reduction using a culturally connected pay-for-performance approach (PCHI, 2018). Standardization of care delivery, documentation, and measurement of outcomes also allows for the development of universal billing codes to tie payment to outcomes (AHRQ et al., 2016). The 20 standardized Pathways link billing codes to Pathway completion and provide clear measures to help determine the financial impact of HUB services and whether CHW service efficiencies, cost-savings, and clinical health improvements are achieved.

The DNP student received Tribal Council approval for the development of a strategic plan for the CHW program. This approval reaffirmed stakeholder support for this project and the mutual goals of finding strategies to maintain the CHW program and increase program efficiency and sustainability. The final output of this project was delivery of a manual detailing the steps necessary to replicate key features of the Pathways HUB model within the target organization. In addition to the manual, an electronic output and outcome tracking toolkit was developed to assist with the implementation and evaluation process. Development and delivery of the final pieces of this project required accomplishment of at least nine objectives. Using key planning steps from the Pathways HUB model as a guide, the nine objectives and associated metrics were identified (see Appendix L). Each objective and the measures taken to accomplish them are described below in the context of the project.

Demonstrate Value of CHWs within the Organization

Accomplishment of this objective was challenging and not fully possible without the availability of current program metrics and without complete CHW task documentation. The DNP student initially hoped to accomplish this objective through an analysis of data collected from CHW documentation forms, and then use this data to conduct an in-depth cost-benefit analysis of the current program. It was expected that by having documentation demonstrating CHW work output and the impact on client outcomes, organizational leadership may allocate funds from other areas within the organization to perpetuate the CHW program. This plan was modified after an assessment of the organization revealed a significant deficit in CHW documentation. To overcome this barrier, special consideration was taken during the review of literature to identify any cost-savings and ROI data from the reviewed studies. A separate search for ROI data was conducted via review of gray literature in an effort to include studies and reports beyond the nine included in the formal review of literature. The DNP student ultimately accomplished the goal of demonstrating value of CHWs by creating a visual guide consisting of summarized ROI data from other CHW programs and highlighting the impact that CHWs have on the Triple Aim. This visual guide was included in the final PowerPoint presentation to the Tribal Council and in the manual distributed to the target organization.

It was not possible to calculate an accurate cost-benefit analysis for the CHW program in the organization of interest as the benefit portion could not be measured without program outcome data or any metrication of CHW work output. The cost portion of the analysis was possible to calculate using financial data acquired from the organization. The entire CHW program costs approximately $256,870.39 annually, with greatest program costs being related to personnel expenses (See Table 7 in Appendix O for total CHW program costs). The entire CHW program is costly to the organization as a whole, particularly when considering the lack of documented work output or program-related client outcomes. Despite the lack of supporting documentation and outcome data, the CHW program

is valued by vulnerable community members and other key stakeholders. After considering the total number of Tribe members (4,177 members), the annual costs of the CHW program come to about $61.50 per member per year. It was also noted that the full value of the CHW program to the Tribe and community cannot be measured using only numbers or finances. This program has important cultural connections and is a service primarily used by the Tribe's Elders, who are highly regarded and valued in Native American culture (Ross, 2016; Tribal communication, 2018).

Since it was not possible to formally calculate the benefit portion of the analysis, other factors were considered such as potential cost savings from avoidable hospital admissions. This was done by identifying the average costs associated with hospital admissions for common diagnosis related group (DRG) codes (see Table 8 in Appendix P fora brief list of costs associated with common DRGs). There is only one large Medicare-participating hospital near the target organization and the average costs per admission to this hospital were available on the CMS website. The admission costs associated with each DRG code were extracted from an Excel document containing a DRG summary for Medicare inpatient prospective payment from FY2016 (CMS, 2016). The DNP student developed a large table outlining the costs associated with hospital admissions from 41 different DRGs. The larger table was included in the project manual and a condensed version of this table is included Appendix P.

It was also noted that the Tribe receives "Medicare-like" rates for health services at this Medicare-participating hospital. A policy outlined within section 506 of the Medicare Prescription Drug, Improvement, and Modernization Act (2003) provides the authorization for Purchase Referred Care (PRC) and urban AI health programs to pay no more than "Medicare-like" rates for services rendered by Medicare-participating hospitals. The hospital service fees are repriced to a substantially lower cost (i.e. "Medicare-like rate") for Tribe members, compared to the full costs charged to a commercial health payer of a non-Native individual.

The Tribe of interest has a PRC program which is not associated with any commercial insurance company. The Medicare-like rates allow the Tribe of interest to provide independent health coverage for Tribe members using funds from the PRC program. The funds from the PRC cover the costs of a Tribe member's health-related expenses such as Medicare premiums, prescriptions, diagnostic tests, dental procedures, office visits, procedures, and hospital admissions. When a non-Medicare beneficiary Tribe member is admitted to the hospital, the bill is paid in full by the PRC. The PRC fund pays 100% of the Medicare-like cost when Tribe members do not have coverage via a commercial health payer. For members with Medicare coverage, the Tribe pays 20% of the bill and Medicare Part B covers the other 80%. Reducing the number of preventable hospital admissions for Tribe members would generate substantial cost savings, particularly for members who lack Medicare and commercial health coverage. The total potential cost savings to the Tribe depends on the DRG and presence of additional non-PRC health coverage.

The projected costs to the organization were calculated by subtracting the average Medicare reimbursement amount from the average amount the hospital charged for the particular DRG. For Tribe members with health benefits, the primary insurance is billed first (i.e. Medicare), then the remaining expenses are billed to and paid for by the Tribe from the Purchase Referred Care. The Tribe is ultimately billed the full amount when a member does not have Medicare or other commercial insurance benefits. As shown in Table 8, the results from this search suggest that there are significant health care costs to the organization per DRG, regardless of whether or not the Tribe member is a Medicare beneficiary (CMS, 2016). Prevention of unnecessary ER visits and hospitalizations may provide substantial cost-savings to the organization and the community as a whole. The potential cost-savings from prevention of just 15 unnecessary hospitalizations may account for the costs associated with the entire CHW program. Directing delivery of CHW services to higher-risk individuals in the community, such as high ER utilizers or those with a recent hospital

readmission, may be a strategy for the target organization to adopt in order to reduce per capita healthcare costs and justify some of the expenditures related to the CHW program (ASTHO, 2017; MiCHWA, n.d.).

Ideally, there should be an analysis of Family Health Clinic patient data to identify baseline ER and hospital admission rates prior to the initiation of the Pathways HUB model in the organization. This data analysis would have been useful to include in the strategic planning manual; however, this information was unavailable to the DNP student at the time of the project. It was recommended that key stakeholders at the organization consider the analysis of patient ER and hospital admissions data and include this data in the community needs assessment.

Community Needs Assessment

A basic community needs assessment was done to identify priority health and social service needs and the target areas for intervention. The DNP student used information gathered during the organizational assessment, paired with secondary data from the CHW program at the health department, 2016 Community Health Assessment, and the 2007-2013 Tribal Health Data Report, and program data. Demographic information was obtained from the Tribal membership department to identify target areas for CHW program outreach.

The 2016 Community Health Assessment included data from five rural counties in the surrounding area. The community survey results highlighted following as the top community health problems: substance use, lack of affordable housing, overweight and obesity, mental health issues, and access to health care (Regional Hospital, 2016). The healthcare provider survey ranked the following as top community health problems: overweight and obesity, substance use, mental health issues, lack of access to health care, and tobacco use (Regional Hospital, 2016). Four of the counties included in the Community Health Assessment report are the main service areas assigned to CHWs at the target organization. The data from this report may be used as a tool to inform decisions on CHW

program priorities.

One limitation in using the Community Health Assessment data is the absence of AI population data. This is why data from the Tribal Health Data report was reviewed and considered in the community needs assessment for the organization. AI/AN population health data is often difficult to obtain due to small populations, racial misclassification, funding limitations, cultural sensitivity (history of mistrust and low participation rates in standardized surveys), and issues with data ownership and protection (Inter-Tribal Council [ITC], 2014). Tobacco use, obesity, physical inactivity, cancer, and chronic disease were among some of the highest priority health concerns cited in the report (ITC, 2014). The ITC (2014) report noted smoking rates greater than 43%, and as high as 72% in one community, compared to the State rate of 23.3% and national rate of 18.1%. There were also significant disparities in obesity rates, with 41.9% of respondents classified as obese and 31% overweight; compared to obesity rates of 28.7 % in the general population in the State (ITC, 2014). There were also significantly higher rates of chronic disease in the AI population compared to the general state population, and 36% of respondents had diabetes and heart disease; 28% of respondents had high blood pressure and high cholesterol; and 12% of adults with obesity were also diabetic and had heart disease (ITC, 2014).

CHW program-specific data from the health department was also considered. Regional health department leadership identified the top five Pathways in their program as: access to care, health education, utility assistance, housing, food assistance (Sundmacher, 2018). Additional health department HUB data of note was that 51.4% of all ER visits by patients enrolled in Medicaid in the local CHIR were preventable or avoidable. Lack of access to care and lack of transportation were identified as the top reasons for inappropriate use of the ER (Sundmacher, 2018). Key stakeholders within the target organization noted that similar health and social services needs are present in the target community. It was important to review data from the health department because this

organization oversees one of the only Pathways- based CHW programs located in a rural region. There may be other rural-based care coordination agencies in existence; however, an exhaustive search for available literature and data on such programs yielded no results. The specific methods and strategies used in this search are described in the literature review section earlier in this paper.

Based on the information from the needs assessment, the DNP student recommended that stakeholders use all 20 of the available Pathways, but prioritize several key Pathways. The smoking cessation, social service referral, and medical Pathways (medication assessment/management, medical referral, medical home) should be a top priority at the target organization. A review of demographic data from the Tribe Membership Department was also completed to identify target areas for CHW program outreach.

There are 4,177 total members in the Tribe of interest. Approximately 55% of Tribe members live outside of the service area, meaning that only 45% or 1,894 members live inside the six-county service area. About 75% of the members inside the service area live in two of the six counties, represented in the table as County D and County E. The Family Health Clinic is located in County E, while County D is in very close proximity to the clinic. There is a much smaller population of Tribe members in County A (4.44%), County B (7.71%), County C (10.14%), and County F (1.48%). This percentage is even lower when considering Tribe members age 55 and older. Individuals age 55 and older represent less than 5% of the 1,894 Tribe members residing in counties A, B, C, and F. It is recommended that stakeholders at the target organization restructure the CHW program to focus less on service areas with only a small percentage of the population and direct CHW care delivery to areas with a higher population density. These areas also have the highest percentage of older adults. This helps to ensure that CHW program resources and funding are used efficiently and reach the greatest number of at-risk individuals.

Define CHW Role and Scope of Practice

Early in this project, several critical issues relating to CHW roles and scope of practice were highlighted. There was a discussion among team members and CHWs were advised by their supervisor to avoid performing certain tasks that fall outside of their scope of practice because it may create serious client safety and legal risk. Following a review of organizational policies, it was determined that the existing policies for the CHW program may not be entirely appropriate due to limitations in training and scope of practice. There were also CHW tasks listed such as light housework, which may not be an ideal use of resources. Tasks such as transportation and light housework may be performed by an individual without CHW training or qualifications. The DNP student compiled evidence pertaining to CHW roles and included a document within the manual which clearly defines the CHW role and lists tasks that fall within the CHW scope of practice (see Table 11 in Appendix R).

There is not a legally defined CHW scope of practice in the State, nor are CHWs are recognized as licensed healthcare providers in State public health statutes. The legal scopes of other unlicensed health professionals such as home health aides and certified nursing assistants (CNAs) may be the most similar to CHWs in terms of legality and limitations in roles. However, it is important to note the clear distinctions between the CHW role and that of other unlicensed health professionals as the basis of the CHW profession does not revolve around delivery of direct clinical care (e.g. bathing, toileting, wound care). The foundation of the CHW role is built upon a relationship of trust that comes from having a personal understanding of the community served and cultural competence (American Public Health Association [APHA], 2018). A strong relationship of trust enables the CHW to serve as a liaison between the client and health and social services in the community to facilitate access to care and improve the quality and cultural competence of care delivery (APHA, 2018). This role clearly differs from that of a CNA or home health aide who assists a patient with personal hygiene, feeding, or other activities of daily living. The clear distinctions

between the CHW profession and other unlicensed professionals prompted the DNP student to reach out to a state professional organization, the State Community Health Worker Alliance (CHWA). Since there is not a CHW scope of practice defined by the State, the DNP student was directed to the Community Health Worker Common Core (C3) Project for evidence-based recommendations on the CHW scope of practice (Personal Communication, January 20, 2019).

Currently, CHWs are able to obtain certificates through MiCHWA. The CHW programs throughout the State that currently receive reimbursement for CHW services have CHWs with certifications through MiCHWA. MiCHWA (2018a) began recognizing CHWs eligible for certification in October 2017. The MiCHWA CHW Registry is a statewide CHW database. The registry is also the mechanism through which MiCHWA certifies that CHWs have completed the necessary training and met the eight CHW core competency requirements. MiCHWA is currently working with key stakeholders and state legislators to develop policies that would allow recognition of CHW certification in the State (MiCHWA, 2018a). While the State does not currently recognize CHW certification, it is expected that there will eventually be state recognition of the CHW role. This is expected as MiCHWA continues to advocate for the profession and call state legislators' attention to the growing body of evidence supporting the CHW profession. This highlights the importance of completing a MiCHWA CHW training program and defining the CHW role within the target organization by MiCHWA standards.

There is a section of the manual that defines roles for each member of the CHW program team. Within this section, there is also a recommendation to on add positions and personnel such as a HUB coordinator and HUB administrator in the future. Definitions were also included for each of those roles. CHW roles are clearly defined and summarized in a one-page document within the manual. The seven CHW roles supported by MiCHWA (2018b) include: case management and care coordination; community-cultural liaison; health promotion and health coaching; home-based

support; participatory research; outreach and community mobilization; and system navigation. There is a brief description of each role and the related tasks. In the manual there is also a hyperlink provided at the bottom of the CHW role description page which connects to the full 16-page document published by MiCHWA. The 16-page MiCHWA (2018b) document contains detailed descriptions of each role and the evidence supporting the identified role. The CHW roles, sub-roles, skills, and sub-skills outlined in the C3 project report are supported by MiCHWA and align with the CHW seven roles defined by MiCHWA (MiCHWA, 2018b; Rosenthal, Rush, & Allen, 2016).

The MiCHWA CHW role descriptions were also compared to the standards of practice outlined in the IHS Community Health Representative Manual to ensure congruence with IHS standards of care (IHS, 2018). Even though the target organization does not currently follow the IHS model of care for its program, it was important to assess the differences because leadership within the target organization may end up rejecting the MiCHWA standards of practice if they are radically different from IHS standards. The comparison revealed similar CHW role descriptions between the IHS and MiCHWA standards, with the exceptions of client transport and homemaker services in the IHS Community Health Representative Manual. The inclusion of client transport and homemaker services (household chores, preparing food/feeding, or assisting with personal care) in the IHS standards of care may highlight some culturally significant aspects of CHW care delivery in the AI/AN population. These two service categories often cater to those in the Tribe who are at an advanced age, homebound, or those with severely chronic disease and debility (IHS, 2018). This suggests that the individuals who are most likely to utilize the transportation and homemaker services are the Elders of the Tribe. Elders are highly respected and valued in AI/AN culture, so the target organization may opt to continue these particular services. It would not be unreasonable for CHWs in the target organization to perform these tasks as they do not actually require CHWs to practice beyond their scope.

Despite these important considerations, it was ultimately recommended that the target organization restructure the CHW to align with MiCHWA guidelines as closely as possible. This suggestion stems from the primary objectives of this project, which were to increase CHW program efficiency and sustainability. There are no Pathways-associated billing codes for transportation and homemaker services. Since the transportation and homemaker services are not identified in any Pathways or any of the seven MiCHWA CHW roles, inclusion of these roles could also jeopardize any future plans for the organization to become a certified Pathways HUB (PCHI, 2018b).

Create supporting tools and documents for care coordination.

The consent/notice of privacy practice forms, intake assessment checklists and plan of care templates were adapted from examples provided in the Pathways HUB Quick start guide and included in the final manual. It is essential to ensure that ethical and legal issues are met with consent form, release of information and notice of privacy practices. Sample consent forms, release of information and notice of privacy practice documents were included in the manual created for the target organization. It was also important to identify a screening tool and process to identify potential clients and individuals in the community who would benefit from CHW program services. Several examples of tools and templates are provided within the Pathways Community HUB manual. A referral form and initial screening tool were created for the organization and included in the final manual. The referral form and screening tool included in the manual were adapted from the screening tool and referral form used by the Health Department. These forms were generously shared via email communication between the DNP student and a Health Department administrator. The forms were shared with the intention of assisting the DNP student in identifying and developing tools for the organization to use for the CHW program. The Health Department coordinator agreed to share their Pathways screening form template with the target organization. Staff from the local health department agreed to assist with this process and shared their reference tools, which have been tailored to include

local resources and support. The DNP student also discussed development of a policy for the client screening process with organizational stakeholders. One recommendation was to have all patients at the family health clinic complete the screening form when they come in for their annual physical.

Identification of a CHW Training Program

Coordination and regular communication with health department stakeholders led to the identification of an ideal CHW training program. The identified CHW certificate program curriculum reflects the eight Core Competencies of a CHW. These competencies include: advocacy and outreach; organization and resources (community and personal strategies); legal and ethical responsibilities; teaching and capacity building; communication skills and cultural competence; coordination, documentation and reporting; healthy lifestyles; and mental health (MiCHWA, 2018). The eight core competencies are presented in modules that foster the development of job-specific skills and enhance the knowledge base of individuals already working as CHWs. Each module is designed to provide information and interactive activities that are essential to effectively support and foster achievement of optimal health and well-being.

There is an opportunity for the four CHWs at the target organization to complete a CHW certificate course in a nearby location. The CHW Certificate course is comprised of 126 learning hours and 40 internship hours. The 40-hour internship will not be required for the four of the CHWs at the target organization because they are already working as CHWs (MiCHWA, 2018a). Half of the cost of this particular training program may be covered by a state workforce development program, which substantially reduces the costs associated with this particular training program. Unfortunately, it is uncertain whether this offer will extend beyond the April 2019 CHW certificate program (MiCHWA, 2018a). The Spring 2019 CHW training program may be the only opportunity for CHWs at the target organization to complete a CHW training program locally and at half of the usual cost. To maintain state CHW Certification, participants must complete 20 Continuing Education Units

(CEUs) every two years and renew a state CHW Registry Membership annually. State recognition of CHW certification will be an essential factor when considering development of contracts with health payers and collaborating organizations.

CHW Performance Evaluation

The third objective was met through identification and development of a tool that the CHW supervisor may use to track and evaluate individual CHW performance. The DNP student created a CHW performance evaluation tool in Microsoft Excel. This tool was adapted from the Pathways Community HUB Institute (PCHI) CHW performance evaluation sample document and tailored to meet the needs of the organization. The PCHI CHW performance evaluation tool was ideal as it included the following key factors: the number of clients encountered per quarter; a calculated risk score of clients; the number of closed Pathways; total sum of outcome-based units (OBUs) per quarter; documentation quality assurance; and the average number of home visits per day (PCHI, 2018). Each category is weighted, calculated as a percentage, and the total sum adds up to 100 points maximum. For example, the Risk reduction category (Sum of Pathway closures and OBUs) contributed to 40 percent of the total performance evaluation score.

The only unclear piece of the PCHI sample document was the calculated risk score, or RiskQ Score. The RiskQ score is automatically calculated in the Care Coordination Systems (CCS) database (PCHI, 2018). Without purchasing the CCS data system, RiskQ cannot be fully implemented at the target organization. Finances are already a major limiting factor in this project, therefore purchasing CCS will not be feasible at this time. The CCS data system and RiskQ score is proprietary, therefore it cannot be calculated on the performance evaluation tool developed for the target organization.

A risk score calculation tool was not specifically created for this piece of the project. After weighing the benefits of client risk scoring with the potential burden there was mutual agreement between the DNP student and CHW supervisor, that risk scoring would significantly increase the

burden and complexity of CHW evaluation. There are already a number of practice and process changes associated with this project. Implementation of comprehensive risk scoring will be something for stakeholders at the organization to consider in the future. A space for calculating the risk score was ultimately included in the evaluation tool for this reason. Since the RiskQ score cannot be fully implemented as part of CHW performance for the target organization, all clients are given the same risk score of two. Total points in Client/Risk category may be calculated by multiplying the total number of clients by the sum of all encountered client's risk points. The performance score percentage is then calculated and multiplied by the maximum performance points for this category (30 points).

The DNP student added formulas to the corresponding cells of the document to streamline this tool and ease completion of this evaluation. Built in formulas will simplify the evaluation process as sums and percentages are automatically calculated as the user types in the required data. To preserve the integrity of this tool and prevent unintentional alterations to the formulas, the document was locked by the creator and may not be altered except for adding or deleting data points. A separate copy of the original document was also included on the encrypted USB and given to the organization. This allows for an individual other than the creator to modify components of the tool should this be required in the future.

Strategies to Increase CHW Documentation Rates

This objective involved the development of strategies to increase CHW documentation rates. At the time of the project, the CHW supervisor met with CHWs on a weekly basis to discuss client cases and reinforce the significance of documentation completion for care coordination. While all CHWs in the organization had verbalized the importance of this task, documentation completion rates remained marginal. Several strategies were recommended to overcome this issue. First, it was recommended that all CHWs in the organization complete a CHW certificate program. The sixth

competency in the identified CHW certificate program includes an in-depth review of requirements for documentation, care coordination, and case reporting (MiCHWA, 2018a). The documentation module in the identified certificate program teaches CHWs how to gather appropriate client and community information; produce a written record documenting events and activities in accordance with legal principles; examine the relevant health, social, and financial services for each client; and the correct use of health terminology when documenting in client records (MICHWA, 2018a).

The next recommendation was to implement a structured care coordination model with clear and concise documentation tools. As a cost-saving measure, it was essential to find a model with inexpensive or free documentation tools and templates. The Pathways Community HUB Model fit this profile and was used to guide key pieces of this project. This model is well structured, evidence-based, and provides all of the basic tools and templates to initiate it. The 20 Standardized Pathways, initial adult screening checklist, and follow-up checklist were reprinted without special permission and included in the manual submitted to the organization. The 20 Standardized Pathways, initial screening checklist and follow-up visit checklist are open source resources and free to use as long as they are not altered and used exactly as intended (AHRQ et al., 2016; PCHI, 2018a).

Another strategy to increase CHW documentation rates is to improve CHW accountability. This may be accomplished by increasing the line of communication between the CHW and CHW supervisor. Another way was to implement the CHW performance evaluation tool. The CHWs and CHW supervisor are already meeting and communicating regularly, so the next recommended step is to initiate the practice of quarterly individual performance evaluations using the standardized tool. This tool allows for the tracking of the individual performance and work output. One of the four main categories in the performance evaluation tool is quality assurance (PCHI, 2018). This category involves an evaluation of checklist completion rates, appropriateness of documentation, and whether the CHW responds to recommendations made by their supervisor (i.e. CHW modifies or clarifies

documentation when this is advised by supervisor). Regular performance evaluations using a standardized tool is likely to contribute to an increase in individual CHW accountability. Increasing accountability will be essential to improve documentation completion rates. It is expected that the combination of increased accountability, CHW certificate program completion, and the use of structured and concise Pathways documentation templates will lead to higher documentation completion rates.

Tracking and Measurement of Client Outcomes

This objective was accomplished by identifying client outcome measures and developing a tool that the organization may use to track client outcomes. Selection of the Pathways Community HUB Model was a key factor in accomplishing this objective because this model was specifically designed to measure and track client outcomes via “Pathways” (Redding et al., 2014). The “Pathway” is a standardized outcome measurement tool used in the Pathways HUB model to confirm that the intervention has been received and that the risk factor has been addressed (AHRQ et al., 2016). The Pathway also serves as a quality assurance measure and payment tool, and it would be used by the target organization to ensure that each risk factor is addressed and that outcomes have improved (AHRQ et al., 2016). Pathways are designed to outline key interventions or actions required to ensure delivery of efficient and high-quality care coordination services. Each Pathway focuses on one particular patient need or issue and identifies and documents the steps needed to achieve a desired, measurable outcome (AHRQ et al., 2016). Some of the more complex patients may have multiple Pathways open at one time, while others may only need to have one Pathway addressed to meet their needs. There is a total of 20 approved Pathways.

To meet the second part of this objective, the DNP student created an Excel document that the organization may use as a tool to track client outcomes, or the number of Pathways opened and closed (see screenshot of tracking tool created for the organization in Appendix S). This tracking tool

was divided into four main sections on the horizontal plane, one section for each CHW in the organization. Each of the four CHW sections was then divided into three different sections labeled open, closed, and finished incomplete. The 20 different Pathways are listed vertically in the table. This tool may be used by the CHW supervisor to keep track of the total number of client Pathways that are opened, closed, and finished incomplete by each CHW. Equations are built into the Excel document to automatically calculate the totals of each Pathway and outcome at the bottom. This document also includes a separate section which automatically calculates the total number of OBUs achieved per CHW and per Pathway. The total number of OBUs are carried forward automatically to the appropriate individual CHW performance evaluation tool.

An additional tool was built into the same Excel document, but on a succeeding sheet to provide a simpler view of the status and number of Pathways open, closed, or finished incomplete. The numbers entered on the four-section CHW tracking form are automatically carried over to the "HUB" tracking form to avoid double charting and save the user valuable time. The HUB tracking tool also has built in equations to automatically provide sums at the bottom. Additionally, this tool has a column that automatically calculates the total percentage of Pathways finished incomplete and completed (see Appendix T for a screenshot image of the tool). Each of the cells containing built in equations have been locked to preserve integrity of the document.

Reduce Time Spent on Client Transports.

Transportation assistance was identified as a high priority need by key stakeholders and as a barrier to care delivery by CHWs. Many vulnerable individuals in the community lack reliable transportation to get to medical appointments. There is currently underutilization of CHWs and available transportation resources in the community. To help overcome this barrier, a transportation assistance resource guide was created, printed, and distributed to the four CHWs in the organization. This guide included a compilation of a variety of free and low-cost transportation resources available

in the community. The guide was organized according to geographic area and included details such as client requirements (i.e. age, location, level of need), cost, location, and contact information. The hope is that CHWs will use this guide to connect patients to available transportation resources rather than complete the transportation themselves.

Utilizing existing resources in the community and subsequently reducing the number of client transports may allow CHWs to reach a greater number of clients in the community because some transports reportedly consume hours of valuable CHW time throughout a work day. It is also expected that a reduction in the number of client transports will generate short-term and long-term cost savings for the organization. After factoring in CHW wage (roughly $16.83/hour) and standard mileage rates ($.53/mile), transporting an individual to and from a facility that is 30 miles and about 30 minutes away translates to an expense of about $48.63. Eliminating just one client transport per week could lead to a savings of $2,528.76 annually ($48.63/week x 52 weeks). If each CHW eliminated one client transport per week, the organization may save up to $10,115.04 annually.

Develop a Plan for Quality Improvement and Sustainability

This objective was accomplished through the development and delivery of a strategic plan which, if enacted, will gradually restructure the CHW program to standardize care delivery and provide a mechanism for outcome tracking and billing for services. The pay-for-performance design of the Pathways HUB model is critical to the sustainability of the CHW program in the organization. The Pathways Community HUB manual provides document templates, measurement tools and guidance regarding how to achieve this within the target organization. A HUB tracking tool was created by the DNP student in order to meet this objective and the tool was included in the final output product of this project. The strategies and tools developed to accomplish this objective are discussed in the following paragraphs.

Identify funding stream for HUB startup. Evidence suggests that Pathways Community

HUBs eventually become self-sustainable once the infrastructure, systems, and contracts are in place to receive payments for outcomes (AHRQ et al., 2016; Redding et al., 2014). Financial constraints within organizations may limit the development of the infrastructure and systems required to reach self-sustainability. This is why a "kick-start" financial strategy is often recommended when planning a new HUB and developing new contracts (AHRQ et al., 2016).

Anticipated changes to CHW program funding were a motivating factor for this project. The critical changes to federal funding made the identification of potential program funding sources a high priority. After thoroughly investigating funding options and meeting with billing and case management experts from several healthcare organizations in the region, the DNP student concluded that it was not possible to bill for services with the current structure of the CHW program and CHW qualifications. It was also not possible to bill outside of a face-to-face encounter for CHW program-related care coordination or transitional care services under the license of CHW supervisor. Several additional CMS requirements to bill for Chronic Care Management Services was not in place within the Family Health Clinic, nor was the CHW supervisor the primary care provider for every single CHW program client (Centers for Medicare and Medicaid Services, 2017). After discussing these findings with the CHW supervisor, it was determined that kick start funding via grant resources may be the only feasible option for implementing all of the changes outlined in the project plan.

The DNP student consulted staff from the Grants Department to assist with development of a plan for securing the project startup funds. It was not possible for the DNP student to submit a grant application on behalf of the target organization because implementation of this project was still requiring final approval from the Tribal Council. Staff from the Grants Department have access to resources required to accomplish this step in the strategic plan. The DNP student included descriptions and links to key resource guides and websites in the manual to assist with the grant identification and application process when the time comes.

Payment for outcomes. The funding streams sustaining the Pathways Community HUBs in the country that were existing follow a pay for outcomes approach (AHRQ et al., 2016). The standardization of care delivery, documentation, and measurement of outcomes in the Pathways HUB model allows for the development and use of universal billing codes to tie payment to outcomes (AHRQ et al., 2016). Each of the 20 nationally standardized Pathways were designed to link billing codes to Pathway completion (see Appendix Q*).* The billing codes and OBUs linked to the Pathway also provide clear measures to help determine the financial impact of HUB services and whether CHW service efficiencies, cost-savings, and clinical health improvements are achieved (PCHI, 2018a).

Developing funding partnerships with health payers would require complete documentation in conjunction with the use of standardized billing codes for delivery of services, and/or outcomes. Claims data is the preferred language of payers, which means that it is critically important that CHW program tracking and documentation systems are able to speak this language.

The DNP student participated in several conference calls, communicated with consultants via email, and visited a HUB in a western part of the State to learn more about the steps required to reach the point of receiving payment for outcomes. The DNP student developed a checklist for the organization to follow to initiate the steps required to get to the point of negotiating reimbursement with a health payer. It was also recommended that a representative from the Tribe attend several CHIR steering committee meetings to collaborate and pool resources and ideas with other community organizations following the HUB model. The CHIR steering committee members were at that time, working on establishing funding streams and negotiating contracts with local health payers/insurers. Therefore, the recommend collaboration of organizational stakeholders with the CHIR steering committee had potential for furthering reimbursement more quickly.

At the time of this project, Medicare and Medicaid policies did not cover reimbursement for

CHW services in the State. However, there were projections that this could change in the future as more states recognized the importance of CHWs and adopted policies supporting sustainability of the profession. Alaska and Minnesota were among the first two states in the U.S. to gain state legislature approval of direct Medicaid reimbursement of specific CHW services (Minnesota Department of Health [MDH], 2017). Health statutes in these states permit CMS reimbursement of care coordination and patient education services provided by a CHW, as long as the CHW had completed a qualified certificate program and was working under the supervision of a qualified health provider (MDH, 2017).

It was recognized that it would benefit the target organization to prepare for the future by adding completion of a qualified CHW certification program as a training requirement. This requirement was likely to be included in any future state health statutes that would lead to reimbursement from CMS and other health payers. Statewide CHW coalitions were actively advocating for the CHW profession and pushing for state health policy to include financial reimbursement for CHW contributions to patient health (MiCHWA, n.d.). The state CHW coalition recommended that the state adopt a standardized competency-based training and certification system for CHWs; and that state health statutes support CHW reimbursement through Medicaid, Medicaid managed care, and other health payers (MiCHWA, n.d.). The education requirements for CMS reimbursement of CHW services in other states highlighted the necessity of enrolling CHWs at the target organization in a CHW certification program rather than another type of training program (e.g. CNA program).

HUB tracking tool. It was recognized that payments and contracts with health payers and other coordinating agencies would be essential to ensure sustainability of the proposed CHW HUB in the target organization. However, it was unlikely that these proposed payments and contracts would be established until the organization had documentation and metrics showing the positive impact of

the CHW program on health outcomes and cost (AHRQ et al., 2016). The Pathways HUB model was designed to tie payments with clearly defined and measurable Pathway outcomes, so this documentation would facilitate establishing this evidence in the organization. The model provides standardized metrics in the form of Pathways, plus the OBUs and unique billing codes associated with each measure. Organizations wishing to implement the model either must purchase a Pathways-associated EHR (e.g. Care Coordination Systems) or develop their own system to track and evaluate performance. The latter is the most cost-conscious option. Using the Pathways HUB manual as a guide, the DNP student created HUB outcome tracking tools in Microsoft Excel. The HUB tracking tools were developed for use by the CHW supervisor or HUB coordinator to track and assess individual and organizational performance. This tool was described in detail in the tracking and measurement of client outcomes section (also see Appendix T).

Measurement of CHW work output. The Pathways Community HUB model measures CHW work output through calculation of either Outcome Based Units (OBUs) or Relative Value Units (RVUs). Many health payers (i.e. Medicare) follow a healthcare provider fee schedule using RVUs to determine payments for thousands of health services (Coberly, 2015). The fee associated with each service is dependent on the number of RVUs, which rank on a common scale to account for resources used to provide each service. To determine the associated fee, a service's RVUs are multiplied by a dollar conversion factor (Coberly, 2015). RVUs were used in older versions of the HUB invoicing codes use, but the current version of the HUB invoicing codes when this project was completed included the use of OBUs. OBUs functioned similarly to RVUs, but placed a greater emphasis on the outcomes, or closing of Pathways (PCHI, 2018c). By calculating and measuring OBUs associated with CHW services, the target organization could use these data to periodically assess CHW performance, compare CHW work output, and prepare for future contract developments and healthcare policy changes that may lead to reimbursement for CHW services.

Potential cost-savings and return on investment. Many organizations and health systems have seen a positive return on investment following replication of an evidence-based model of CHW care coordination. Following implementation of a CHW outreach program, Fedder and colleagues (as cited in MiCHWA, n.d) reported a 38% reduction in ED visits, 53% reduction in ED admissions, and a 30% reduction in total hospital admissions. This reduction in ED utilization and hospital admissions led to a total cost savings of $262,080 for 117 patients. Whitley and colleagues (as cited in MiCHWA, n.d) saw a reduction in urgent care and inpatient admissions, which contributed to a ROI of $2.28 per dollar spent. Using the Pathways HUB model of care coordination, Redding et al. (2014) estimated a long-term ROI of $5.59 per each dollar invested. Therefore, evidence suggests that the costs associated with replication of the Pathways HUB model is a worthwhile investment and may lead to a positive return on investment and substantial per capita healthcare cost-savings.

Discussion

CHWs are integral members of the interdisciplinary healthcare team, especially in rural and underserved areas where there are more geographic and socioeconomic barriers to accessing health and social services (AHRQ et al., 2016). CHWs can add value to any healthcare system, as they positively impact all three aspects of the Triple Aim (AHRQ et al., 2016; ASTHO, 2017; MiCHWA, n.d.). CHWs strengthen the connections between vulnerable populations and health and human service systems through delivery of culturally competent care and regular communication with health providers. Improving the line of communication between patients and their providers improves care coordination, minimizes duplication of care, reduces risk for errors related to poor communication, promotes culturally competent care, and improves patient perception of quality of care (Kangovi et al., 2014; MiCHWA, n.d.). CHWs also address the second part of the triple aim, improving health of the population. There is an abundance of evidence to support the claim that trained CHWs contribute to improved health outcomes, lower disease burden, and promote positive

behavioral and physiological change (*See Appendix I*). Integration of trained CHWs into care teams has also been shown to decrease ER utilization rates and lower per capita healthcare costs (AHRQ et al., 2016; Redding et al., 2014; MiCHWA, n.d.).

Replication of the Pathways HUB model in the target organization would establish standardized metrics that may be used to evaluate individual and organizational performance. This allows for a more accurate representation of individual work performance and would provide tangible data demonstrating CHW value to the community. The HUB model also provides a mechanism to measure CHW work output through calculation of RVUs or OBUs. Most health payers follow a healthcare provider fee schedule using RVUs to determine payments for health services (Coberly, 2015).

It was recognized that affecting organizational leaders' perceptions of the value associated with CHW training and certification was important. CHW certification was judged to be critical to the implementation and sustainability of this project. This training requirement was likely to be included in any future state health statutes or contracts that would lead to reimbursement from health payers. Evidence suggested that when CHWs are effectively trained and equipped to address identified needs of the community that they serve, they can improve the patient care experience, improve health of the community, and reduce per capita costs of health care (ASTHO, 2017; MiCHWA, n.d.). It was expected that the costs associated with replication of the Pathways HUB model and CHW training program would eventually pay for itself by improving CHW competency and providing them with the tools necessary to reach more individuals in the community; improve work flow; and increase work output.

Key stakeholders at the target organization and health department were instrumental to the development of this project. After strengthening the connection between the target organization and the local health department, there were new and promising opportunities for the future, with mutual

benefit for both organizations. These opportunities included coordination of CHW training sessions, continuing education, and greater connections to community resources. The health department coordinator extended an offer to include the four CHWs at the target organization in the health department's next CHW training session. This training session was to take place in a location near the target organization, was to include CHW-specific training with the core competency requirements needed for certification, and half of the cost of the training program to be offered in Spring 2019 was to be covered by a state workforce development program.

Implications

It was anticipated that the implementation of an evidence-based model of care coordination would increase CHW documentation completion rates and provide a standardized measurement tool to efficiently evaluate patient outcomes and CHW performance. It was expected that the use of the Pathways HUB model in the organization would improve care coordination across multiple health and social services, thereby minimizing duplication of care, increasing efficiency and improving sustainability of the target organization's CHW program. The overarching, long term goals of this project were to improve health outcomes and reduce associated health care costs in a rural Native American community.

Limitations

There were limitations in the community needs assessment because it was comprised of data extrapolated from reports which included populations outside of the target area and population. Individual Tribal health data has been historically difficult to obtain due to racial misclassification, small populations, and lack of funding and resources for reliable and rigorous data collection (ITC, 2014). A full-scale community needs assessment of the target population would require far greater time, funding, personnel, and resources than what was available for project completion. Efforts to minimize this limitation included the use and application of data

from the regional Community Needs Assessment and state Tribal Health report. In this way, there was inclusion of health assessment data from a similar geographic area of the Tribe and health data specific to the Native American population. These data were then presented to key stakeholders within the organization, who agreed that the health and social needs were very similar to those recognized within their community.

Reflection on Enactment of DNP Essential Competencies

The American Association of Colleges of Nursing (AACN) outlines eight foundational outcome competencies that are essential for all DNP program graduates. These core competencies, or *DNP Essentials*, are fundamental to all advanced practice nursing roles (AACN, 2006). Each of the *DNP Essentials* were met throughout the course of this project. A reflection on how all eight of the competencies were met is described below.

Essential I: Scientific Underpinning for Practice

The first *DNP Essential* delineates the use of scientific evidence as the foundation for nursing practice (AACN, 2006). A DNP-prepared nurse has the skills necessary to integrate nursing science with knowledge gleaned from ethics, theory, biopsychosocial, organizational and analytical sciences. This wide array of knowledge may then be used to determine the significance of a health phenomenon and develop evidence-based practice approaches (AACN, 2006). The DNP student systematically reviewed evidence from multiple scientific domains and used this knowledge to guide practice and develop strategies to increase efficiency and sustainability of an identified Tribal CHW program. Elements from Margaret Leininger's Cultural Care Theory and the Pathways Community HUB Model of Care Coordination served as a guide for this project. The final output of this project and strategic plan is grounded in scientific evidence and reflects nursing practice at the highest level.

Essential II: Organizational and Systems Leadership

Organizational and systems leadership skills are essential to improve quality of care and patient health outcomes. These skills are necessary to accomplish the overarching goals to eliminate health inequities, and to promote patient safety and excellence in nursing practice (AACN, 2006). The DNP student conducted an organizational assessment to evaluate the target organization's current state of CHW care delivery, documentation practices, qualifications and training requirements. An evidence-based strategic plan was then developed by the DNP student in an effort to meet current and future needs of the organization and community. Special consideration was given to respect stakeholder preferences, cultural practices and the vulnerability of the patient population. This competency was also demonstrated by the development of tools tailored to the organization may use to objectively and systematically evaluate CHW care delivery in the future. The strategic plan addresses accountability of care quality by incorporating a model of care that allows for tracking of CHW work output and patient outcomes. The DNP student met the third part of the *DNP Essential* by helping the organization understand the ethical dilemma in CHW documentation practices and the impact that it has on care coordination, efficiency, future funding and sustainability of the program.

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

DNP Essential III involves the use of analytic methods to judiciously appraise the existing literature and determine the best evidence for implementation into practice (AACN, 2006). This competency was demonstrated by the DNP student through the use of PRISMA guidelines as the framework for systematically reviewing the existing evidence and completing a review of literature. This Essential was also met through the consultative role taken on by the DNP student throughout the course of the project. Another component of Essential III involves application of relevant findings to improve practice and then implementation of these processes to evaluate outcomes (AACN, 2006). Although this part of the overarching project did not include implementation, the DNP student met this objective through the development of a procedure manual and performance evaluation tools for

individual CHWs and the CHW program as a whole. The development and dissemination of these implementation and evaluation tools allow organizational stakeholders to institute change at their own pace.

Essential IV: Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care

Not all aspects of this competency were addressed in this project as there were some barriers encountered during the project such as documentation practices and PHI access limitations as an outside member of the organization. The DNP student did explore an EHR program at a neighboring Pathways HUB. The knowledge gained from this experience may be valuable to the target organization in the future should they make the decision to invest in an EHR program that incorporates Pathways documentation tools. The DNP student also applied the knowledge and skills gained from clinical experience and research to develop a tracking and outcome monitoring tool that the organization may use as a quality measurement and performance evaluation tool.

Essential V: Healthcare Policy for Advocacy in Health Care

Essential V pertains to the ability of the DNP graduate to design, execute and advocate for health policies that address issues of health inequities and social justice. The factors that initially motivated the DNP student to pursue this project relate to the health inequities facing AI/AN people paired with the unfortunate circumstances of an increasing federal funding deficit. The expected outcomes of this project include the continuation of a community-based program serving some of the most vulnerable individuals in a marginalized population. The DNP student has advocated for the CHW profession to key stakeholders and called for an additional investment in this program to adequately train and equip CHWs with the tools necessary to provide safe, high quality care and positively impact more members of the community. This project serves as a means for the target organization to develop contracts with health payers and negotiate payment for identified outcomes.

This project is an important first step toward financial sustainability of the CHW program within the organization.

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

Enactment of *DNP Essential VI* requires the use of effective communication, collaborative, consultative and leadership skills with members of the interprofessional healthcare team (AACN, 2006). All competencies within this essential were met through throughout the course of this project. The DNP student acted as a consultant within the target organization to find effective and evidence-based solutions to increase the efficiency and sustainability of the CHW program. Effective communication, collaborative and leadership skills were required to fulfil the role as consultant and to successfully deliver the final output of this project. The foundation of this project involves improving communication and collaboration between various members of the interdisciplinary healthcare team in a complex Native American community health system. The input and collaboration with multiple team members in various roles throughout the organization were critical to the completion of this project. There was an open line of communication with key stakeholders within the organization. There was regular communication with the CHW supervisor, CHWs, health department personnel through a number of telephone conference calls and face-to-face meetings.

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

DNP Essential VII involves analysis and interpretation of population health data in order to find the evidence-based interventions and care delivery models to improve the health of diverse populations (AACN, 2006). Essential VII was met and demonstrated through completion of certain pieces of this project. The DNP student evaluated the Tribe's demographic data from the preceding few years to identify potential target areas for the CHWs to provide outreach services. Key health and socioeconomic data from the 2016 Community Needs Assessment and Inter-Tribal Health Data

Report were extrapolated to assist with identification of the highest priority Pathways for the target population.

Essential VIII: Advanced Nursing Practice

The foundational advanced practice competencies identified in *Essential VIII* are requisite for DNP practice and apply to a diverse number of specialties (AACN, 2006). *Essential VIII* is exemplified through refined clinical assessment skills, cultural sensitivity, development of therapeutic relationships, as well as the design, implementation, and evaluation of evidence-based therapeutic interventions (AACN, 2006). The cultural sensitivity piece of *Essential VIII* was demonstrated throughout the entirety of this project. The foundation of the Pathways Community HUB Model involves the use of culturally competent CHWs in the delivery of community-based care (Redding et al., 2014). The DNP took the time to build a relationship of trust and show respect of the Native American heritage and culture. The DNP student attended several community events and spent time with each one of the CHWs to build trust and learn from them. Enactment of *DNP Essential VIII* also required the use of advanced conceptual and analytical skills to evaluate the links among organizational, clinical practice, populations, fiscal and policy issues (AACN, 2006). This part of the *Essential* was accomplished through completion of an organizational assessment, budget analysis, assessment of community needs, as well as review of various federal, state and organizational policies involving CHW clinical practice. *DNP Essential VIII* was exemplified through the development and delivery of the final output of this project. The dissemination of project outcomes is described in the section below.

Project Outcome Dissemination

Dissemination of the project outcomes occurred in multiple stages. The first part includes the DNP project defense and approval from the DNP student's project committee. The DNP student also designed a Power Point presentation and step-by-step manual to present to key organizational

stakeholders. The Power Point presentation disseminated the outcomes of the project and defines the next steps for project implementation and evaluation. The step-by-step manual includes the data, standardized forms, and tools necessary to initiate the implementation process within the organization. The manual was to be printed, placed in a three-ring binder and distributed to Tribal leadership. An electronic version of the manual was given to the CHW supervisor on an encrypted USB along with the tools designed for outcome tracking, CHW performance evaluation, and RVU calculation/future billing. Lastly, a manuscript detailing the project was to be uploaded to ScholarWorks ♥.

Conclusion

Evidence suggested that when CHWs are effectively trained and equipped to address the needs of the community that they serve, they can improve the patient care experience, improve health of the community, and reduce per capita costs of health care (ASTHO, 2017; MiCHWA, n.d.). Benefits to the target organization in adding completion of a qualified CHW certification program as a training requirement were identified and communicated to the organization because this level of training would likely be a requirement in future state health statutes and contracts that would lead to reimbursement from health payers. An opportunity for the four CHWs at the target organization to complete a Pathways-based training course in a nearby location was identified. Half of the cost of this training program could be covered a state workforce development program, although it was uncertain whether this offer would extend beyond the most immediate Spring 2019 CHW training program (MiCHWA, 2018). It is expected that the overall costs associated with this project will eventually lead to a positive return on investment pay for itself by improving CHW competency and providing the tools necessary to reach more individuals in the community; improve work flow; and increase work output.

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Appendix A

The Burke-Litwin Model of Organizational Performance and Change

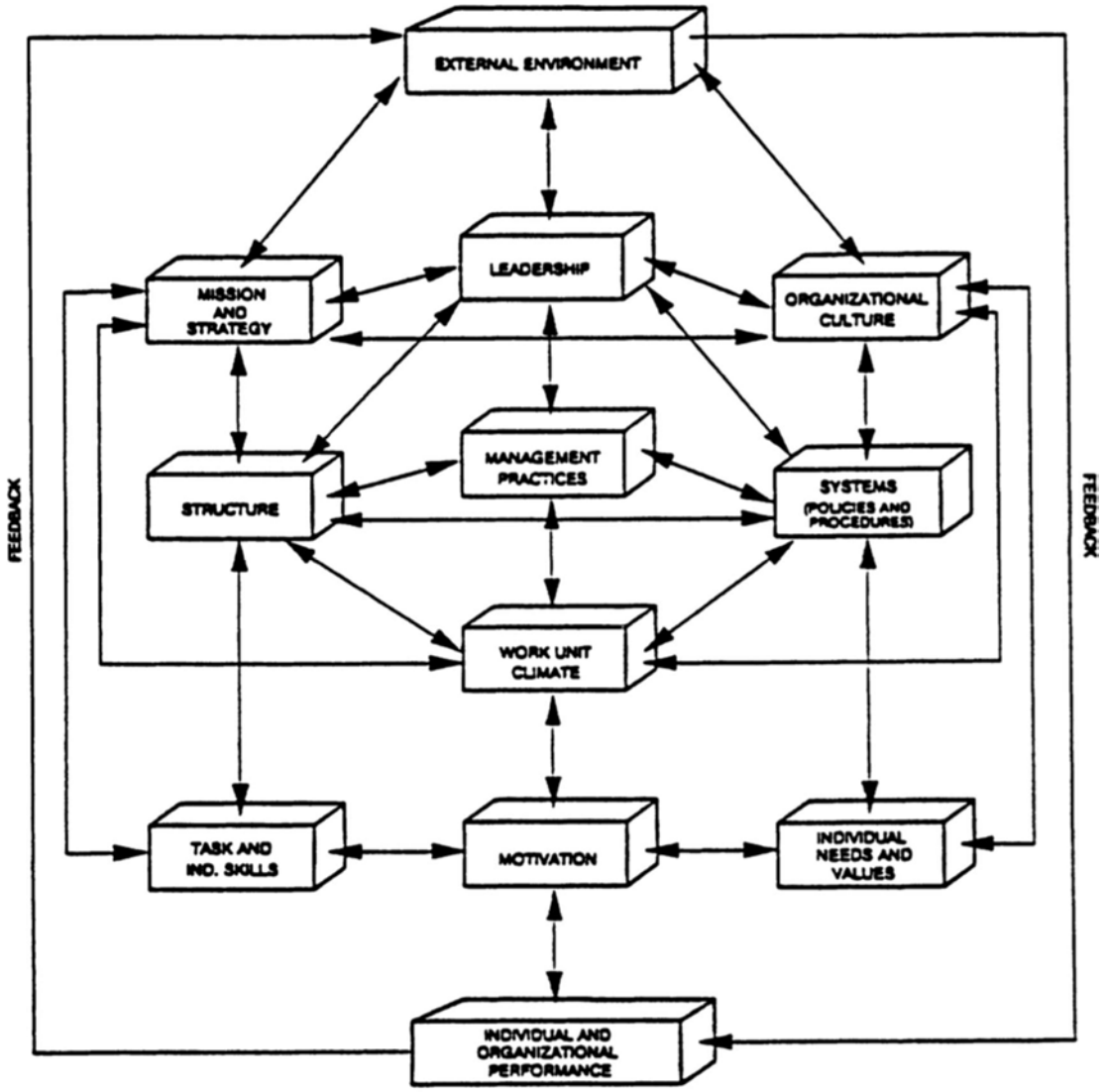
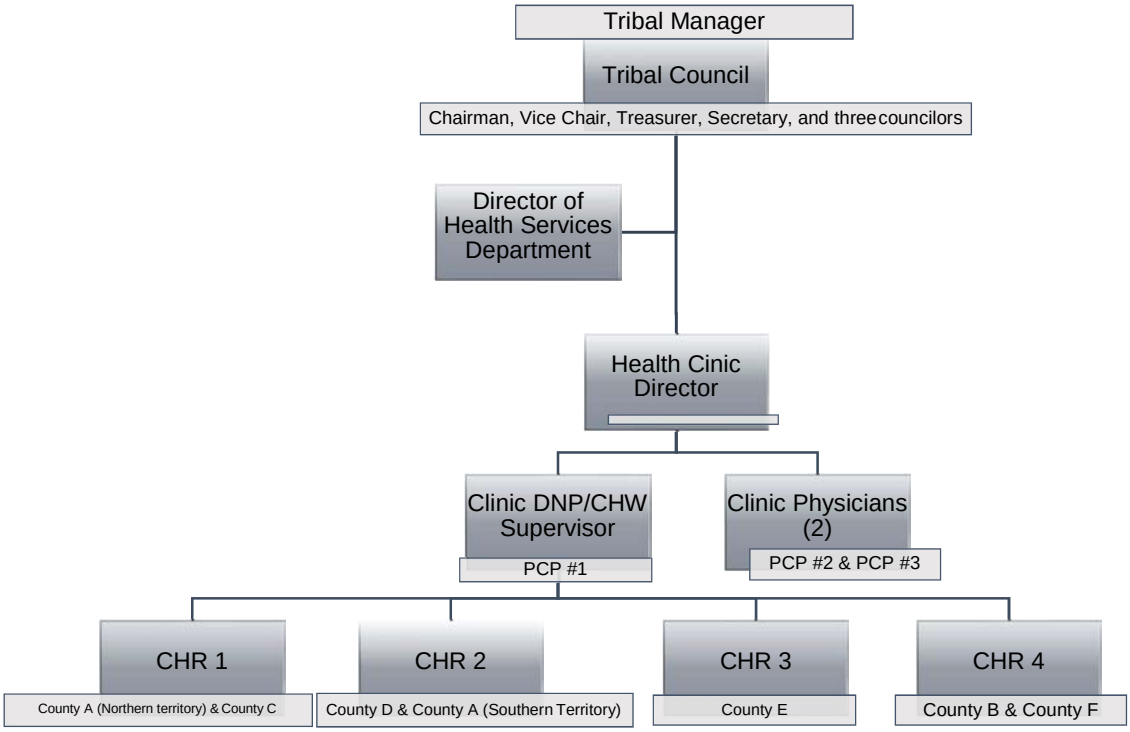


Figure 1. A model of organizational performance and change. Reprinted with permission from "A Causal Model of Organizational Performance and Change," by W. W. Burke and G. H. Litwin, 1992, *Journal of Management*, *18*, 528. Copyright 1992 by Southern Management Association.

Appendix B

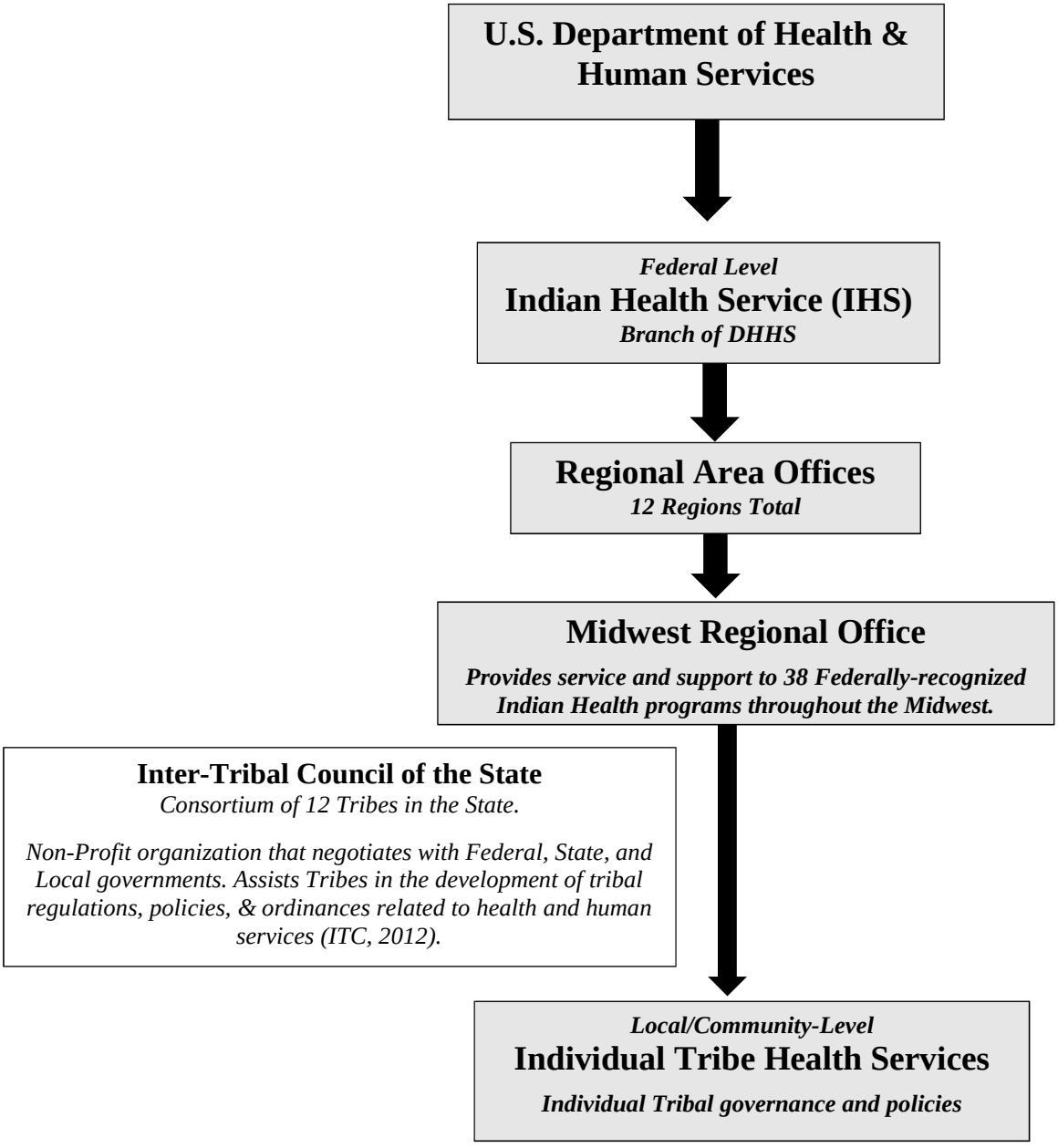
Visual Representation of the Chain of Command within the Organization

Figure 2. Organization Chain of Command



Appendix C

Figure 3. Structure and Hierarchy of the Indian Health Service



Appendix D

Summary of SWOT Analysis Results

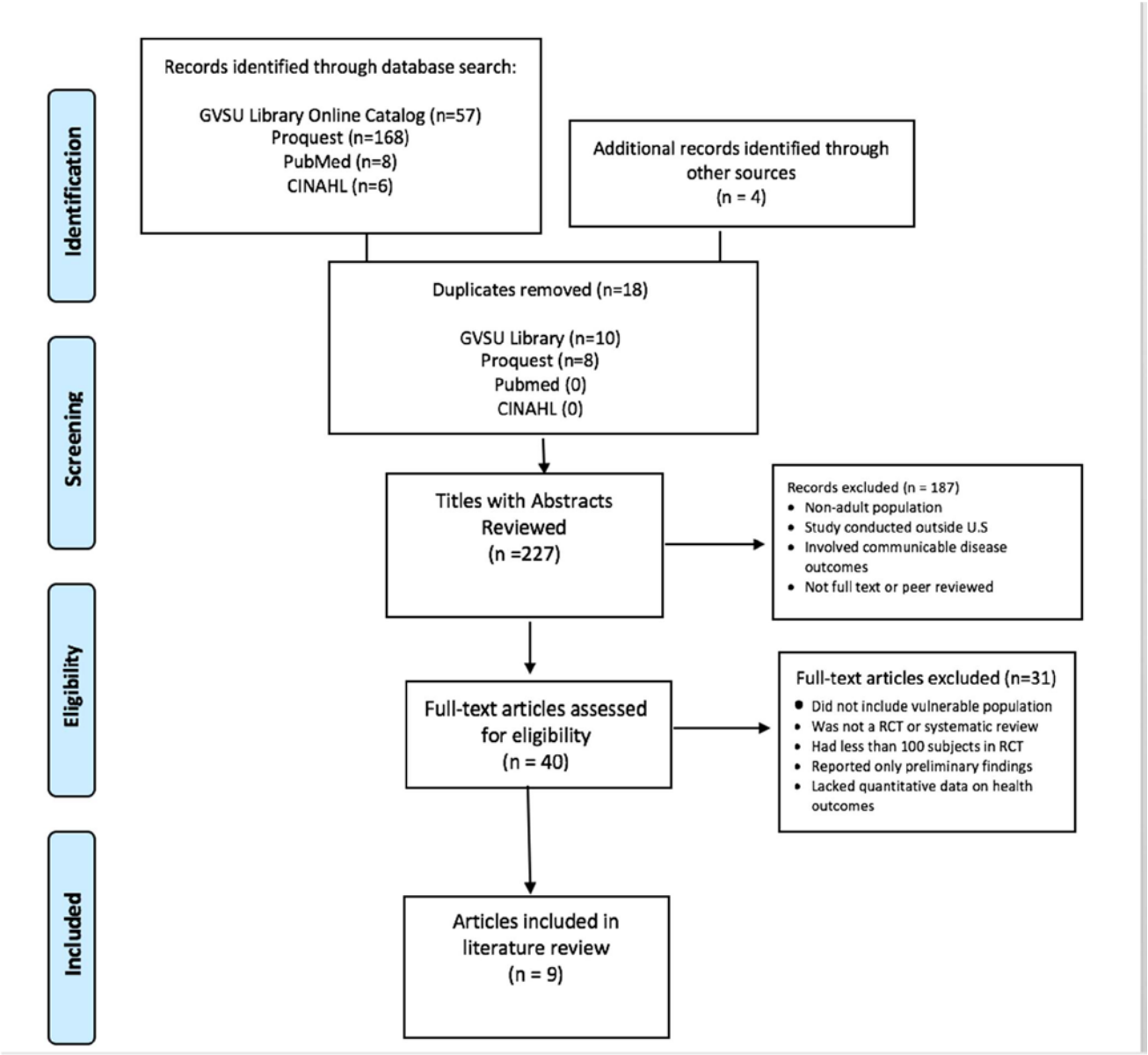
Table 1. SWOT Analysis of Tribal Organization

Strengths	**Weaknesses**
• Problem with program sustainability identified by organizational stakeholders. • CHW program is currently in place and valued by stakeholders. • CHW program supports mission of the GTB Tribal Council, empowers community members, and facilitates comprehensive and culturally competent care. • CHWs have strong ties to the community as they are all tribal members.	• Limited understanding of CHW role within organization. • CHWs primarily used for transportation. • CHWs have limitations in function and role based on current level of training and education.
Opportunities	**Threats**
• ACA initiative under the CMS Innovation (CMMI) awarded State Innovation Model (SIM) grants given to state to design and test new payment and care delivery models incorporating CHWs. Local health department was one of the organizations selected to pilot a CHW model of care. • Strong sense of community and cultural pride- CHWs further support and bridge cultural gaps between providers and patients. • Many patients have the potential to benefit from CHW program services. • Community may benefit from overall cost savings	• FY2019 budget eliminated federal funding for IHS CHW programs (-$60 million). • Lack of outside funding via state or federal grants • Limited mechanisms for reimbursement based on current level of CHW education and current state CMS health service reimbursement policies • Limited population-specific data to support a business model of care for CHW program.

Appendix E

PRISMA Flow Diagram of Search Selection Process

Figure 4. PRISMA Flow Diagram



Appendix F

Summary of Results from Literature Review

Table 2: Summary of results from reviewed articles

Author (Year) Purpose	Design/ Setting	Inclusion Criteria	Intervention vs Comparison	Results	Conclusion	Cost/ ROI?
Allen et al. (2011): Determine efficacy of NP/CHW intervention	RCT Urban setting: 2 outpatient FQHCs and participants ' homes.	• Patient at FQHC • Age >21, • Diagnosis of HTN, diabetes, or hyperlipidemia	Control group (usual care) versus intervention group with NP/CHW directed interventions including: aggressive medication management, follow-up calls, appointment reminders, individualized educational sessions and lifestyle management counseling sessions.	NP/CHW intervention group had statistically significant improvements in: total cholesterol (difference, 19.7mg/dL), LDL cholesterol (difference 15.9 mg/dL, $p<0.001$), SBP (difference 6.2mm, $p=0.018$), DBP (difference, 3.1 mm Hg), HbA1c (difference, 0.5%, p=0.016). Intervention group also had clinically significant improvement in perception of quality of care (difference, 1.2 points).	Delivery of care via a NP/CHW team using individually tailored treatment regimens and treat-to-target algorithms can provide ROI, improve CVD risk factors, status and perceptions of care quality in vulnerable populations.	Allen et al. (2014) estimated a savings of $157 and $190 per 1% reduction SBP & DBP; $149 for every 1% reduction in HbA1C; $40 for every 1% reduction in LDL
Kangovi et al. (2014) evaluated efficacy of a CHW intervention based in the IMPaCT Model.	RCT Urban Hospital setting, then home visits	• Age 18 -64 years • Observation or inpatient status • Uninsured or publicly insured • Discharged to home • Residents of Philadelphia	Control group (n=224) received usual care. IMPaCT group (n=222) CHWs worked with patients during hospital admission to formulate individualized action plans for achieving goals for management of chronic conditions. The CHWs provided support tailored to patient-specified goals for a minimum of 2 weeks.	CHW intervention group was more likely to obtain timely post-hospital primary care (60.0% vs 47.9%, $P = .02$). The intervention group reported high-quality discharge communication (91.3% vs 78.7%, $P = .002$), and had overall improvement in mental health (6.7 vs 4.5, $P = .02$) and patient activation (3.4 vs 1.6, $P = .05$). Intervention group less likely to have multiple 30-day readmissions (2.3% vs 5.5%, $P = .08$) Among the subgroup of the 63 readmitted patients, recurrent readmission was reduced from 40.0% to 15.2% ($P = .03$).	Individually tailored CHW intervention improves access to primary care and quality of discharge while controlling recurrent readmissions in a high-risk, low SES population with variable conditions.	Not reported

Kangovi et al. (2017): IMPaCT Individualized Management for Patient- Centered Targets Purpose: Determine whether a CHW intervention improved outcomes in a low-income population with multiple chronic conditions.	Randomized controlled trial (n=302) Internal medicine clinic Urban setting	• Age >18 (mean age 56.6) • Had upcoming appointment at study clinics • Lived in a high-poverty region of Philadelphia • Diagnosed with 2 or more chronic diseases: hypertension, diabetes, obesity, and tobacco dependence.	Control group (n=152): goal setting alone. Intervention group (n=150): Goal-setting plus CHW intervention. The intervention: consists of 3 stages- action planning, tailored support, and connection with long-term support. Intake evaluation: semi-structured interview guide to understand social and behavioral determinants of health (e.g., food insecurity, housing instability, drug and alcohol use, social support).	At 6 months, there were differences in disease control between CHW support vs. goal setting alone (P=.08): HbA1c: –0.4 vs 0.0; BMI: –0.3 vs –0.1; Cigarettes per day: –5.5 vs –1.3; SBP: –1.8 vs –11.2. The intervention group had greater improvements in mental health (2.3 vs –0.2; P = .008), reported higher quality primary care (49.2% vs 39.7%; P = .010) and better support in disease self-management (62.9% vs 38%; P < .001). At 12 months, 23.3% of patients in the intervention arm were hospitalized vs. 31.6% in the control group (P = .11).	Compared to collaborative goal-setting alone, a CHW intervention plus collaborative goal-setting led to improvements in diabetes, obesity, and smoking, but not in hypertension. The CHW support also led to improvements in mental health, quality of primary care, and reductions in hospital admissions	Not reported
Carrasquillo et al. (2017): Miami Healthy Heart Initiative Purpose: Determine whether a CHW intervention improved outcomes among Latinos with poorly controlled type 2 diabetes.	Randomized controlled trial (n=302) Urban setting	• Age 18-65 • Treated in one of two outpatient clinics • HbA1c of 8 or greater.	Control Group (n=150): Usual care vs. Intervention (n=150): • 4 CHW home visits • Follow-up phone calls • Bi-monthly exercise groups, Individualized Services: • Health education • Health coaching • Patient navigation (help scheduling appointments, appointment reminders) • Communicating with clinician about patient care issues/concerns, medication refills.	HbA_{1c} level was 0.51% lower in the CHW intervention group. At 12 months, the proportion of patients with HbA_{1c} level ≤8.0% was 42 (37.8%) in the CHW group vs 26 (25%) in the control group ($P = .03$). Those who entered the study with an HbA_{1c} level of at least 9.0%, the HbA_{1c} level was 1.36% lower in the CHW vs the control group.	12-month CHW intervention resulted in modest improvements in HbA_{1c} levels. No statistically significant reductions in systolic BP or LDL.	**Cost:** No formal cost-analysis, but authors estimated that the cost for a CHW (30 patient caseload) and supervising case manager would be approximately $2,300 per patient annually.

Islam et al., (2018) DREAM (Diabetes Research, Education, & Action for Minorities)	RCT Urban setting	• Age 21-85 • HgbA1c >6.5 • Live in New York City • Bangladeshi descent	The intervention group (n=128): • 5, 2-hour monthly CHW-led educational sessions. • Education topics: nutrition, physical activity, stress management, diabetes-related complications, preventive self-care, and family support. • 2 one-on-one visits with a CHW at which they set individual health goals. • Control group participants were only invited to the first educational session.	At 6-months: • HbA1c reduction 0.2% in the intervention group; no improvements in control group (P=0.063). • Target HbA1c <7.0% (36.3% versus 24.6%, P=0.034). • More intervention group participants understood what HbA1c was (75% versus 28%, P<0.01), reported increased physical activity (P<0.01), and tested glucose at least once per week (78% versus 66%, P<0.05) • Intervention group: Cholesterol decreased 10.6 mg/dL (P=0.004) vs. 0.6 mg/dL in the control group (P=0.878). • SBP reduction 1.7 mmHg (P=0.441) • DBP reduction (P=0.619).	A culturally- tailored CHW intervention can improve outcomes for high-risk patients with type-two diabetes. This invention demonstrates modest improvements in HbA1c, systolic and diastolic blood pressure, cholesterol, and patient-centered outcomes such as knowledge and behavior related to self-management of diabetes.	Not reported
Redding et al. (2014): Pathways The Community Health Access Project (CHAP) Purpose: The main objective was to compare the adjusted odds of LBW between CHAP recipients and non-CHAP recipients.	Pre/Post implementation Urban Ohio community	Pathways Community HUB Model was used to identify at-risk pregnant women that lived in 1 of 5 census tracts in in Richland County, Ohio. Women having a live singleton birth between 2001-2004.	Control births (n=115) CHAP Intervention (n=115): CHWs worked as community care coordinators, did not provide direct services. Helped patients overcome barriers to obtaining necessary health or social services. Pathways checklists used at each face-to-face home visit. Answering a ''yes'' to certain questions triggered the initiation of a defined Pathway.	7 LBW births (6.1 %) in the CHAP group vs. 15 (13.0 %) in non-CHAP group. CHAP group had significantly lower odds of LBW delivery vs. non-CHAP women (adjusted odds ratio = 0.36, 95 % CI (0.12, 0.96) 89 % of women in the CHAP group attended postpartum appointments and reported using a family planning method.	The use of CHAP, a structured CHW delivered community-based care coordination program, coupled with Pathways tracking and payment for outcomes resulted in a significantly lower probability of delivering a LBW infant among high-risk women.	**Cost**: CHAP averaged $751 per pregnant client. **Cost savings in first year of life**: $3.36 for each dollar invested. **Long-term savings:** $5.59 per each dollar invested.

Rothschild et al. (2014) Purpose: Assess the impact of a CHW-delivered self-management intervention on glycemic control among Mexican Americans with diabetes.	RCT Urban setting	• Mexican-American living in Chicago • Diagnosed with type 2 diabetes • Aged 18 years or older • Being treated with at least 1 hypoglycemic agent.	Control group (n=71): Received a bilingual 'control' newsletter delivering the same information on the same schedule. Intervention group (n=73): CHWs delivered behavioral self-management training during 36 home visits over a 2-year period.	• Intervention group had lower HbA1c than control group at both year (P=.021) and year 2 (P = .005). • Intervention group increased physical activity from a mean of 1.63 days per week at baseline to 2.64 days per week after 2 years.	A CHW-delivered self-management intervention resulted in sustained improvements in glycemic control over two years among Mexican Americans with diabetes.	Cost: The average salary and benefits of CHWs came out to be about $85 per participant per month.
Kim et al. (2016) Purpose: Synthesize existing evidence on type of CHW interventions, qualification, patient outcomes and cost-effectiveness.	Systematic review of 67 studies	63/67 studies conducted in the U.S. and involved use of CHW interventions in vulnerable populations with chronic, non-communicable conditions.	**Roles assumed by CHWs**: health education (n = 48), counseling (n = 36), navigation assistance (n = 21), case management (n = 4), social services (n = 7), and social support (n = 18)	• 21/30 (70%) studies evaluating cancer screening found improvements in screening behaviors • 5/9 (56%) studies assessing global CVD prevention found greater improvements in lipid profile, SBP, HbA1C, and global CVD risk. • Significant improvement in physical activity (n=1). • 6/8 studies that exclusively focused on HbA1C found significant improvements in diabetes control. • Improvements in blood pressure control (n=4).	CHW-delivered interventions appear to be effective when compared with alternatives. CHW interventions are and also cost-effective for certain health conditions in vulnerable populations.	8 articles documented cost analyses and found that integrating CHWs into the healthcare system was associated with cost-effective and sustainable care.
Verhagen et al. (2014)	Systematic review of 7 RCTs	RCTs that included CHW interventions focused on health outcomes	**Roles assumed by CHWs**: Patient education (n=7) Counseling (n=6) Navigation assistance (n=5) Social support (n=7) Case management (n=6)	Higher rates diagnostic follow-up after breast cancer screenings (p=0.001). Better eating habits ($p < 0.001$) (n=1), more physical activity ($p < 0.001$) (n=1), lower salt, cholesterol and fat intake (p = 0.01), weight control practices (p = 0.01), perceived benefits (p = 0.01).DBP ($p<0.001$); waist circumference (p = 0.09), cholesterol (p = 0.10), and HbA1c (p = 0.09), & 10-year reduction in CHD risk.	No significant differences in outcomes were found in two studies. Positive effects found in five studies. CHWs may serve as a means of improving healthcare utilization, health behavior & outcomes among older adults of an ethnic minority.	Not Reported

Appendix G

Characteristics of Reviewed Articles

Table 3. Characteristics of Articles Reviewed

RCTs	**Mean age (years)= 53.2**	**N= Total Number of Study Participants**	**Type of insurance**	**Race/Ethnicity**
Allen et al. (2011)	54.5	N=525	Private (43.3%); Public Insurance (40.2); Uninsured (16.5%)	Black (79.3%); White (20.7%)
Carosquillo et al. (2017)	55.2	N=300	Uninsured (81.3%)	Hispanic (100%)
Kangovi et al. (2014)	45.1	N=446	Uninsured (77%)	Black (93.3%)
Kangovi et al. (2017)	56.3	N=302	Public Insurance (82.1%)	Black (94.7%) Hispanic (2.7%)
Islam et al. (2018)	54.2	N=256	Not reported	Asian (100%)
Rothschild et al. (2014)	53.7	N=144	Not reported	Hispanic (100%)
Pre/Post				
Redding et al. (2014)	Categorized as <18 (25.2%) or >18 (74.8%)	N=230	Not reported	Black (67.8%); White (32.2%)
Systematic Reviews	**Age Range & Mean age**	**Number of subjects (range)**		**Race/Ethnicity**
Kim et al. (2016) - 67 studies	32-71 years; mean age not reported	N=25 to N=167, 915	Not reported	Not individually reported but noted that ethnic minorities were the sample population in 63/67 studies.
Verhagen et al. (2014) - 7 RCTS	Age 45+; mean age 54.3 years	N=125 to N=1093; mean N=575	Not reported	1.) Hispanic (96%) 2.) Hispanic (82%) 3.) Asian (100%) 4.) Black (100%) 5.) Hispanic (100%) 6.) Hispanic (100%) 7.) Hispanic (100%)

Appendix H

CHW Program Components

Table 4. Key Components of Reviewed CHW Programs

Key Components of Reviewed CHW Programs

	CHW Model of Care	Documentation	Training	Supervisor	CHW Performance Evaluation/Fidelity	CHW Wage	CHW Roles
Allen et al. (2011)	COACH: Community Outreach and Cardiovascular Health	CHW Documentation required, reviewed by supervisor. Encounter forms tracked the number, length, and content of the encounters (Allen et al., 2014).	CHWs were trained in the disease pathophysiology of CHD and diabetes and therapeutic lifestyle management approaches of nutrition and physical activity, motivational interviewing, and behavior change techniques.	APRN supervisor of CHWs and case coordinator	• Followed a Quality Assurance (QA) plan to assure adherence. • QA assessments were conducted on a quarterly basis. • Performance evaluations were discussed, and supervisor provided feedback to provide positive reinforcement and/or a plan for additional training in a timely basis.	$18.32/hour (Allen et al., 2014)	*Use standardized protocols/model of care* 1.) Patient education 2.) Counseling 3.) Home visits when patient not making progress toward goals 4.) Telephone calls to check in with patients
Carrasquillo et al. (2017)	CHW model guided by CDC & National Institute of Health (NIH) National Heart, Lung & Blood Institute (NHLBI) CHW training manual & CDC CHW training manual (Carrasquillo et al., 2017)	Documentation required and reviewed by supervisor. 30 Patients per CHW	**Initial Training**: 75-hour training curriculum with training on type 2 diabetes interventions, motivational interviewing, depression screening and how to connect patients with the mental health resources training. CHW trainees shadowed 5 patient home visits with another CHW before receiving their initial cases. **Ongoing Training**: periodic training every 2 months on issues such as skills, clinic and insurance navigation, diabetes care, and cardiovascular disease	Master's level social worker Supervisor does case management	• Supervisor reviewed all case logs. • Fidelity tracked by random monitoring of CHW telephone calls, accompanying to selected home visits, and reviewing quantitative data on calls, visits, and group sessions.	Not reported	*Use standardized protocols/model of care.* 1.) Patient education Individual & Group sessions: 60 min, 1 session/week, 20 patient max. 2.) Counseling 3.) Home visits & telephone calls to check in with patient 4.) Healthcare navigation assistance 5.) Referral to social services

Kangovi et al. (2014)	IMPaCT: Protocol defined standardized work practices that CHWs use	Documentation required, reviewed by supervisor. 2 CHWs/222 total intervention patients.	**IMPaCT protocol**: • College-accredited month-long CHW-specific training course. • Core competency requirements. **Other training**: • Motivational interviewing, • Professional boundaries	Master's level social worker Case management done by supervisor	• Bi-weekly individual meetings • Telephone contact • Real-time consultation • Documentation review.	$14.00/hour	*Use standardized protocols/model of care* 1.) Patient education 2.) Notify supervisor of potential need for social service 3.) Goal setting & goal support 4.) Connection to primary care
Kangovi et al. (2017)	IMPaCT	Documentation required, reviewed by supervisor. 4-6 CHWs & 150 subjects in intervention group.	**IMPaCT protocol**: • College-accredited month-long CHW-specific training course • Core competency requirements • Multi-tiered training **Additional Training**: Met biweekly for ongoing training and burnout prevention.	Master's level social worker supervises 4-6 CHWs. Case management done by supervisor	Supervisor provided real-time support for safety, clinical, or psychosocial emergencies and caseload supervision. **Performance Evaluations**: • Recurring assessments weekly • Documentation review • Direct observation • Phone calls to patients to assess their experience.	Not reported	*Use standardized protocols/model of care* 1.) Patient education 2.) Counseling 3.) Notify supervisor of need for particular social service 4.) Goal setting & goal support
Islam et al. (2018)	DREAM Protocol & curricula comprised of elements from the NHLBI CHW training manual	Documentation required, reviewed by supervisor.	DREAM protocol:Accredited CHW training course completed at NYU School of Medicine. • DREAM curricula adapted from existing materials validated in minority communities (Islam et al., 2014)	Not reported	Details not reported. Study integrity assessed by researchers.	Not reported	*Use standardized protocols/model of care.* 1.) Patient education 2.) Counseling 3.) Navigation assistance
Redding et al. (2014)	AHRQ Pathways community HUB manual used as a guide.	Documentation required, reviewed by supervisor.	**Initial Training**: Trained at the local community college. CHAP developed an extensive CHW-specific training curriculum that was delivered for college credit. Core competency requirements and must remain up to date.	Physician or Registered Nurse	**Evaluation**: CHWs evaluated based on outcomes or completion of a pathway	CHWs paid base salary plus incentive payments	*Use standardized protocols/model of care* 1.) Patient education 2.) Case management 3.) Connect/refer patient to social services 4.) Social support

Rothschild et al. (2014)	MATCH CHW Model: *Promotoras de Salud* (Spanish translation of the CDC CHW training manual)	Documentation required, reviewed by supervisor.	**Initial Training**: CHWs received more than 100 hours of training on diabetes, behavioral self-management support, and home visiting (Swider, Martin, Lynas, & Rothschild, 2010). General diabetes training & self-management education (24 hours). **Ongoing Training:** Individual and group training sessions every 2 weeks, about 2 contact hours per week.	Psychologist & Study Investigators	Bimonthly individual consultation and direct supervision of each CHW.	Not reported, but cost-analysis was performed (See table 1).	*Use standardized protocols/model of care* 1.) Patient education 2.) Counseling 3.) Goal setting & goal support 4.) Navigation assistance
Systematic Reviews							
Kim et al. (2016) Systematic Review of 67 studies n=number of studies reporting the specific measure	Not reported	Not reported	CHW Training: Reported in 24 studies. Training ranged from 4 - 240 hours (average of 41.3 hours, median: 16.5 hours).	Study coordinator (n = 13) Case manager (n=13) CHW coordinators (n = 2) Study Psychologists (n = 2).	Supervision (n=8): meeting frequency ranged from weekly to monthly. CHW competency evaluation (n=9) and supervision procedures (n=24) were largely under-reported.	Hourly rates of CHWs from those reported (n=23) ranged from $12.11 per hour to $22.26 per hour.	Patient education (n=48) Counseling (n=36) Navigation assistance (n=21) Social support (n=18) Case management (n=4) Social Services (n=7)
Verhagen et al. (2014) Systematic Review of 7 studies n=number of studies	Not reported	Not reported	CHW Training: Not reported in 3 studies. CHW training courses ranged from 2.5 -7 days, with an average of 3.8 days of training.	Not reported in 5 of 7 studies. RN (n=1); Physician (n=1)	Not reported.	Not Reported	Patient education (n=7) Counseling (n=6) Navigation assistance (n=5) Social support (n=7) Case management (n=6) Social Services (n=7)

Appendix I

Sunrise Model to Depict Concepts within the Cultural Care Theory

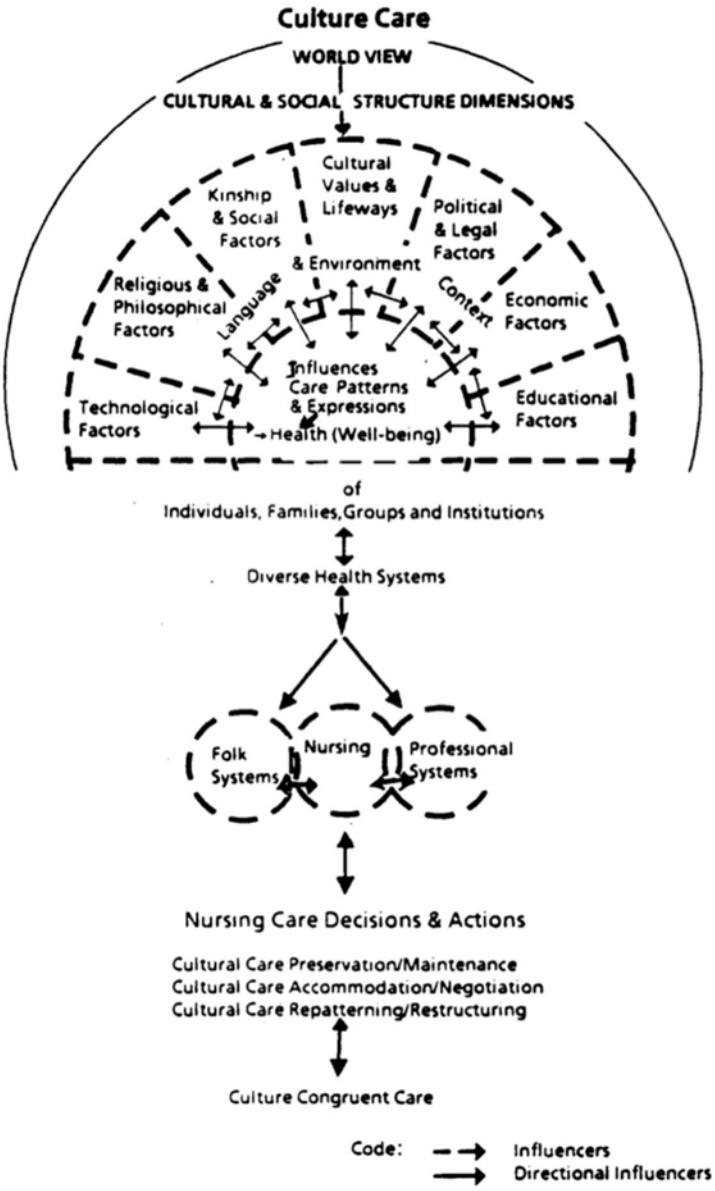


Figure 1. Sunrise model to depict dimensions of cultural care diversity and universality: A theory of nursing.

Figure 5. Sunrise model to depict dimensions of cultural care diversity and universality: A theory of nursing. A model of organizational performance and change. Reprinted from "Leininger's theory of nursing: Cultural care diversity and universality," by M.M. Leininger, 1988, *Nursing Science Quarterly, 1, 157.* Copyright 1988 by Williams and Wilkins.

Appendix J

Depiction of The Pathways Community HUB Model in the Organization

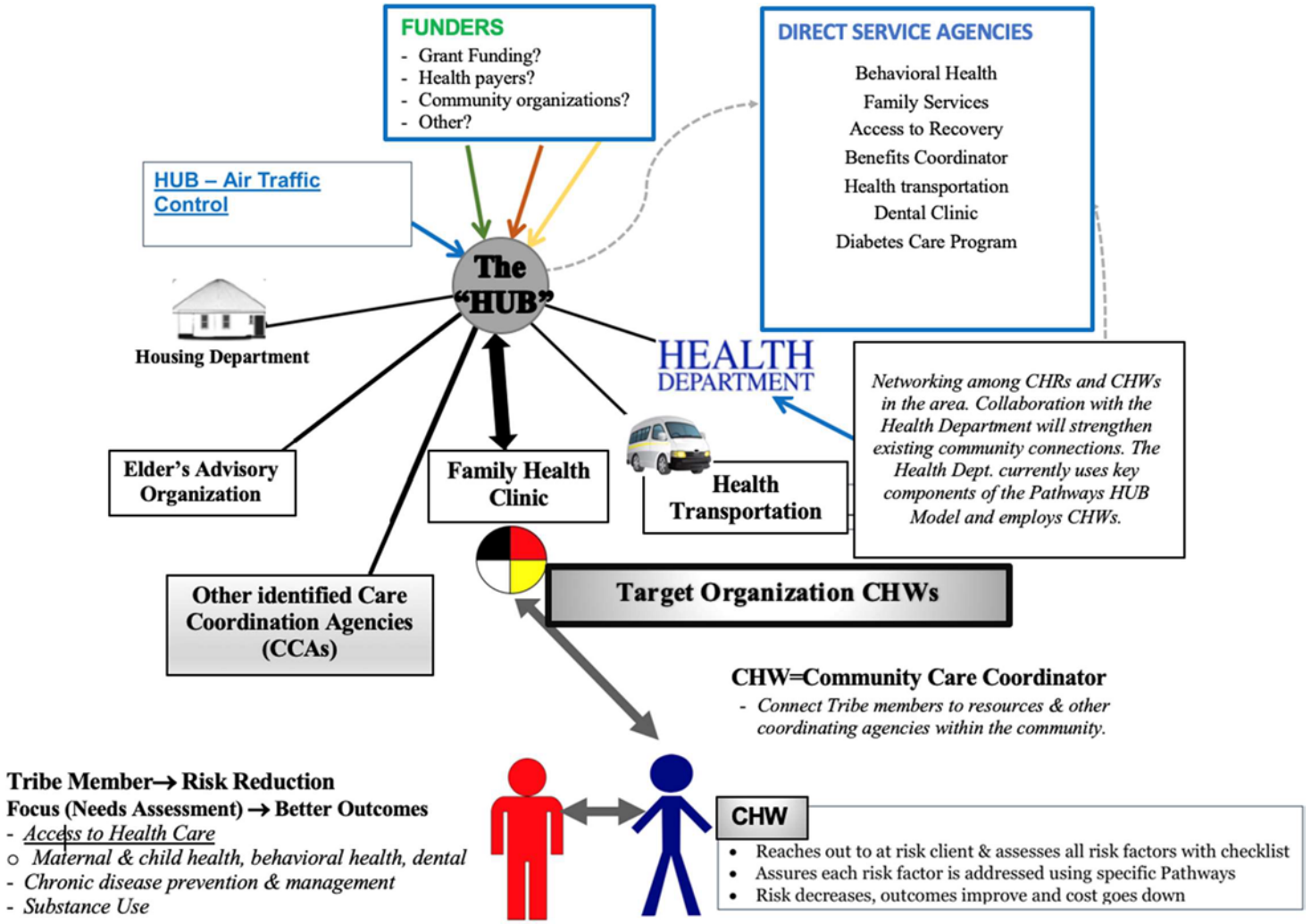
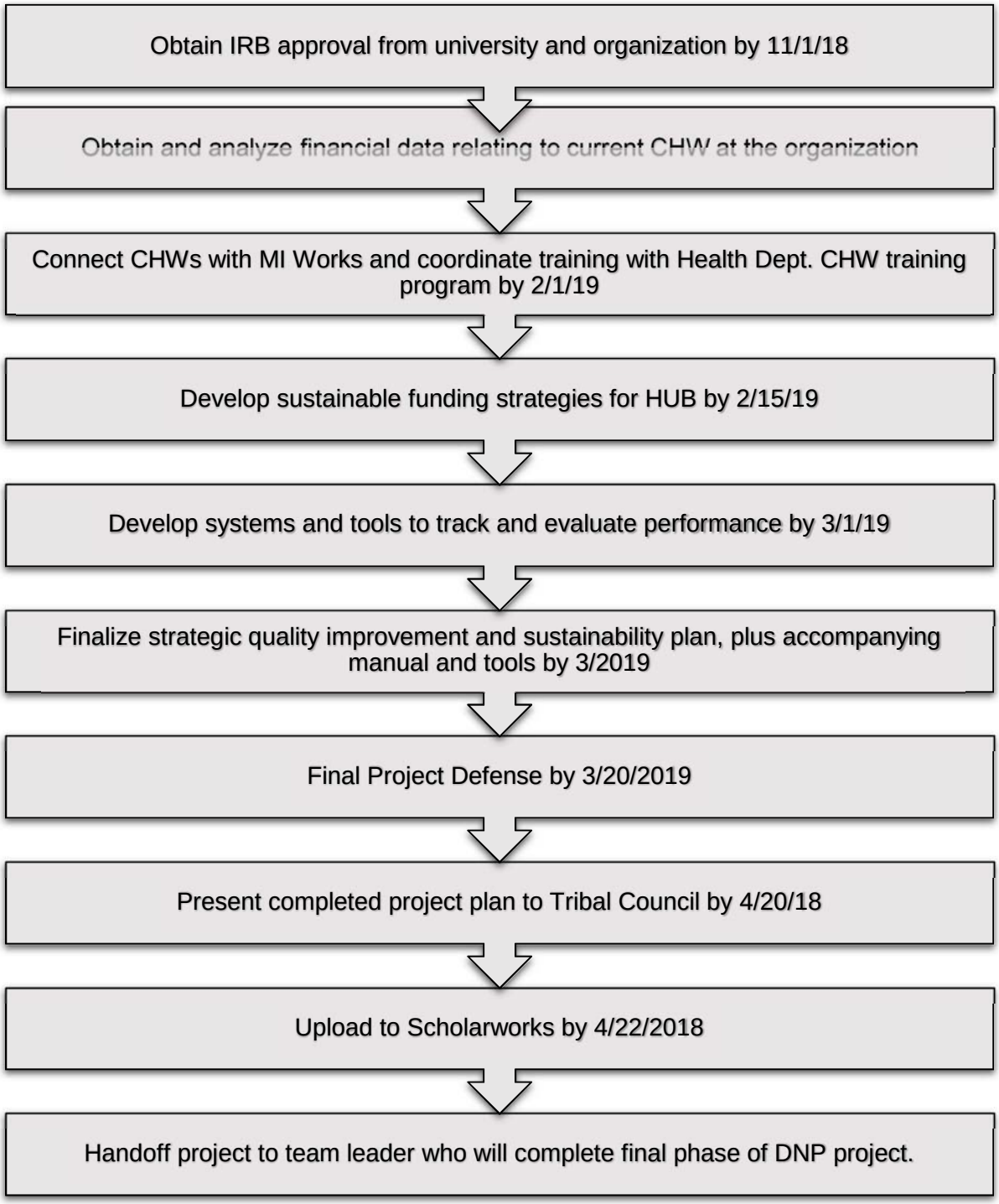


Figure 6. The Pathways Community HUB Model in the Context of the Project Setting.

Appendix K

Project Timeline



Appendix L

Project Objectives and Measures

Table 5. Project Objectives and Metrics

	Identified Need/Objective	Strategies to meet objective	Metric
1	***Demonstrate value of having CHWs as members of the health care team.***	Review ROI data from other CHW programs; CHW impact on Triple Aim. Complete a cost-benefit analysis.	☑ Include a table with ROI/cost-savings data from other CHW programs in final plan/presentation. Include discussion on CHW impact on Triple Aim. ☑ Completion of a CHW program cost-benefit analysis.
2	***Community Needs Assessment***	Review demographic data from the Tribe. Extrapolate secondary data from the regional Community Needs Assessment, Inter-Tribal Health Data Report, and any available health department CHW program data.	☑ Identify geographic areas within the CHW service area with higher density population & higher number of older adults. ☑ Include informed recommendations on CHW program focus. Cite data and recommendations in manual.
3	***Define CHW role and scope of practice***	Review organizational, state, and IHS policies regarding the CHW role and scope.	☑ Organizational, state, and IHS policies reviewed. ☑ Include clear definition of CHW role and scope in the final manual. ☑ Include a list of CHW roles and descriptions in the manual.
4	***CHW Training***	Identify a CHW training program that includes the 8 core competencies that will be required by health payers for future reimbursement of CHW services.	☑ Training program identified ☑ Include training program syllabus and description of competency requirements in the manual.
5	***Identify or create supporting tools and documents for care coordination.***	Develop or identify adequate consent/notice of privacy practice forms, intake assessment checklists and plan of care templates using examples provided in the Pathways HUB Quick start guide.	☑ Identify/create initial client screening tool, consent/notice of privacy practice. ☑ Intake assessment checklist and follow-up visit checklist ☑ Identify or develop plan of care templates to guide interventions and documentation.
6	***Develop tool/mechanism for CHW performance evaluation***	Identify or develop a tool that the CHW supervisor may use to track and evaluate CHW performance. Ensure that the tool is efficient and user friendly.	☑ Identify & describe CHW performance evaluation measures. ☑ Tool developed & CHW supervisor approves of tool. ☑ Tool has built-in equations with data points that are auto populated from the HUB tracking tool.
7	***Increase CHW Documentation Rates***	Identify a model of care coordination with a clear structure to guide CHW interventions and documentation. Include CHW documentation as a performance evaluation measure.	☑ Evidence-based model identified. Documentation tools identified and included in the manual. ☑ Documentation element included in CHW performance evaluation tool.
8	***Reduce CHW time spent completing client transports.***	Compile a list of transportation assistance resources that the CHW may refer to.	☑ Resource reference guide completed, printed and given to CHWs. ☑ Include cost-savings associated with reduction of CHW client transports.
9	***Quality improvement and sustainability plan.***	Identify or develop a tool that the organization may use to track client outcomes, CHW work output, program impact. Develop a tracking/ documentation tool that the organization may use in the future to submit to health payers for reimbursement CHW services.	☑ Outcome measures identified. ☑ Tracking tool developed/identified ☑ Development of a checklist or step by step plan to prepare for future contracts with health payers.

Appendix M

Visual Representation of the Steps Outlined in the Project Manual

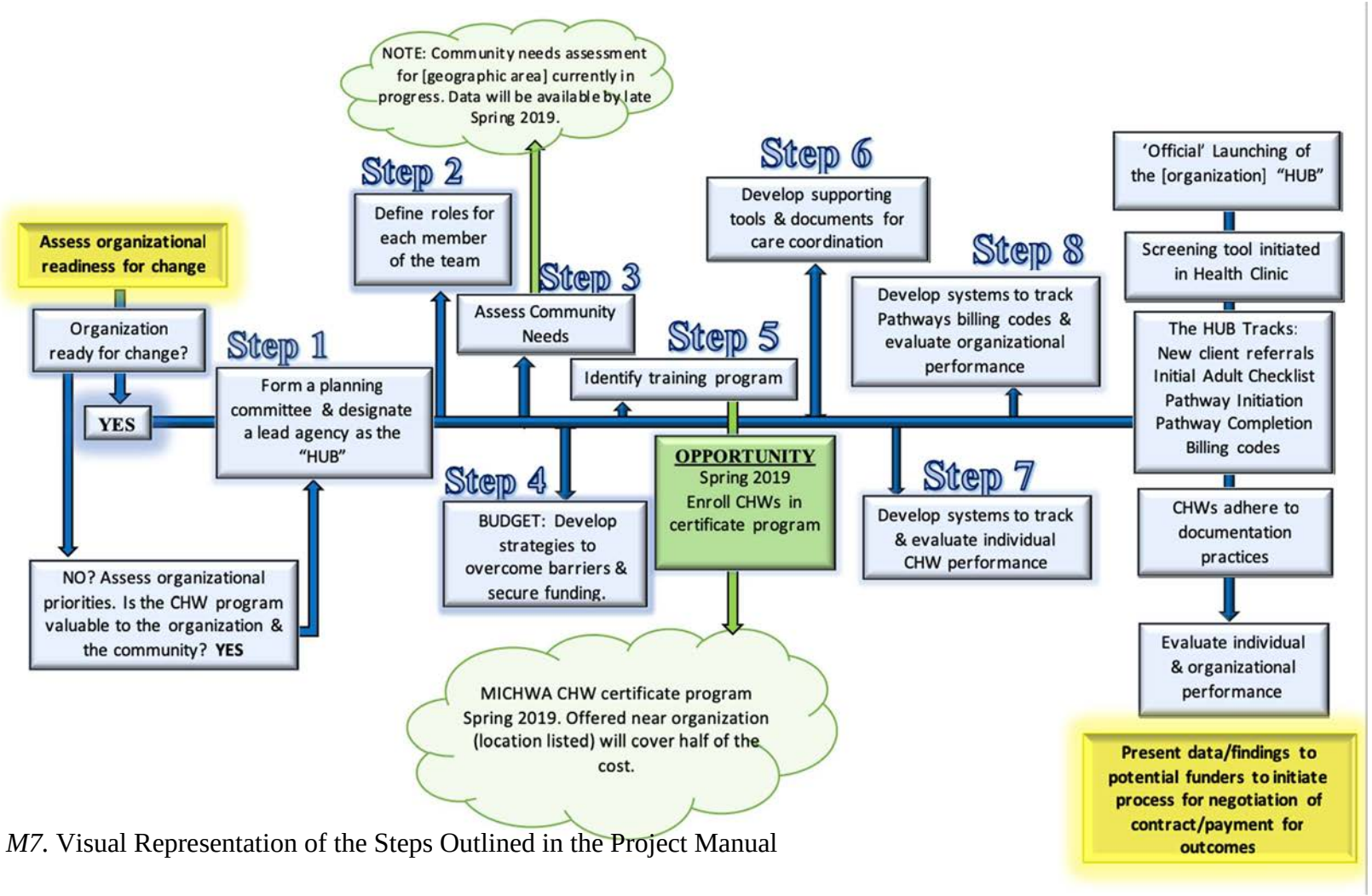


Figure M7. Visual Representation of the Steps Outlined in the Project Manual

Appendix N

DNP Project Budget

Table 6.

Revenue & Cost Mitigation	
Project Manager Time (in-kind donation)	12,000.00
Consultations	
Health Department APRN (in kind donation)	519.24
HUB #1- Regional Coordinator (in kind donation)	209.90
HUB #2 Regional Coordinator, HUB manager (in kind donation)	365.50
Cost mitigation	
20 standard Pathways, worksheets, & checklists (Open Source)	0.00
Binders to store Pathways materials and organization manual (in kind donation)	15.00
Printing costs of Pathways materials and organization manual (in kind donation)	21.60
Funding from state workforce development program for CHW training program*	2,260.00
Textbook required for training course (Included in cost for course)*	280.00
Conference room use	350.00
Revenue Source A- Potential Grant funding?	TBD
Revenue Source B- Downstream savings & potential future reimbursement of services	TBD
TOTAL INCOME	15,391.00
* Not included in total income	
Project Expenses	
Project Manager Time (in-kind donation)	12,000.00
Health Clinic Provider/CHR Supervisor (Site Mentor)	3,459.20
Health Department APRN (in kind donation)	519.00
HUB #1- Regional Coordinator (in kind donation)	209.90
HUB #2 Regional Coordinator, HUB manager (in kind donation)	365.50
Cost mitigation	0.00
20 standard Pathways, worksheets, & checklists (Open Source)	0.00
Binders to store Pathways materials and organization manual (in kind donation)	15.00
Printing costs of Pathways materials and organization manual (in kind donation)	0.00
Conference room use	350.00
TOTAL EXPENSES (To Date)	16,918.60
Net Operating Cost	3,459.40

Estimated Costs Associated with Proposed Changes	
CHR Time (x4 CHRs)- Training	8482.32
Cost of State CHW Registry Membership (x4 CHRs)	120.00
Cost of CHW Certificate Program (x4 CHRs)	4,520.00
*Funding from state workforce development program for CHW training program**	*-2,260.00*
TOTAL PROJECTED EXPENSES	10,862.32

Appendix O

Current CHW Program Costs

Table 7. Current Program Costs

Annual Costs for Current CHW Program	
CHW Wages	
Total Salary for 4.0 FTE CHWs	144,206.40
CHW Supervisor Wages	
CHW Supervisor (0.1 FTE as Supervisor)	9,984.00
**Potential Clinic Revenue Lost (Est. RVUs lost from time away. Est. 3 missed 99214 office visits/week)*	20,280.00
***CHW Fringe Benefits**	
Disability Benefits (financial data unavailable)	Data Unavailable
401k (financial data unavailable)	Data Unavailable
Health Insurance (financial data unavailable)	Data Unavailable
(Estimated cost to organization for fringe benefits) 4.0 FTE CHR Salary x 36%	51,914.31
Space Costs	
CHW Office County B	3,629.67
CHW Office County C	2,329.20
CHW Office County D	1,688.67
Supplies	
CHW Office phones (4 x 180.00)	720.00
Smart Phones (4 x 840.00)	3,360.00
**Basic office supplies (calculated at $1,000 per FTE)*	4,100.00
**Basic supplies for patient care and materials for health education (first-aid kit, educational handouts etc.)*	1,000.00
Fuel Costs	
CHW 1	2,829.60
CHW 2	4,359.76
CHW 3	1,213.18
CHW 4	5,255.60
Total CHW Program Costs	256,870.39
***Items in the budget with estimated cost (Data was unavailable)**	

Appendix P

Hospital Admission Costs

Table 8

Diagnosis-Related Group (DRG) Summary for Medicare Inpatient Payment at Regional Hospital	Full Cost of Admission	Average Total Medicare Payments (i.e. Medicare-like rate)	Cost Covered by Medicare for Medicare Recipients of Tribe (80%)	Cost to Tribe per DRG for Medicare Recipients (20%)	Cost to Tribe per DRG for Non-Medicare Recipients
CHRONIC OBSTRUCTIVE PULMONARY DISEASE	*$26,828.55*	*$9,029.14*	*$7,223.32*	**$1,805.83**	**$9,029.14**
BRONCHITIS & ASTHMA	*$19,360.53*	*$6,661.07*	*$5,328.85*	**$1,332.21**	**$6,661.07**
AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TO	*$66,289.18*	*$35,391.36*	*$28,313.09*	**$7,078.27**	**$35,391.36**
HEART FAILURE	*$29,020.24*	*$11,067.64*	*$8,854.12*	**$2,213.53**	**$11,067.64**
CHEST PAIN	*$16,059.44*	*$4,795.12*	*$3,836.10*	**$959.02**	**$4,795.12**
ACUTE MYOCARDIAL INFARCTION	*$38,282.88*	*$12,637.01*	*$10,109.60*	**$2,527.40**	**$12,637.01**
FRACTURES OF HIP & PELVIS	*$11,216.75*	*$5,261.42*	*$4,209.13*	**$1,052.28**	**$5,261.42**
AMPUTATION OF LOWER LIMB FOR ENDOCRINE, METABOL DIS	*$46,363.47*	*$15,618.33*	*$12,494.67*	**$3,123.67**	**$15,618.33**
DIABETES MELLITUS	*$33,791.68*	*$10,973.90*	*$8,779.12*	**$2,194.78**	**$10,973.90**
ALCOHOL/DRUG ABUSE OR DEPENDENCE W/O REHABILITATION	*$21,699.35*	*$5,259.90*	*$4,207.92*	**$1,051.98**	**$5,259.90**
MISC. SIGNS & SYMPTOMS	*$20,027.73*	*$7,449.64*	*$5,959.71*	**$1,489.93**	**$7,449.64**

Appendix Q

Community Demographics

Table 9. Community Demographics per County and Age Group

County	Total Number of Members Residing in Service Area *(% out of 1,894 members)*	Number of Members Age 0-20 per County (*% out of 1,894 members*)	Number of Members Age 21-54 per County *(% out of 1,894 members)*	Number of Members Age 55+ per County *(% out of 1,894 members)*	Percent out of Total Population (4,177 members)
A	84 *(4.44%)*	24 *(1.27%)*	48 *(2.53%)*	12 *(0.63%)*	2.01%
B	146 *(7.71%)*	22 *(1.16%)*	76 *(4.01%)*	48 *(2.53%)*	3.50%
C	192 *(10.14%)*	52 *(2.75%)*	79 *(4.17%)*	61 *(3.54%)*	4.59%
D	729 *(38.49%)*	183 *(9.66%)*	421 *(22.23%)*	125 *(6.59%)*	17.45%
E	715 *(37.75%)*	253 (13.36%)	331 (17.47%)	131 *(6.91%)*	17.12%
F	28 *(1.48%)*	2 *(.11%)*	16 *(.84%)*	10 *(0.53%)*	0.67%
1,894 total members inside 6-county service area		*536 (28.30%)*	*971 (51.27%)*	387 (20.73%)	*45.34%* of members live inside 6-county service area

Table 10. Community Demographics per Age Group

Age Category (Inside Service Area)	***Age 0-20***	***Age 21-54***	***Age 55+***
1,894 Total Members Live INSIDE 6-County Service Area *(Representing 45.34% of the Tribe)*	*536*	*971*	387
Percentage of Members in Age Category *(out of 1,894)*	*28.30%*	*51.27%*	20.73%
Percentage of Members in Age Category *(out of 4,177)*	*12.83%*	*23.25%*	9.27%
Age Category (Outside Service Area)	***Age 0-20***	***Age 21-54***	***Age 55+***
2,283 Total Members Live OUTSIDE 6-County Service Area *(Representing 54.66% of the Tribe)*	*444 (19.44%)*	*1340*	*499*
Percentage of Members in Age Category *(out of 2,283)*	*19.44%*	*58.69%*	*21.86%*
Percentage of Members in Age Category *(out of 4,177)*	*10.63%*	*32.08%*	*11.95%*

Appendix R

CHW Roles Supported by the State Community Health Workers Alliance

	Role	Description & Related Tasks
1	Case Management & Care Coordination	• Engaging and involving family members in care • Assessing individual strengths and needs • Addressing a family or individual's basic needs • Promoting health literacy • Goal setting and developing action plans • Coordinating client referrals and follow-ups • Providing feedback to primary healthcare providers
2	Community-Cultural Liaison	• Organizing the community • Client advocacy • Interpretation and translation of health needs/information • Assessing community needs and strengths
3	Health Promotion & Health Coaching	• Translating and interpreting health information • Teaching health promotion behaviors • Coaching on problem solving • Modeling behavior change • Promoting health literacy • Reducing harm • Promoting treatment adherence • Leading support groups
4	Home-Based Support	• Engaging family members/care givers in care • Assessment and home visiting • Supportive counseling • Coaching on problem solving • Implementing action plans • Promoting adherence to treatment
5	Outreach & Community Mobilization	• Recruitment and case-finding • Strengthening the community • Performing home visits • Advocating for community and individual clients • Promoting health literacy
6	Participatory Research	• Preparation and dissemination of data/ materials • Translational research facilitation • Web searches • Computerized data entry
7	System Navigation	• Interpreting and translating health information • Promoting health literacy • Assisting patient with health system navigation • Addressing basic needs (i.e. food and shelter) • Coordinating referrals and follow ups

.

Table 11. Adapted from: MiCHWA. (2018). *CHW role.* Retrieved from: http://www.michwa.org/wp-content/uploads/MiCHWA_CHWRoles_2014.pdf

Appendix S

HUB Outcome Tracking Tool Per CHW

Image 1. Screenshot of HUB Tracking Tool developed by the DNP student.

		CHR 1			OBUs	CHR 2			OBUs	CHR 3			OBUs	CHR 4			OBUs	Total
	Number of New Client Referrals																	
G9001/ A1	*Initial Adult Checklists Completed (9)																	
G9005/A1	Adult Checklist -Revisit (1)																	
G9012/PHQ	PHQ-9 (3)																	
G9012/FALL	Completed Fall Risk Assessment (3)																	
Total Home Visits																		
Total Risk Score of clients (Future)- TBD																		
Billing Code/Modifier	**PATHWAY (OBUs)**	Open	Closed	Finished Incomplete	OBUs	Open	Closed	Finished Incomplete	OBUs	Open	Closed	Finished Incomplete	OBUs	Open	Closed	Finished Incomplete	OBUs	
G9002 /AA	Adult Learning (6)																	
G9002 /AB	Adult Behaviorial Health Referral (4)																	
G9002 /AE	Health Education (1)																	
G9002 /AF	Employment (7)																	
G9002 /G1	Family Planning (5)																	
G9002 /AH	Health Insurance (5)																	
G9002 /AI	Housing (9)																	
G9002 /AM	Medical Home (3)																	
G9002 /AN	Medical Referral (1.5)																	
G9009 /AO	*Medication Assessment (4)																	
G9009 /AP	*Medication Management (10)																	
G9009 /AU	*Social Service Referral (3)																	
G9009 /AV	*Tobacco Cessation (6)																	
G9009 /RS	*Pregnancy (2)																	
G9009 /RR	*Post Partum (5)																	
G9009 /PD	*Developmental Screening (1.5)																	
G9009 /PC	*Developmental Referral (4)																	
G9009 /PL	*Lead Screening (1.5)																	
G9009 /PK	*Immunization Screening (3)																	
G9009 /PJ	*Immunization Referral (5)																	
TOTAL		0	0															

Standard High Risk G9002
*Higher Risk G9009
*This indicates that all members of the target population with this Pathway open or in progress are considered higher risk (versus standard high risk). The OBUs associated with all other Pathways listed are automatically calculated according to the standard high risk category.

Appendix T

HUB Outcome Tracking Tool

Image 2. Screenshot of HUB Tracking Tool developed by the DNP student.

Billing Code/Modifier	PATHWAY (OBUs)	Open Pathways To Date	Number Completed	Percent % Completed To Date	Number Finished Incomplete	Percent % Finished Incomplete	Number Outstanding Cases	Percent % Outstanding Cases
G9002 /AA	Adult Learning (6)	0	0	0.0%	0	0.0%	0	0
G9002 /AB	Adult Behaviorial Health Referral (4)	0	0	0.0%	0	0.0%	0	0
G9002 /AE	Health Education (1)	0	0	0.0%	0	0.0%	0	0
G9002 /AF	Employment (7)	0	0	0.0%	0	0.0%	0	0
G9002 /G1	Family Planning (5)	0	0	0.0%	0	0.0%	0	0
G9002 /AH	Health Insurance (5)	0	0	0.0%	0	0.0%	0	0
G9002 /AI	Housing (9)	0	0	0.0%	0	0.0%	0	0
G9002 /AM	Medical Home (3)	0	0	0.0%	0	0.0%	0	0
G9002 /AN	Medical Referral (1.5)	0	0	0.0%	0	0.0%	0	0
G9009 /AO	*Medication Assessment (4)	0	0	0.0%	0	0.0%	0	0
G9009 /AP	*Medication Management (10)	0	0	0.0%	0	0.0%	0	0
G9009 /AU	*Social Service Referral (3)	0	0	0.0%	0	0.0%	0	0
G9009 /AV	*Tobacco Cessation (6)	0	0	0.0%	0	0.0%	0	0.0%
G9009 /RS	*Pregnancy (2)	0	0	0.0%	0	0.0%	0	0
G9009 /RR	*Post Partum (5)	0	0	0.0%	0	0.0%	0	0
G9009 /PD	*Developmental Screening (1.5)	0	0	0.0%	0	0.0%	0	0
G9009 /PC	*Developmental Referral (4)	0	0	0.0%	0	0.0%	0	0
G9009 /PL	*Lead Screening (1.5)	0	0	0.0%	0	0.0%	0	0
G9009 /PK	*Immunization Screening (3)	0	0	0.0%	0	0.0%	0	0
G9009 /PJ	*Immunization Referral (5)	0	0	0.0%	0	0.0%	0	0
TOTAL		0	0	0.0%	0	0.0%	0	0.0%

Appendix U.

CHW Performance Evaluation Tool

Image 3. Screenshot of CHW Performance Evaluation Tool developed by the DNP student.

1.) Clients (30%)	**Quarter-**	Jan-March	April-June	July-Sept	Oct-Dec	
	# Clients					**# Clients:** Total number of clients per quarter (Carry # forward from initial checklists completed)
	Risk Quotient Score	0	0	0	0	**RiskQ Score**=: [# Clients x Risk Score of 2]
	Score Range (80-200)					
	Performance Score Percentage					***Performance Score %*** *: [Risk Quotient Score / Max Score (200)]*
	Performance Points					***Performance Points:*** *[Performance score % x Max Points (30)]*
	(Maximum Performance Points 30)					

2.) Risk Reduction= # of Pathways Completed - OBUs (40%)					
Quarter-	Jan-March	April-June	July-Sept	Oct-Dec	
OVUs					Measured based on the total number of OVUs produced within period of time evaluated.
Performance Score Percentage					***Performance Score %*** *: [Number of OVUs for quarter/Max OVU Performance Score (1000)]*
Performance Points					***Performance Points:*** *[Performance Score % x Max Points 40]*
(Max Points 40)					

3.) Quality Assurance- (15%)	**Documentation**				
Supervisor Sign off Scoring **Quarter-**	Jan-March	April-June	July-Sept	Oct-Dec	Score Based on: Checklists completed, appropriate documentation, accurately documented billing.
Average Score					**Score 3: Good** **Score 2: Fair** **Score 1: Poor** ***Score 0:*** *Requires remediation*
Performance Score Percentage					***Performance Score %:*** *[Average documentation score/ Max performance Score (3)]*
Performance Points					***Performance Points:*** *[Performance score % x Max Points (15)]*
(Max Points 15)					

4.) Home Visits- (15%)					
Quarter-	Jan-March	April-June	July-Sept	Oct-Dec	
Total Number of home visits					*Total Number of home visits per quarter*
Number of days site was open					*Total Possible business days open in 12 week period = 60 days*
Average Per/Day					**High:** 6 Visits/Day **Medium:** 4 Visits/Day **Low:** 2 Visits/Day
Performance Score Percentage					***Performance Score %:*** *[Average home visit score/ Max performance Score (6)]*
Performance Points					***Performance Points:*** *[Performance score % x Max Points (15)]*

Appendix V

CHW Documentation and Quality Assurance Tool

Image 4. *Screenshot of CHW documentation and quality assurance tool.*

CH R D ocumentation and Quality Assurance

Quarter: January-March	CHR 1	CHR 2	CHR 3	CHR 4
Week 1-2				
Week 3-4				
Week 4-5				
Week 5-6				
Week 6-7				
Week 7-8				
Week 8-9				
Week 9-10				
Week 10-11				
Week 11-12				
Average for Quarter				

Scoring is based on checklists completed, appropriate documentation, accurately documented billing and time.

Score =3: CHR is completing most of (>85%) of Checklists, documentation, and is accurately documenting billing. Documentation is appropriate.

Score =2: CHR is completing <85% of Checklists, documentation, *but is accurately documenting billing . Documentation is appropriate most of the time and CHR corrects documentation or billing as directed by supervisor.*

Score =1: CHR is completing minimal checklists/documentation, and is occasionally documenting billing.

Score=0: CHR is not regularly completing checklists, documentation, or billing.

Pathways to a Sustainable Community Health Worker Program in a Rural Native American Community

Hannah R. Duby

DNP Project Final Defense

March 20, 2019

Grand Valley State University
Kirkhof College of Nursing

Acknowledgements

- Advisor: Dianne Slager, DNP, FNP-BC
- Advisory Team: Cynthia Coviak, PhD, RN and Ali Saheb, DNP, NP-C

Objectives for Presentation

1.) Review the clinical problem: the scope of the problem and how it relates to the project.

2.) Summarize key findings from the organizational assessment and review of literature.

3.) Identify the project purpose and describe key steps and outcome measures outlined within the project plan.

4.) Discuss project outcomes and the measures taken to accomplish the project objectives.

Introduction to the Problem

- American Indian and Alaska Native (AI/AN) people have some of the greatest health inequities of any other citizen group in the United States[1]
- AI/AN people face higher rates of poverty, unemployment, violence, food insecurity and inadequate housing[2,3,4]
- Native Americans have higher rates of cardiovascular disease, obesity, diabetes, tobacco use, and infant mortality[2,4]
- Widespread socioeconomic and health disparities have contributed to an overall decreased life expectancy in AI/AN people, who now have the ***lowest life expectancy of any racial or ethnic group in the U.S***.[5,6]

Barriers to Care for AI/AN People

- Lower healthcare utilization rates
- Limited availability of specialized healthcare services within the Indian Health System (IHS)[3,7]
- Lack of adequate federal funding
- Critical shortage of healthcare providers[3]
- Personal and cultural factors

- The profound disparities in health outcomes, social determinants of health, quality and access to care in the AI/AN population highlight the necessity of culturally-relevant programs such as the Community Health Representative program[3,7]

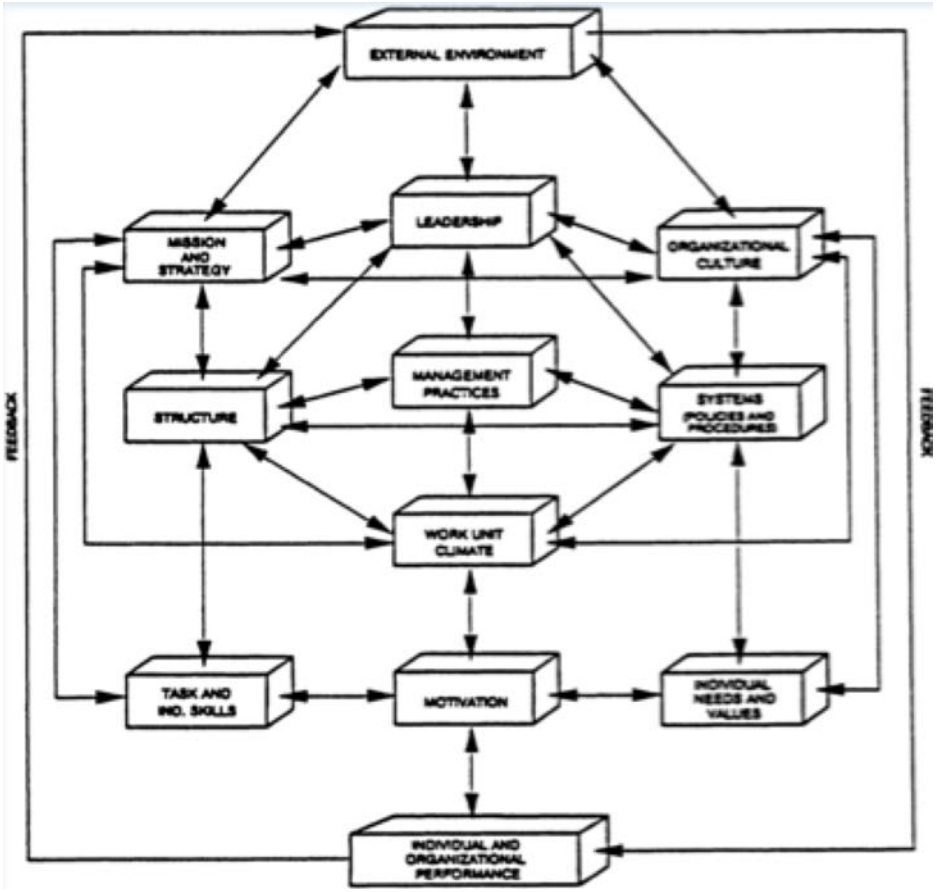
The Community Health Representative Program

- A community health representative (CHR), or a community health worker (CHW), is a trusted member of the community that has a close understanding of the cultural norms, language, and traditions within that community[9]
- CHWs provide culturally-sensitive preventative health services, health education, and follow-up care in rural and remote locations.
- CHWs play an important role in reducing disparities in the populations that they serve and have become essential members of Tribal health care team[9]

Threat: Program Funding and Sustainability

Organizational Assessment

Framework. Burke & L·tw·n[38]



Open-sy tern, causal model consisting of 12 variables that impact the performance of an organization and the organization s capacity for change.

Key Findings

- Limited CHW-specific training
- Lack of CHW documentation of care
- Lack of organization-specific data or metrics to evaluate CHW program impact on clinical and cost effectiveness.

Key Stakeholders

- The Doctor of nursing practice (DNP) student's advisory team
- Six Tribal Council members & the Tribal Manager
- The Clinic Health Director
- CHW supervisor/Clinic DNP
- Four CHWs
- Tribe members that utilize CHW services.

SWOT Analysis

Strengths

- CHW program supports mission of the Triba Council empowers community members, and facHitates comprehensive and culturally competent care.
- CHWs have strong ties to the community as they are all Tribe members.

Weaknesses

- CHWs have limitations in function and role based on current level of traming and education.
- CHW documentation deficit- o baseline data

Opportunities

- Regional health department has CHW program in place.
- Many patients have the potential to benefit from CHW program services.
- Community may benefit from overall cost savmgs

Threats

- FY2019 budget
- Limited mechanisms for reimbursement based on current level of CHW education.
- Limited population-specific data to support a business mode of care for CHW program.

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Review of Literature

Clinical Questions

1.) Does the evidence support the integration of CHWs into the health care team?

2.) What evidence-based model of care coordination can be replicated in a rural Native American CHW program to increase CHW accountability and program sustainability?

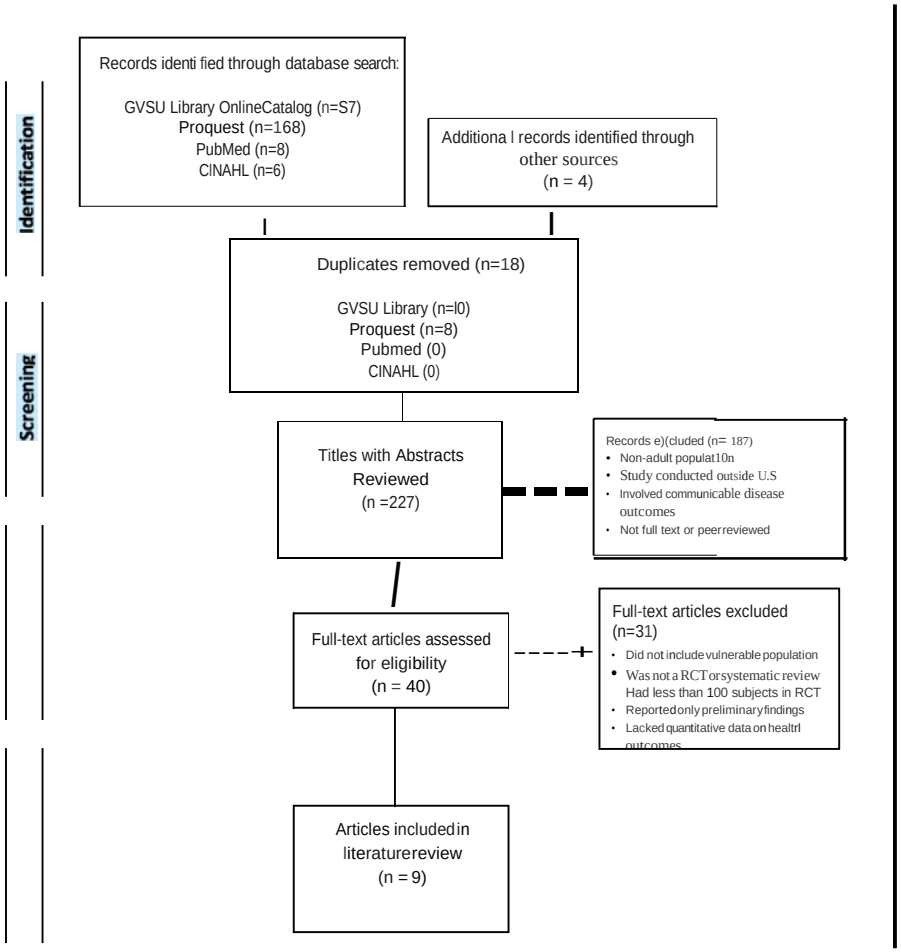
Review of Literature

- The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guideline served as the framework for the literature review[11]

- Nine papers met the inclusion criteria and were included in the literature review.

- The systematic reviews included in this paper are considered to be high quality evidence (Level I) in the evidence hierarchy, followed by individual RCTs and pre-post design studies (Level II)[12]

PRISMA Flow Diagram



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Does the evidence support the integration of CHWs into the health care team? YES

- CHWs facilitate access to health services, improve quality of care, and increase communication between patients and their providers, all of which are critical in reducing disparities in AI/AN people[3,19,20]

- CHW-delivered interventions appear to be effective in improving patient risk factor status and clinical outcome measures for health conditions in high-risk populations[13,14,15,16,17,18,19,20]

- Current evidence supports the CHW role and suggests that community care coordination models are an effective strategy to improve quality of care, reduce healthcare costs, and contribute to better health outcomes in high-risk populations with multiple chronic conditions[20,21,22]

What did the CHW programs in the reviewed studies have in common?

- Mandatory CHW training
  - Core competency requirements
- Supervision by a case manager or APRN
- Regular CHW performance evaluations
  - Mandatory documentation that is reviewed by a supervisor[21,22]

The Pathways Community HUB Model

- A community care coordination approach focused on reducing modifiable risk factors for high-risk individuals and populations[21,22]
- This innovative healthcare delivery model was designed for comprehensive identification and risk reduction using a culturally connected pay-for-performance approach[23]

Why was this model selected?

- Solid foundation of supporting evidence.[22, 23, 24, 25, 26, 27, 29]
- Clear guidelines for program replication in a variety of settings.
- Availability of free resources to guide planning, implementation and evaluation.
- Clearly defined CHW roles that fall within scope of practice.
- Availability of a Pathways-based CHW training program near the target organization.
- Close geographic proximity of several organizations utilizing the model.

Standardization & Payment for Outcomes

- Standardization of care delivery, documentation, and measurement of outcomes allows for the development of universal billing codes to tie payment to outcomes[21]
- The 20 standardized Pathways link billing codes to Pathway completion.
  - *Claims data is the preferred language of payers.*
- The HUB model measures CHW work output through calculation of Outcome-Based Units (OBUs) or Relative Value Units (RVUs).
  - *Many health payers follow a healthcare provider fee schedule using a RVUs to determine payments for thousands of health services*[21,34]
  - *OBUs function similarly to RVUs but place a greater emphasis on the outcomes, or closing of Pathways.*[23]

DNP Project Plan

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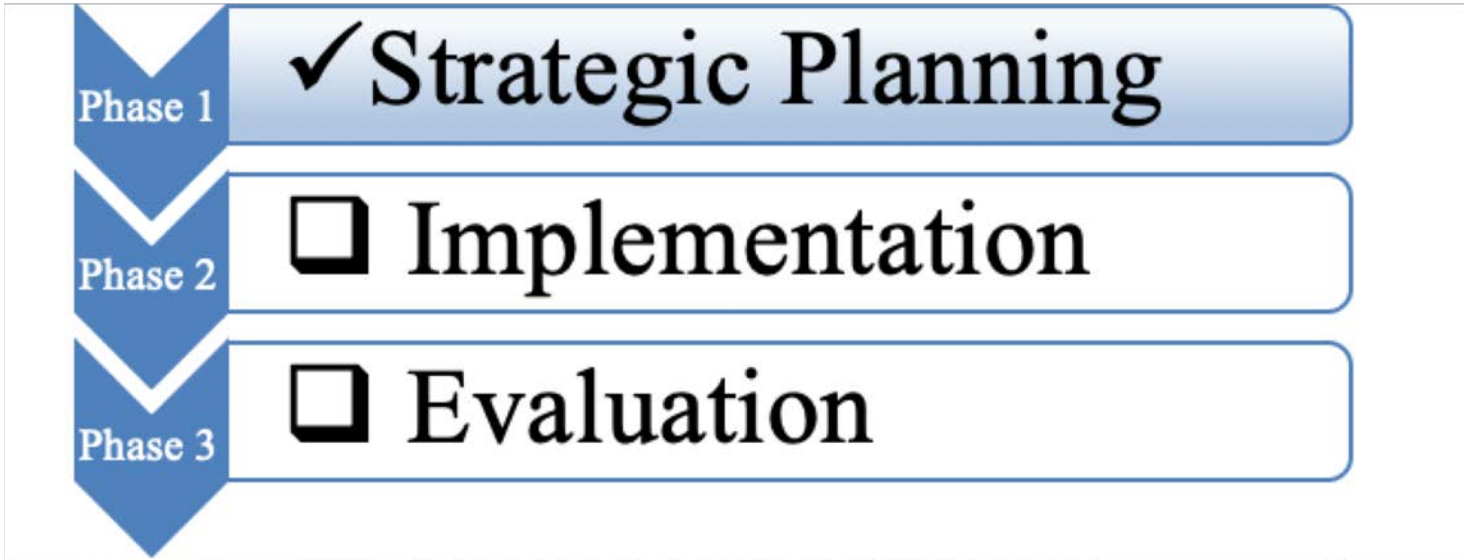
Project Purpose

- **Project Purpose:** Develop a strategic plan to increase efficiency and sustainability of the CHW program of interest.
  - This project included strategies on how to implement and sustain an evidence-based model of community care coordination in the identified Midwest Indian Health Service facility.
- **Long-term goals**: Improve care coordination and program sustainability.

Design & Scope of the Project

The overall project is a multi-phase quality improvement project involving replication of the Pathways Community HUB model in the target organization.



This DNP project represents phase 1 of the overall project.

Setting & Participants

Project setting: A rural Indian Health Service facility in the Midwest region of the United States.

Participants: The Health Clinic Director, the CHW supervisor/clinic DNP, four CHWs, six members of the Tribal Council, the Health Officer of the Regional Health Department, and members of the Clinical Community Linkages work group.

IRB Approval

j)··

Special Session of October 31, 2018

I hereby certify as the Tribal Council Secretary that the foregoing Motion was Approved and Adopted at the Special Session of the

CHR Business Plan

Motion made by Tribal Council Member Napont and Supported by Tribal Council Secretary- to adopt Resolution #18-36.3041

4-FOR; 0-AGAINST; 2-ABSENT); 0-ABSTAINING
Motion Carries

TRIIIAI, COUNCIL RI SOI,UTION
RcsoluLion #18-36 .3041

Authorizing Kirklwf Co/fege of I\i11rsing Student Rese«rd , Pmjecr

WHEREAS , became a fcdcra lly-rccognizcd Indian Tribe having a government-to- government relationship with the United Stat es effective May 27, 1980 (45 Fed. Reg. }83 21-3 22 (Ma rch 25, 1 980)); and

\VHE.REAS: is organized under a Tribal Constitution approved by the Secretary of the Interior on March 29, 1988; and

WHEREAS:

WHEREAS: Artidc IV; Section (l)(a) oft he Tribal Constitution empowers the Tribal Council "[t]o promote and protect the health, education, and general welfare of the Band and its members;" and

WHEREAS: Article IV, Sect io n (l)(h) oftheTribal Constitution e mpowers the Tribal Council "[t)o manage and control the economic affairs, enterprises, property, and all other inten,:st.s ofthe Band;" and

WHEREAS: On May 25, 2016, the Tribal Council app roved the Affiliatio n Agreement with the Grand Valley State Univers ity KirkhofCollcge of Nursing, to enable stud,.,,11 ofthc Un\vt,n;ity to work in the 's Clinic and other facililie ; and

\VIIEREAS: Under the direction of the : Band's Doctor of Nurse Practitioner, a Dodorute ofNur.,,;;: I' ni1;titiom;:r student as igned lo ı 's Clinic pursuant to tile agn::emenl is developing a procedure manual and prcsCiltation witli the objective of enhancing the connection between tribal members and resources: and

WHEREAS: The materials would facilitate, ıpotential adoption of the Pathways Model, but impose no obligation on \, and provide valuable in fonnati on related to - ·. provision orhcalLh crvices to iLs members and other eligihle indi viduals; and

Page 2: Resoh.ition µ..Hl-36.3 041

WHEREAS: J'hc slu<lenl's dissertation and any othLTpLiblie doc!:lmmt s will rLw ovc site-identifying infonnmtion, anonymizing ▫ hy refeni ng Lo lhe Clinic as an Indian llealth Service facilily locaLOO in Lhe Midwest; am.1

WHEREAS: The right to ownership and control over dala collcle<l and oompilcd in lhe coun;c of the project remains with- , and all data will he relinquished to for ownership following completion of the disse rtation project; and

WHEREAS: The GVSU Institutional Review Board requires 's written permission as a precondition to approving the student's dissertation project; NOW

TIIEREFORE BE IT RESOLVEll that, in recogn ition of the value and benefit of the nursing student's project, the Tribal Council of the Indians autho rizes the nursing student's research activities within the scope of the student's assignment under the Affiliation Agreement;

BE IT FURTHER RESOLVED that the Tribal Council grants to Doctor of Nursing Practitioner the discretion to authorize the student's use for research purposes of specific infonnation including but not limited to organizational structure, common diagnoses aud health needs, [)Olicies and procedures, and costs associated with Community Health Resou rce Program.

AI'PROVED: ADOI'Tt:ll:

CERTIFICATION

As Secretaiy of the Tribal Council c
I hereby certlt)' that the above resolu tion was approved and adopted at a Special Session of the Tribal Council held ir October 31, 2018 by a vote of
_!d_ FOR, _Q_ AGAr.-JST, _Q_ ADSTAINfNG, and AJ3S1::NT .

ATTEST:

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Theoretical Framework: Cultural Care Theory

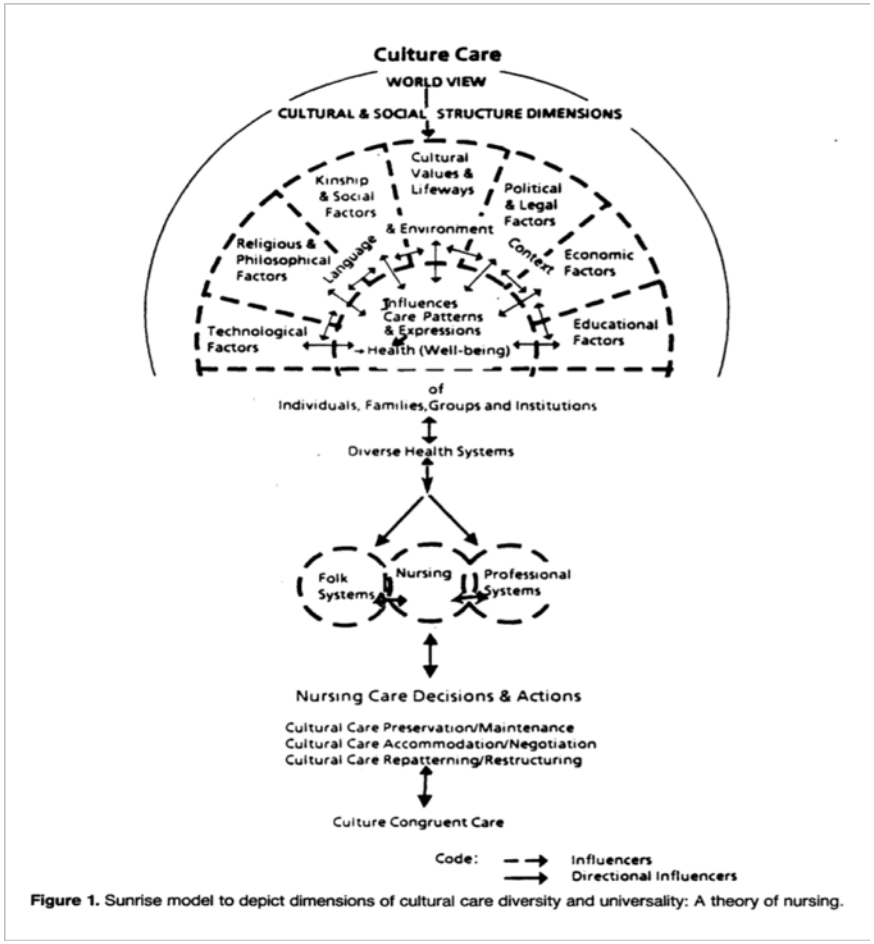


Figure 1. Sunrise model to depict dimensions of cultural care diversity and universality: A theory of nursing.

Margaret Leininger's CCT as depicted by the sunrise model[30,31]

Cultural Care Theory

Cultural Care Theory (CCT) Goal: Provide and maintain culturally congruent care[30,31]

Action Modality 1 *Cultural care preservation*

- One of the overarching goals of both the CCT and this DNP project[30,31]

Action Modality 2 *Cultural Care Accommodating/Negotiating*

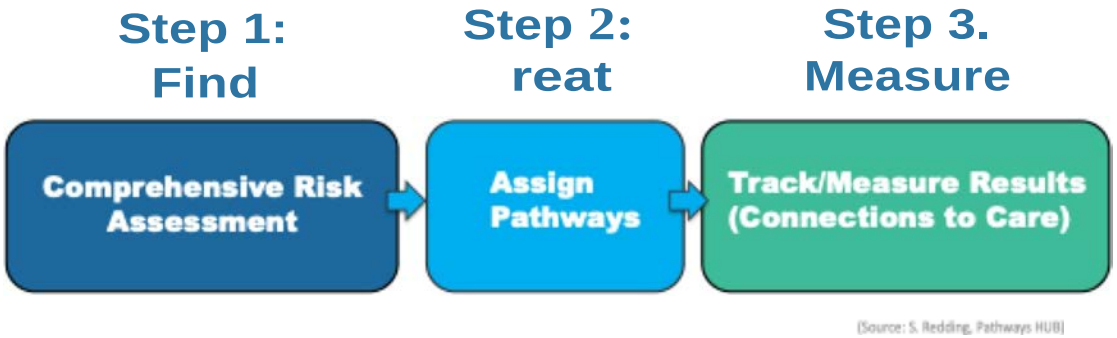
- Accommodating actions to respect and support cultural traditions.

Action Modality 3 *Cultural Care Repatterning/Restructuring*

- Supportive professional actions and mutual decisions that facilitate organizational change.

The Pathways Community HUB Model

Fou dation Of the odel



Find: Find and engage the most vulnerable ·ndividuals in the community.[21] Comprehensively identify each of their risk factors.

Treat: Each risk factor identified is assigned a specific Pa hway. [21]

Measure: As risk factors are addressed, the Pathways are completed and a reduction in risk is recorded. [21]

What is a Pathway?

➢ **A Guide for CHWs**

- Pathways are designed to outline key interventions or actions required to achieve a desired outcome.[21,23]

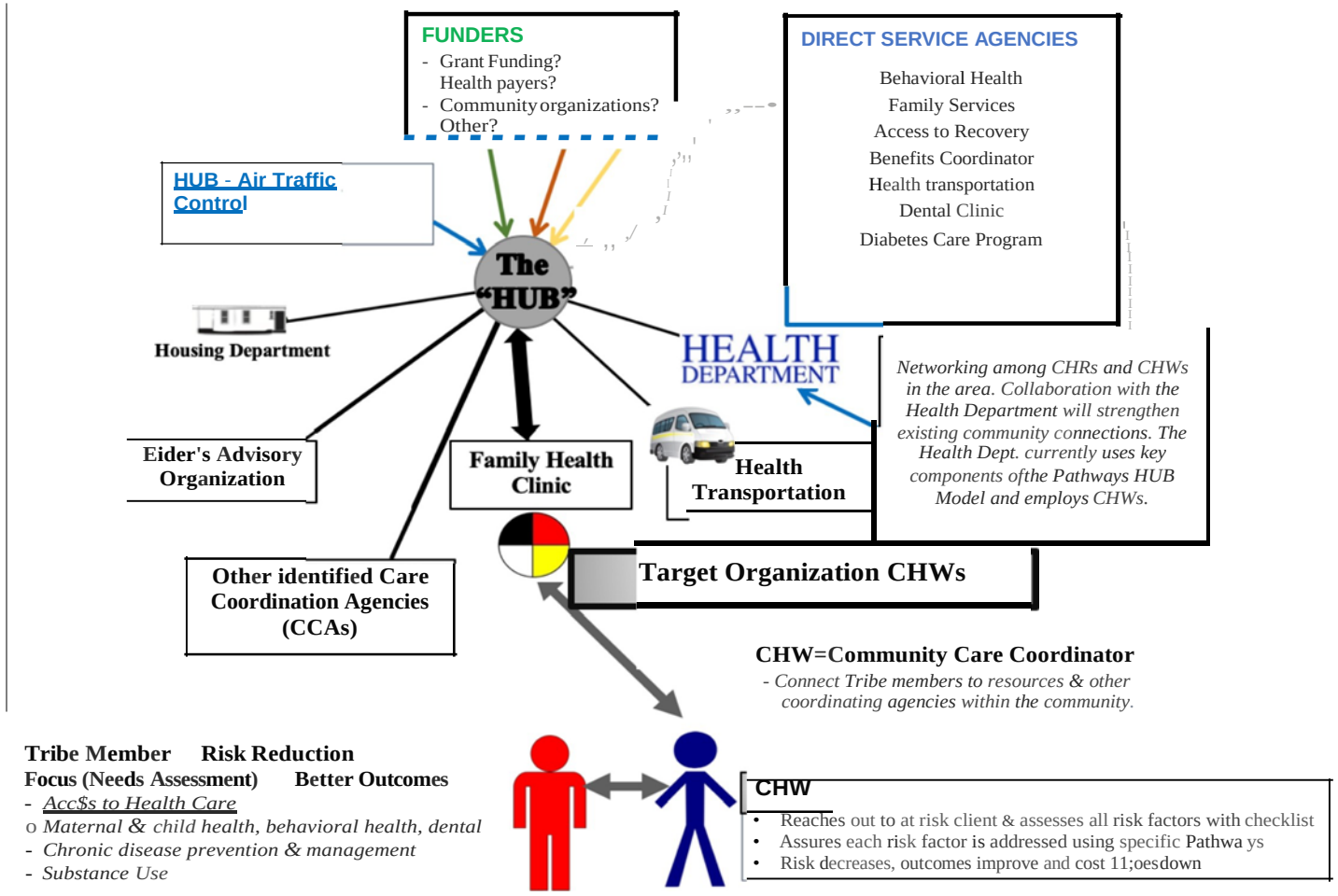
➢ **Standardized Outcome Measurement Tool**

- Used to confirm that the intervention has been received and that the risk factor has been addressed.[21,23]

➢ **Quality Assurance Measure and Payment Tool**[21]

- Each Pathway is monitored by the organization to ensure that outcomes have improved.[21]
- Billing codes associated with Pathway completion.

Example of the Model within the Organization



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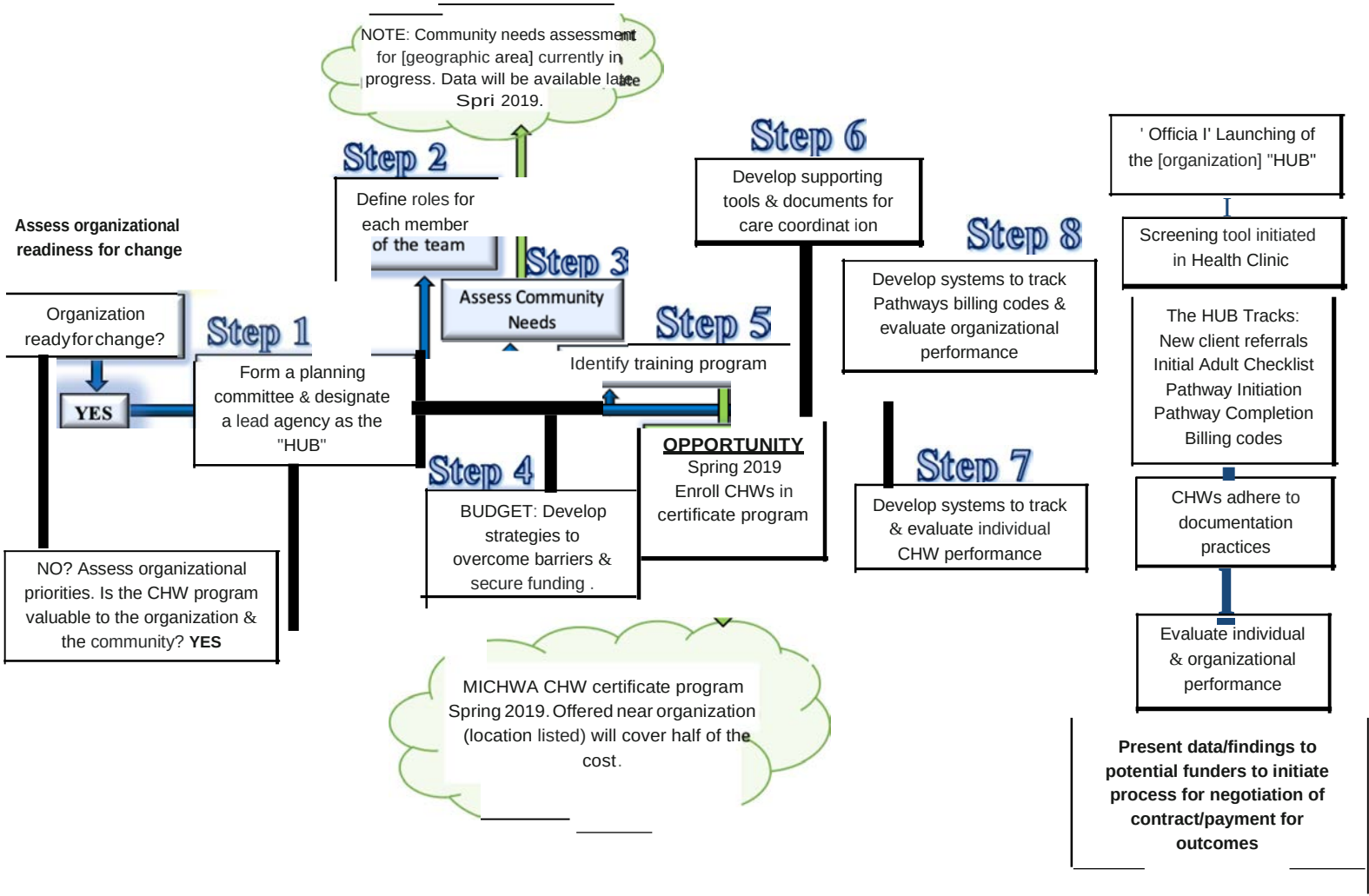
The Pathways Community HUB Manual[21]

Step 1: Form a planning group & designate a lead agency
Step 2: Complete community needs assessment.
Step 3: Develop strategies to overcome barriers. Secure funding.
Step 4: Determine initial focus of outcomes & related Pathways
Step 5: Create supporting tools and documents.
Step 6: Develop sustainable funding strategies for HUBs.
Step 7: Develop systems to track and evaluate performance.
Step 8: Train and organize HUB staff.

The steps outlined in the Pathways HUB Manual were used to guide the steps included in the manual. See visual representation on the following slide

Steps Outlined in Project Manual



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Project Outcome Measures

- Progress and success of the project was measured by completion of the individual objectives will described in detail in the following ‘Project Outcomes’ section.

- The final output: Detailed strategic plan tailored to the target organization, which stakeholders may use to guide implementation.

Project Outcomes

Objective 1

Identified Need/Objective	Strategies to meet objective	Metric
Demonstrate value of having CHWs as members of the health care team.	Review ROI data from other CHW programs Identify CHW impact on Triple Aim. Complete a cost-benefit analysis.	✓ Include a table with ROI/cost-savings data from other CHW programs in final plan/presentation. ✓ Describe CHW impact on Triple Aim and include in manual and final presentation. ✓ Completion of a CHW program cost-benefit analysis. **Partially met.**

Potential Cost-savings and ROI

Evidence suggests that the costs associated with replication of an evidence-based model of care coordination is a worthwhile investment.

Some of the Evidence:

- Fedder and colleagues saw a ***38% reduction in ER visits, 53% reduction in ER admissions, and a 30% reduction in total hospital admissions***. This led to a total cost savings of $262,080 for 117 patients[25]

- Whitley and colleagues (as cited in MiCHWA, n.d) saw a reduction in urgent care and inpatient admissions, which contributed to a ROI of $2.28 per dollar spent.

- Redding et al. (2014) estimated a long-term ROI of $5.59 per each dollar invested.

CHWs and the Triple Aim

Experience of Care

- CHWs strengthen the connections between vulnerable populations and health and human service systems through delivery of ***culturally competent care*** and ***regular communication*** with health providers[25]

Improving Health of the Population

- There is an abundance of evidence to support the claim that trained CHWs contribute to improved health outcomes, lower disease burden, and promote positive behavioral and physiological change[25]

Lowering Per Capita Cost

- Integration of trained CHWs into care teams has also been shown to decrease emergency department utilization rates and lower per capita healthcare costs[21,22,23,24,25]

The Institute for Health Care Improvement Triple Aim is a framework that describes an approach to optimizing health system performance.[25]

Total Cost of Current CHW Program

Annual Costs for Current CHW Program	
CHW Wages	
Total Salary for 4.0 FTE CHWs	144,206.40
CHW Supervisor Wages	
CHW Supervisor (0.1 FTE as Supervisor)	9,984.00
**Potential Clinic Revenue Lost (Est. RVUs lost from time away. Est. 3 missed 99214 office visits/week)*	20,280.00
***CHW Fringe Benefits**	
Disability Benefits (financial data unavailable)	Data Unavailable
401k (financial data unavailable)	Data Unavailable
Health Insurance (financial data unavailable)	Data Unavailable
(Estimated cost to organization for fringe benefits) 4.0 FTE CHR Salary x 36%	51,914.31
Space Costs	
CHW Office County B	3,629.67
CHW Office County C	2,329.20
CHW Office County D	1,688.67
Supplies	
CHW Office phones (4 x 180.00)	720.00
Smart Phones (4 x 840.00)	3,360.00
**Basic office supplies (calculated at $1,000 per FTE)*	4,100.00
**Basic supplies for patient care and materials for health education (first-aid kit, educational handouts etc.)*	1,000.00
Fuel Costs	
CHW 1	2,829.60
CHW 2	4,359.76
CHW 3	1,213.18
CHW 4	5,255.60
Total CHW Program Costs	256,870.39
***Items in the budget with estimated cost (Data was unavailable)**	

Potential Cost Savings to Organization[39]

Diagnosis-Related Group (DRG) Summary for Medicare Inpatient Payment at Regional Hospital	Full Cost of Admission	Average Total Medicare Payments (i.e. Medicare-like rate)	Cost Covered by Medicare for Medicare Recipients of Tribe (80%)	Cost to Tribe per DRG for Medicare Recipients (20%)	Cost to Tribe per DRG for Non-Medicare Recipients
CHRONIC OBSTRUCTIVE PULMONARY DISEASE	*$26,828.55*	*$9,029.14*	*$7,223.32*	**$1,805.83**	**$9,029.14**
BRONCHITIS & ASTHMA	*$19,360.53*	*$6,661.07*	*$5,328.85*	**$1,332.21**	**$6,661.07**
AMPUTATION FOR CIRC SYS DISORDERS EXC UPPER LIMB & TO	*$66,289.18*	*$35,391.36*	*$28,313.09*	**$7,078.27**	**$35,391.36**
HEART FAILURE	*$29,020.24*	*$11,067.64*	*$8,854.12*	**$2,213.53**	**$11,067.64**
CHEST PAIN	*$16,059.44*	*$4,795.12*	*$3,836.10*	**$959.02**	**$4,795.12**
ACUTE MYOCARDIAL INFARCTION	*$38,282.88*	*$12,637.01*	*$10,109.60*	**$2,527.40**	**$12,637.01**
FRACTURES OF HIP & PELVIS	*$11,216.75*	*$5,261.42*	*$4,209.13*	**$1,052.28**	**$5,261.42**
AMPUTATION OF LOWER LIMB FOR ENDOCRINE, METABOL DIS	*$46,363.47*	*$15,618.33*	*$12,494.67*	**$3,123.67**	**$15,618.33**
DIABETES MELLITUS	*$33,791.68*	*$10,973.90*	*$8,779.12*	**$2,194.78**	**$10,973.90**
ALCOHOL/DRUG ABUSE OR DEPENDENCE W/O REHABILITATION	*$21,699.35*	*$5,259.90*	*$4,207.92*	**$1,051.98**	**$5,259.90**
MISC. SIGNS & SYMPTOMS	*$20,027.73*	*$7,449.64*	*$5,959.71*	**$1,489.93**	**$7,449.64**

Cost savings associated with a reduction in the rate of preventable hospital admissions.

Objective 2

Identified Need/Objective	Strategies to meet objective	Metric
Community Needs Assessment	Review demographic data from the Tribe. Extrapolate secondary data from the regional Community Needs Assessment, Inter-Tribal Health Data Report, and any available health department CHW program data.	✓ Identify geographic areas within the CHW service area with higher density population & higher number of older adults. ✓ Include informed recommendations on CHW program focus. Cite data and recommendations in manual.

Community Needs Assessment

2016 Regional Community Health Assessment:

- Top Community Health Problems (Provider survey): Overweight and obesity; Substance use; Mental health issues; Lack of access to health care; Tobacco use.[41]

State Tribal Health Data Report:

- The Top AI Health Problems: Tobacco use, Obesity, Physical inactivity, Cancer, Chronic disease.[40]

Health Department/Data:

- ***51.4%*** of all ER visits by patients enrolled in Medicaid were preventable or avoidable.[20]
- Top five client needs: Access to care, health education, utility assistance, housing, and food assistance.

Community Profile

- There are 4,177 total members in the Tribe.
- Approximately 55% of Tribe members live outside of the service area, meaning that on y 45% or 1,894 members live inside the six-county ser·v ce area, [42]

County	Total u ber of Members Residing in Serv.ice Area *(% out o 1, 94 member-.1')*	umber of Members Age 0-20 per County *% uuJ of **1,894** members)*	Number of Members Age 21-54 per County *(% uuJ of 1, 94 members)*	umber of Members Ag *55* per County *("A, out of I , **94 members**)*	Percent out of Totail PopuJation (4, I 77 member
A	*4(4.44%)*	24 *(1.27%)*	4 *(2.53%)*	*(0.63%)*	1%
B	146 *(7.71%)*	22 *(1.16%)*	76 *(4.01%)*	48 *(2.53%)*	3.50%
C	192 *(10.14%)*	52 *(2.75%)*	79 *(4.17%)*	61 *(3.54%)*	4.59%
D	729 *(3 .49%)*	183 *(9.66%)*	421 *(22.23%)*	125 *(6.59%)*	17.45%
E	715 *(37.75%)*	253 (] 3.36%)	331 (] 7.47%)	131 *(6.91%)*	17.12%
F	*28(1.48%)*	*2 (.11%)*	16 *(.84%)*	10 *(0.53%)*	0.67%
1,894 total member insid 6-county s ervke area		*536 (28.30%)*	*971 (51.27%)*	387 20.73%	*45.34%* of member Ji e insid 6-county service area

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Objective 3

Identified Need/Objective	Strategies to meet objective	Metric
Define CHW role and scope of practice	Review organizational, state, and IHS policies regarding the CHW role and scope.	✓ Organizational, state, and IHS policies reviewed. ✓ Include clear definition of CHW role and scope in the final manual. ✓ Include a list of CHW roles and descriptions in the manual.

Define CHW Role[43]

1. Case Management & Care Coordination
2. Community-Cultural Liaison
3. Health Promotion & Health Coaching
4. Home-Based Support
5. Outreach & Community Mobilization
6. Participatory Research
7. System Navigation

Objective 4

Identified Need/Objective	Strategies to meet objective	Metric
CHW Training	Identify a CHW training program that includes the 8 core competencies that will be required by health payers for future reimbursement of CHW services.	✓ Training program identified ✓ Include training program syllabus and description of competency requirements in the manual.

Michigan Community Health Worker Alliance (MiCHWA) CHW Certificate Program

1. Role, Advocacy and Outreach
2. Communication Skills and Cultural Competence
3. Organization and Resources: Community and Personal Strategies
4. Teaching and Capacity Building
5. Legal and Ethical Responsibilities
6. Coordination, Documentation and Reporting
7. Healthy Lifestyles
8. Mental Health

CHW Training Program

OPPORTU ITY: *Collaboration with the Health Department*

- Location
- Lower cost
- Networking with other local CHWs.
- Standardized training program designed for the CHW profession.[26]
- Certification and registration as a **CHW.**[26]
  - Preparing for the future and the potential for egis ation recognizing CHWs
  - ***WiJI be required to develop future contracts with health***

Estimated Costs Associated with Proposed Changes

CHRTi me (x4 CHRs)- Trai n i ng	8482.32
Cost of State CHW Registry Memhership (x4 CHRs)	120.00
Cost of CHW Cert ifi ca e Program x4 CHRs)	4,520.00
Funding from state workforce development program for CHW training progr am	-:2,.260.00
TOTAL PROJECTED EXPENSES	10,862.32

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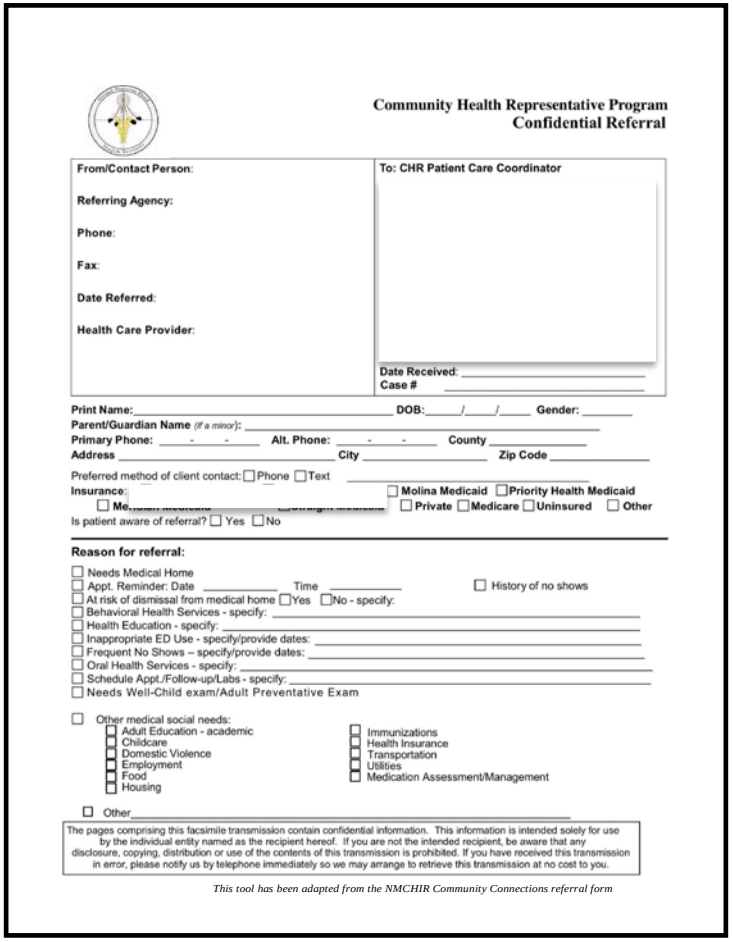
Objective 5

Identified Need/Objective	Strategies to meet objective	Metric
Identify or create supporting tools and documents for care coordination.	Develop or identify adequate consent/notice of privacy practice forms, intake assessment checklists and plan of care templates using examples provided in the Pathways HUB Quick start guide.	✓ Identify/create initial client screening tool, consent/notice of privacy practice. ✓ Intake assessment checklist and follow-up visit checklist ✓ Identify or develop plan of care templates to guide interventions and documentation.

Initial Referral and Screening Tools



Community Health Representative Program
Confidential Referral

From/Contact Person:	To: CHR Patient Care Coordinator
Referring Agency:	
Phone:	
Fax:	
Date Referred:	
Health Care Provider:	
	Date Received: _____
	Case # _____

Print Name:_____ DOB:____/____/____ Gender: _____
Parent/Guardian Name *(If a minor)*: _____
Primary Phone: ___-___-___ Alt. Phone: ___-___-___ County _____
Address _____ City _____ Zip Code _____

Preferred method of client contact: ☐ Phone ☐ Text _____
Insurance: ☐ Molina Medicaid ☐ Priority Health Medicaid
☐ Me... ☐ ...ghan Medicaid ☐ Private ☐ Medicare ☐ Uninsured ☐ Other
Is patient aware of referral? ☐ Yes ☐ No

Reason for referral:

☐ Needs Medical Home
☐ Appt. Reminder: Date _____ Time _____ ☐ History of no shows
☐ At risk of dismissal from medical home ☐ Yes ☐ No - specify:
☐ Behavioral Health Services - specify: _____
☐ Health Education - specify: _____
☐ Inappropriate ED Use - specify/provide dates: _____
☐ Frequent No Shows – specify/provide dates: _____
☐ Oral Health Services - specify: _____
☐ Schedule Appt./Follow-up/Labs - specify: _____
☐ Needs Well-Child exam/Adult Preventative Exam

☐ Other medical social needs:
- ☐ Adult Education - academic
- ☐ Childcare
- ☐ Domestic Violence
- ☐ Employment
- ☐ Food
- ☐ Housing
- ☐ Immunizations
- ☐ Health Insurance
- ☐ Transportation
- ☐ Utilities
- ☐ Medication Assessment/Management

☐ Other_____

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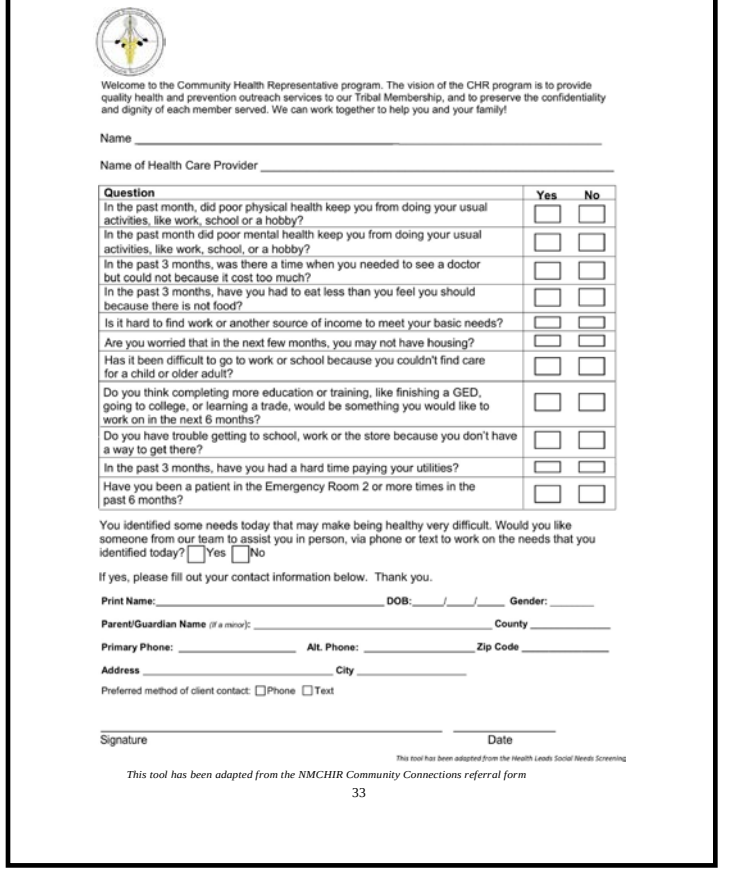
This tool has been adapted from the NMCHIR Community Connections referral form



Welcome to the Community Health Representative program. The vision of the CHR program is to provide quality health and prevention outreach services to our Tribal Membership, and to preserve the confidentiality and dignity of each member served. We can work together to help you and your family!

Name _____

Name of Health Care Provider _____

Question	Yes	No
In the past month, did poor physical health keep you from doing your usual activities, like work, school or a hobby?	☐	☐
In the past month did poor mental health keep you from doing your usual activities, like work, school, or a hobby?	☐	☐
In the past 3 months, was there a time when you needed to see a doctor but could not because it cost too much?	☐	☐
In the past 3 months, have you had to eat less than you feel you should because there is not food?	☐	☐
Is it hard to find work or another source of income to meet your basic needs?	☐	☐
Are you worried that in the next few months, you may not have housing?	☐	☐
Has it been difficult to go to work or school because you couldn't find care for a child or older adult?	☐	☐
Do you think completing more education or training, like finishing a GED, going to college, or learning a trade, would be something you would like to work on in the next 6 months?	☐	☐
Do you have trouble getting to school, work or the store because you don't have a way to get there?	☐	☐
In the past 3 months, have you had a hard time paying your utilities?	☐	☐
Have you been a patient in the Emergency Room 2 or more times in the past 6 months?	☐	☐

You identified some needs today that may make being healthy very difficult. Would you like someone from our team to assist you in person, via phone or text to work on the needs that you identified today? ☐ Yes ☐ No

If yes, please fill out your contact information below. Thank you.

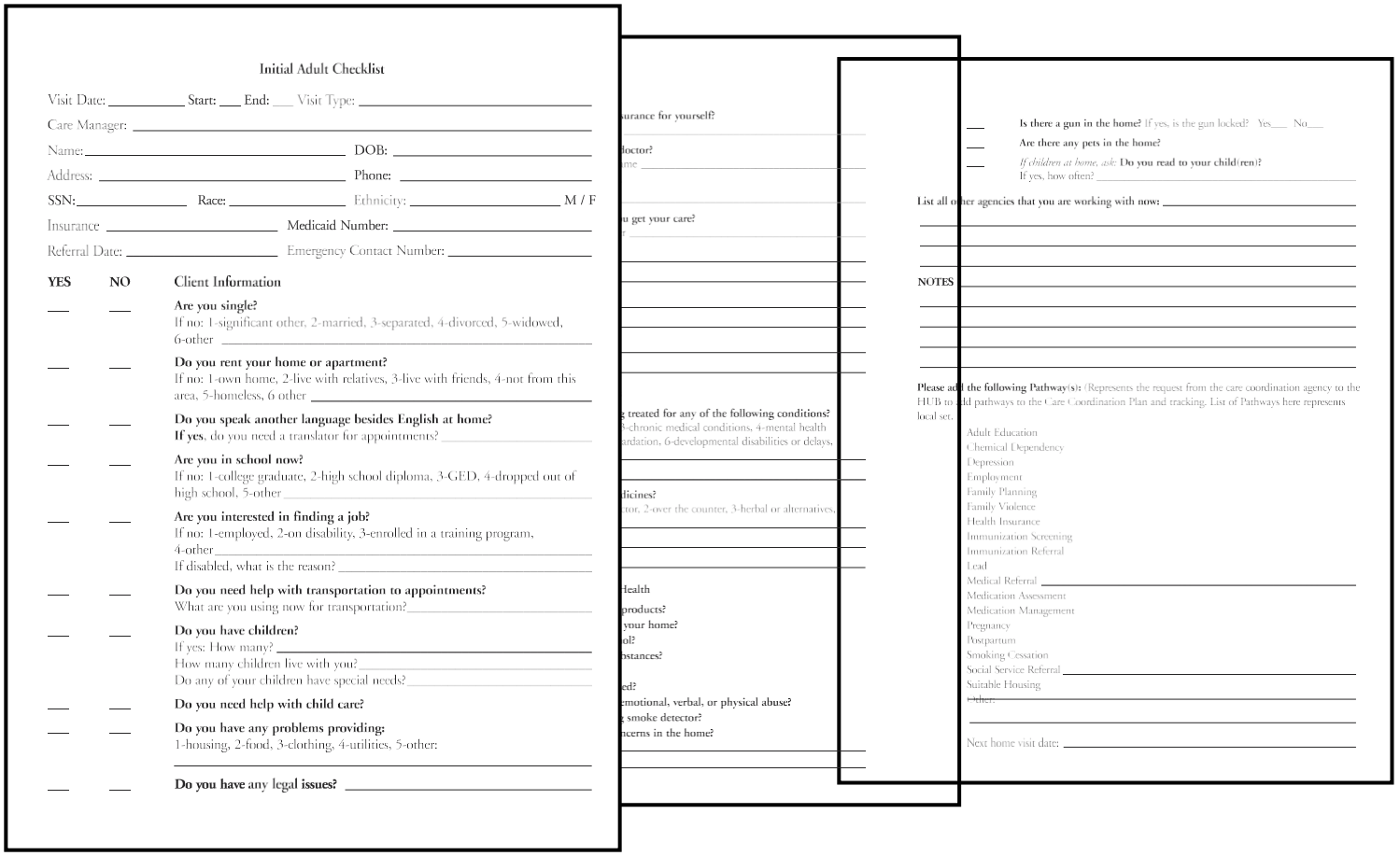
Print Name:_____ DOB:____/____/____ Gender: _____
Parent/Guardian Name *(If a minor)*: _____ County _____
Primary Phone: _____ Alt. Phone: _____ Zip Code _____
Address _____ City _____
Preferred method of client contact: ☐ Phone ☐ Text

_____ _____
Signature Date

This tool has been adapted from the Health Leads Social Needs Screening

This tool has been adapted from the NMCHIR Community Connections referral form

Initial Adult Checklist[21]



Initial Adult Checklist

Visit Date: _____ Start: ___ End: ___ Visit Type: _____

Care Manager: _____

Name: _____ DOB: _____

Address: _____ Phone: _____

SSN: _____ Race: _____ Ethnicity: _____ M / F

Insurance _____ Medicaid Number: _____

Referral Date: _____ Emergency Contact Number: _____

YES	NO	Client Information
___	___	**Are you single?** If no: 1-significant other, 2-married, 3-separated, 4-divorced, 5-widowed, 6-other _____
___	___	**Do you rent your home or apartment?** If no: 1-own home, 2-live with relatives, 3-live with friends, 4-not from this area, 5-homeless, 6 other _____
___	___	**Do you speak another language besides English at home?** **If yes**, do you need a translator for appointments? _____
___	___	**Are you in school now?** If no: 1-college graduate, 2-high school diploma, 3-GED, 4-dropped out of high school, 5-other _____
___	___	**Are you interested in finding a job?** If no: 1-employed, 2-on disability, 3-enrolled in a training program, 4-other _____ If disabled, what is the reason? _____
___	___	**Do you need help with transportation to appointments?** What are you using now for transportation? _____
___	___	**Do you have children?** If yes: How many? _____ How many children live with you? _____ Do any of your children have special needs? _____
___	___	**Do you need help with child care?**
___	___	**Do you have any problems providing:** 1-housing, 2-food, 3-clothing, 4-utilities, 5-other: _____
___	___	**Do you have any legal issues?** _____

___ **Is there a gun in the home?** If yes, is the gun locked? Yes___ No___

___ **Are there any pets in the home?**

___ *If children at home, ask:* **Do you read to your child(ren)?** If yes, how often? _____

List all other agencies that you are working with now: _____

NOTES _____

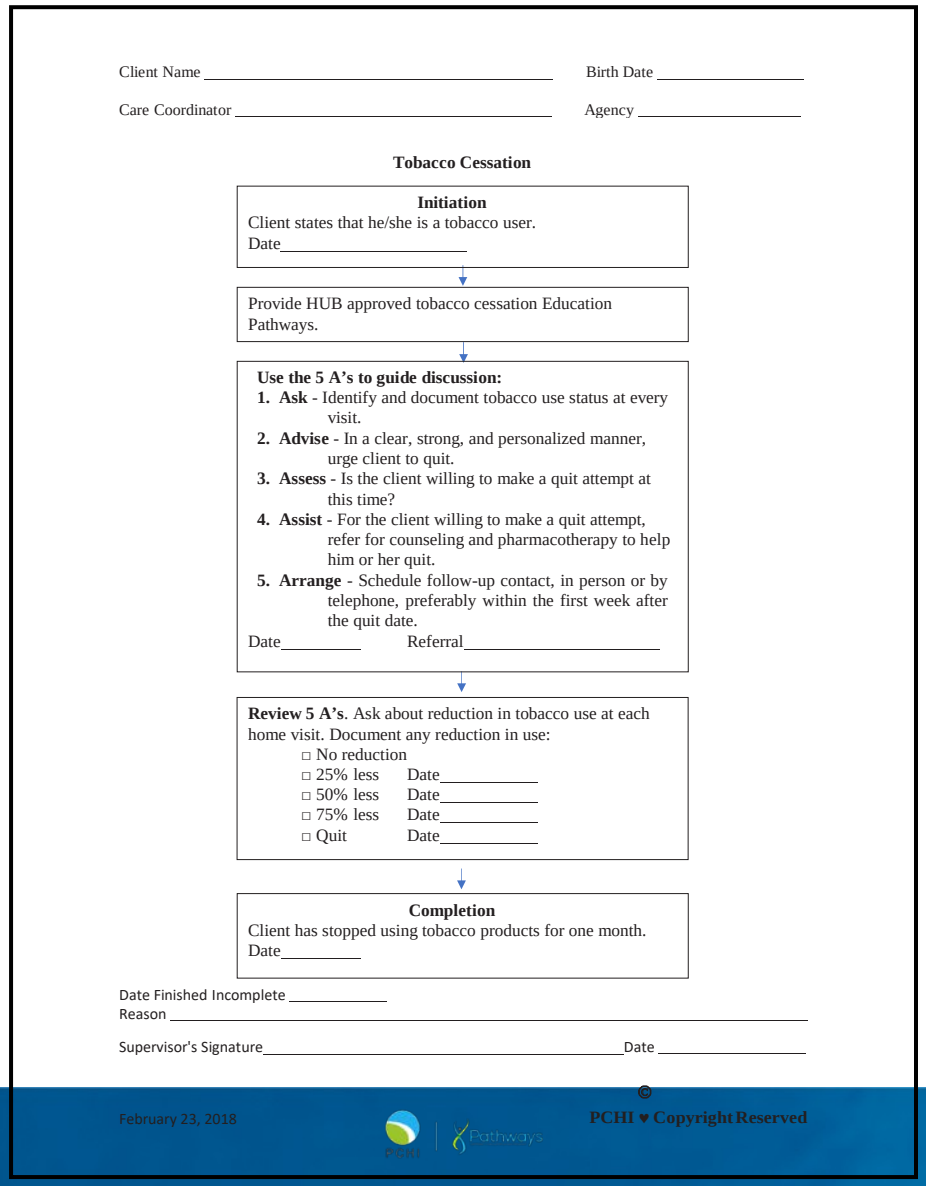
Please add the following Pathway(s): (Represents the request from the care coordination agency to the HUB to add pathways to the Care Coordination Plan and tracking. List of Pathways here represents local set.

Adult Education
Chemical Dependency
Depression
Employment
Family Planning
Family Violence
Health Insurance
Immunization Screening
Immunization Referral
Lead
Medical Referral _____
Medication Assessment
Medication Management
Pregnancy
Postpartum
Smoking Cessation
Social Service Referral _____
Suitable Housing
Other: _____

Next home visit date: _____

The initial adult checklists and follow-up visit checklists were identified in the Pathways Community HUB manual and included in the manual designed for the organization. These forms are also free to use as they are open source.[21]

Plan of Care/Documentation Templates



Client Name _____ Birth Date _____

Care Coordinator _____ Agency _____

Tobacco Cessation

Initiation
Client states that he/she is a tobacco user.
Date_____

Provide HUB approved tobacco cessation Education Pathways.

Use the 5 A's to guide discussion:
1. **Ask** - Identify and document tobacco use status at every visit.
2. **Advise** - In a clear, strong, and personalized manner, urge client to quit.
3. **Assess** - Is the client willing to make a quit attempt at this time?
4. **Assist** - For the client willing to make a quit attempt, refer for counseling and pharmacotherapy to help him or her quit.
5. **Arrange** - Schedule follow-up contact, in person or by telephone, preferably within the first week after the quit date.

Date_____ Referral_____

Review 5 A's. Ask about reduction in tobacco use at each home visit. Document any reduction in use:
- □ No reduction
- □ 25% less Date_____
- □ 50% less Date_____
- □ 75% less Date_____
- □ Quit Date_____

Completion
Client has stopped using tobacco products for one month.
Date_____

Date Finished Incomplete _____
Reason _____

Supervisor's Signature_____Date _____

February 23, 2018

The Pathways may be downloaded and used without special permission as they are open source and free to organizations implementing the Pathways HUB Model.[23]

The standardized Pathways are the only tools in the model with a copyright protection and may not be modified in any way.[23]

Objective 6

Identified Need/Objective	Strategies to meet objective	Metric
Develop tool/mechanism for CHW performance evaluation	Identify or develop a tool that the CHW supervisor may use to track and evaluate CHW performance. Ensure that the tool is efficient and user friendly.	✓ Identify & describe CHW performance evaluation measures. ✓ Tool developed & CHW supervisor approves of tool. ✓ Tool has built-in equations with data points that are auto populated from the HUB tracking tool.

CHW Performance Evaluation Tool

1.) Clients (30%)	**Quarter-** April-June	
# Clients	0	**# Clients:** Total number of clients per quarter.
Risk Quotient Score	0	**RiskQ Score**=: [# Clients x Risk Score of 2]
Score Range (80-200)		
Performance Score Percentage	**0**	***Performance Score %*** *: [Risk Quotient Score / Max Score (200)]*
Performance Points	0	***Performance Points:*** *[Performance score % x Max Points (30)]*
(Maximum Performance Points 30)		
2.) Risk Reduction= # of Pathways Completed - OBUs (40%)		
	Quarter- April-June	
OBUs	0	Measured based on the total number of OBUs for quarter.
Performance Score Percentage	**0**	***Performance Score %*** *: [OBUs for quarter/Max OBU Performance Score (1000)]*
Performance Points	0	***Performance Points:*** *[Performance Score % x Max Points 40]*
(Max Points 40)		
3.) Quality Assurance- (15%) Documentation		
Supervisor Sign off Scoring **Quarter-** April-June		
Average Score	0	Score 3: Good Score 2: Fair Score 1: Poor ***Score 0:*** *Requires remediation*
Performance Score Percentage	**0**	***Performance Score %:*** *[Average documentation score/ Max performance Score*
Performance Points	0	***Performance Points:*** *[Performance score % x Max Points (15)]*
(Max Points 15)		
4.) Home Visits- (15%)		
	Quarter- April-June	
Total Number of home visits	0	*Total Number of home visits per quarter*
Number of days site was open	60	*Total Possible business days open in 12 week period = 60 days*
Average Per/Day	0	High: 6 Visits/Day Medium: 4 Visits/Day Low: 2 Visits/Day
Performance Score Percentage	**0**	***Performance Score %:*** *[Average home visit score/ Max performance Score (6)]*
Performance Points	0	***Performance Points:*** *[Performance score % x Max Points (15)]*
(Max Points 15)		
	Quarter- April-June	
TOTAL POINTS	0	

Intended for use by the CHW supervisor.

Components of this tool were adapted from a sample evaluation tool PDF document on the Pathways Community HUB Institute website.[45]

Objective 7

Identified Need/Objective	Strategies to meet objective	Metric
Increase CHW Documentation Rates	Identify a model of care coordination with a clear structure to guide CHW interventions and documentation. Include CHW documentation as a performance evaluation measure.	✓ Evidence-based model identified. ✓ Documentation tools identified and included in the manual. ✓ Documentation element included in CHW performance evaluation tool.

CHW Documentafon Qua ity Assurance

Proposed Strategy: CHW supervisor and the four CHWs meet on a biweekly basis to discuss patient casesplans of care,, and to review documentation and billing performance.

Quarter: January-March	CHR 1
Week 1-2	
Week 3-4	
Week4-5	
Week 5-6	
Week 6-7	
Week 7-8	
Week8-9	
Week 9-10	
Week 10-11	
Week 11-12	
Averaig e for Quarter	

Scoringis based on checklists completed, appropr'ate documentation, accurately documented b g and fme.
XIID:..S:&" CHR is competing most of (>85%) of Checklists, documentation, and is accurately documenting billing. Documentation is appropriate.
Score =2: CHR is completing <85% of Checklists, document at ion, *but is accurately documenting billing. Documentation is appropriate most of the time and CHR corrects documentation or billing as directed by supervisor*. **Score=1:** CHR is competing minimal checklists/documentation, and is occasionally documenting billing.
Score=0: CHR is not regularly completing checklists, documentation, or billing.

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Objective 8

Identified Need/Objective	Strategies to meet objective	Metric
Reduce CHW time spent completing client transports.	Compile a list of transportation assistance resources that the CHW may refer to.	✓ Resource reference guide completed, printed and given to CHWs. ✓ Include cost-savings associated with reduction of CHW client transports.

Cost-Savings

	Est. Cost for CHW Time	Standard Mileage Rate	Total Cost
Transport to & from facility 30 miles away, est. 30 min. each way.	($16.83/hour) x 1 hour	(.53 cent/mile) x 60 miles	***$48.63***

- Utilize existing community transportation resources and reduce the number of client transports.
  - Cost savings
  - Reach a greater number of clients in the community

48.63 X 52 weeks=***$2,528.76***
$2,528.76 X 4 CHWs=***$10,115.04***

If each CHW reduced number of transports by 1 per week, this could result in approximately $10,115.04

Objective 9

Identified Need/Objective	Strategies to meet objective	Metric
Quality improvement and sustainability plan.	Identify or develop a tool that the organization may use to track client outcomes, CHW work output, program impact. Develop a tracking/ documentation tool that the organization may use in the future to submit to health payers for reimbursement CHW services.	✓ Outcome measures identified. ✓ Tracking tool developed/identified. ✓ Development of a checklist or step by step plan to prepare for future contracts with health payers.

9a: Identify funding stream for HUB startup.

- Kick start funding via grant resources may be the only feasible option for implementing all of the changes outlined in the project plan.

- Staff from the Grants Department have access to resources required to accomplish this step in the strategic plan.

- Descriptions and links to key resource guides and websites were included in the manual.

9b: Payment for Outcomes

The funding streams sustaining the existing Pathways HUBs follow a pay for outcomes approach. [21]

- Payments and contracts with health payers and other coordinating agencies will be essential to ensure CHW program sustainability.
- Pathways provide clear measures to help determine the financial impact of HUB services and whether CHW service efficiencies, cost-savings, and clinical health improvements are achieved.[21,23]

Example of Pathways Billing Codes[35]

Outcome Based Units (OBUs)

Pathways Billing Codes, OBUs, & Outcome Measures

Adult Member:

		High Risk	OBU	Very High Risk	OBU	Modifier
Checklists	**Outcome Measure**					
Initial Adult Checklist	Completed one time at enrollment	**G9001**	**7**	**G9003**	**9**	**A1**
Adult Checklist	Completed at each face-to-face encounter	**G9005**	**1**	**G9010**	**1.5**	**A1**
Pathways						
Adult Learning	Confirm that client successfully completes stated education goal	**G9002**	**6**	**G9009**	**7**	**AA**
Behavioral Health	Kept three scheduled behavioral health appointments	**G9002**	**4**	**G9009**	**5**	**AB**
Education	All required education components are completed and documented	**G9002**	**1**	**G9009**	**1**	**AE**
Employment	Consistent source of steady income and is employed more than 30 days from date of hire	**G9002**	**7**	**G9009**	**8**	**AF**
Family Planning	Tubal ligation, vasectomy, IUD, implant, shot or other form of long-acting reversible contraceptive (LARC) is obtained	**G9002**	**5**	**G9009**	**6**	**G1**
Family Planning	Method other than a permanent method or LARC chosen & client has successfully used the method for more than 30 days from the start date	**G9002**	**4**	**G9009**	**5**	**G2**
Health Insurance	Received health insurance – document plan and insurance number	**G9002**	**5**	**G9009**	**6**	**AH**
Housing	Moved into and maintained a suitable and affordable housing unit for more than 30 days from the move-in date	**G9002**	**9**	**G9009**	**10**	**AI**
Medical Home	Confirmed appointment with medical home	**G9002**	**3**	**G9009**	**6**	**AM**
Medical Referral	Confirmed appointment for health services	**G9002**	**1.5**	**G9009**	**3**	**AN**
Medication Assessment	Provider receives Medication Assessment Tool	**G9002**	**4**	**G9009**	**5**	**AO**
Medication Management	Provider or pharmacist confirms client is taking medications as prescribed	**G9002**	**9**	**G9009**	**10**	**AP**
Social Service Referral	Confirmed appointment for social services	**G9002**	**1.5**	**G9009**	**3**	**AU**
Tobacco Cessation	Stopped using tobacco products for one month	**G9002**	**4**	**G9009**	**6**	**AV**

- The Pathways HUB Model provides the tools and resources necessary to initiate the development of standardized billing and documentation practices.
- Reaching the point of contract negotiation with health payers will require a plan to accurately bill for services rendered[35]

Measurement of CHW Work Output

- The Pathways Community HUB model measures CHW work output through calculation of either Outcome Based Units (OBUs) or Relative Value Units (RVUs).

- By calculating and measuring OBUs associated with CHW services, the target organization may use this data to periodically assess CHW performance, compare CHW work output, and prepare for future contract developments and healthcare policy changes that may lead to reimbursement for CHW services.

9c: HUB Outcome Tracking Tool

		CHR 1			OBUs	CHR 2			OBUs	CHR 3			OBUs	CHR 4			OBUs
	Number of New Client Referrals																
G9001/ A1	*Initial Adult Checklists Completed (9)																
G9005/A1	Adult Checklist -Revisit (1)																
G9012/PHQ	PHQ-9 (3)																
G9012/FALL	Completed Fall Risk Assessment (3)																
Total Home Visits																	
Total Risk Score of clients (Future)- TBD																	
Billing Code/Modifier	**PATHWAY (OBUs)**	**Open**	**Closed**	**Finished Incomplete**	**OBUs**	**Open**	**Closed**	**Finished Incomplete**	**OBUs**	**Open**	**Closed**	**Finished Incomplete**	**OBUs**	**Open**	**Closed**	**Finished Incomplete**	**OBUs**
G9002 /AA	Adult Learning (6)																
G9002 /AB	Adult Behaviorial Health Referral (4)																
G9002 /AE	Health Education (1)																
G9002 /AF	Employment (7)																
G9002 /G1	Family Planning (5)																
G9002 /AH	Health Insurance (5)																
G9002 /AI	Housing (9)																
G9002 /AM	Medical Home (3)																
G9002 /AN	Medical Referral (1.5)																
G9009 /AO	*Medication Assessment (4)																
G9009 /AP	*Medication Management (10)																
G9009 /AU	*Social Service Referral (3)																
G9009 /AV	*Tobacco Cessation (6)																
G9009 /RS	*Pregnancy (2)																
G9009 /RR	*Post Partum (5)																
G9009 /PD	*Developmental Screening (1.5)																
G9009 /PC	*Developmental Referral (4)																
G9009 /PL	*Lead Screening (1.5)																
G9009 /PK	*Immunization Screening (3)																
G9009 /PJ	*Immunization Referral (5)																
TOTAL																	

Standard High Risk G9002
***Higher Risk G9009**

*This indicates that all members of the target population with this Pathway open or in progress are considered higher risk (versus standard high risk). The OBUs associated with all other Pathways listed are automatically calculated according to the standard high risk category.

HUB Overall Outcome Tracking Tool*

Billing Code/Modifier	PATHWAY (OBUs)	Open Pathways To Date	Number Completed	Percent % Completed To Date	Number Finished Incomplete	Percent % Finished Incomplete	Number Outstanding Cases	Percent % Outstanding Cases
G9002 /AA	Adult Learning (6)	0	0	0.0%	0	0.0%	0	0
G9002 /AB	Adult Behaviorial Health Referral (4)	0	0	0.0%	0	0.0%	0	0
G9002 /AE	Health Education (1)	0	0	0.0%	0	0.0%	0	0
G9002 /AF	Employment (7)	0	0	0.0%	0	0.0%	0	0
G9002 /G1	Family Planning (5)	0	0	0.0%	0	0.0%	0	0
G9002 /AH	Health Insurance (5)	0	0	0.0%	0	0.0%	0	0
G9002 /AI	Housing (9)	0	0	0.0%	0	0.0%	0	0
G9002 /AM	Medical Home (3)	0	0	0.0%	0	0.0%	0	0
G9002 /AN	Medical Referral (1.5)	0	0	0.0%	0	0.0%	0	0
G9009 /AO	*Medication Assessment (4)	0	0	0.0%	0	0.0%	0	0
G9009 /AP	*Medication Management (10)	0	0	0.0%	0	0.0%	0	0
G9009 /AU	*Social Service Referral (3)	0	0	0.0%	0	0.0%	0	0
G9009 /AV	*Tobacco Cessation (6)	0	0	0.0%	0	0.0%	0	0.0%
G9009 /RS	*Pregnancy (2)	0	0	0.0%	0	0.0%	0	0
G9009 /RR	*Post Partum (5)	0	0	0.0%	0	0.0%	0	0
G9009 /PD	*Developmental Screening (1.5)	0	0	0.0%	0	0.0%	0	0
G9009 /PC	*Developmental Referral (4)	0	0	0.0%	0	0.0%	0	0
G9009 /PL	*Lead Screening (1.5)	0	0	0.0%	0	0.0%	0	0
G9009 /PK	*Immunization Screening (3)	0	0	0.0%	0	0.0%	0	0
G9009 /PJ	*Immunization Referral (5)	0	0	0.0%	0	0.0%	0	0
TOTAL		0	0	0.0%	0	0.0%	0	0.0%

Resources & Budget

Revenue & Cost Mitigation	
Project Manager Time (in-kind donation)	12,000.00
Consultations	
Health Department APRN (in kind donation)	519.24
HUB #1- Regional Coordinator (in kind donation)	209.90
HUB #2 Regional Coordinator, HUB manager (in kind donation)	365.50
Cost mitigation	
20 standard Pathways, worksheets, & checklists (Open Source)	0.00
Binders to store Pathways materials and organization manual (in kind donation)	15.00
Printing costs of Pathways materials and organization manual (in kind donation)	21.60
Funding from state workforce development program for CHW training program*	2,260.00
Textbook required for training course (Included in cost for course)*	280.00
Conference room use	350.00
Revenue Source A- Potential Grant funding?	TBD
Revenue Source B- Downstream savings & potential future reimbursement of services	TBD
TOTAL INCOME	15,391.00
* Not included in total income	
Project Expenses	
Project Manager Time (in-kind donation)	12,000.00
Health Clinic Provider/CHR Supervisor (Site Mentor)	3,459.20
Health Department APRN (in kind donation)	519.00
HUB #1- Regional Coordinator (in kind donation)	209.90
HUB #2 Regional Coordinator, HUB manager (in kind donation)	365.50
Cost mitigation	0.00
20 standard Pathways, worksheets, & checklists (Open Source)	0.00
Binders to store Pathways materials and organization manual (in kind donation)	15.00
Printing costs of Pathways materials and organization manual (in kind donation)	0.00
Conference room use	350.00
TOTAL EXPENSES (To Date)	16,918.60
Net Operating Cost	3,459.40

Project Timeline

Obtain IRB approval from university and organization by 11/1/18

Obtain and analyze financial data relating to current CHW at the organization

Connect CHWs with Ml Works and coordinate training with Health Dept. CHW training program by 2/1/19

Develop sustainable funding strategies for HUB by 2/15/19

Develop systems and tools to track and evaluate performace by 3/1/19

Finalize strategic quality improvement and sustainability plan, plus accompanying manual and tools by 3/2019

Final Project Defense by 3/20/2019

Present completed project plan to Tribal Council by 4/20118

Upload to Scholarworks by 4122/2018

Handoff project to team leader who will complete final phase of ☐NP project.

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Discussion

- Evidence suggests that when CHWs are *effectively trained* and equipped to address identified needs of the community that they serve, they can improve the patient care experience, improve health of the community, and reduce per capita costs of health care[21,22,23,25,37]

- It is expected that the overall costs associated with this project will eventually lead to a positive return on investment pay for itself by improving CHW competency and providing the tools necessary to reach more individuals in the community; improve work flow; and increase work output.

Implications for Practice

t Care Coordination & Communication

↑ CHR Documentation Completion Rates

↑ Work Output & Efficiency

↑ Sustainability

↓ Minimize Duplication of Care

↓ Per Capita Healthcare Costs

Sustainability

Ongoing commitment and support by stakeholders at all levels.

A trained workforce that continually engages in professional development.

- Certificate-holding CHWs that maintain certification.
- Professional development & Continuing education- 20 CEUs every two years.

Documentation of services rendered - *If it is not documented- It did not happen!*

- Documentation provides evidence of services, CHW work output.
- Will be REQUIRED for any form of billing/reimbursement.

Regular evaluation of individual & organization performance

- Quarterly assessment of individual CHW performance using a standardized measurement tool.
- Demonstrate quality assurance and have quality improvement plan in place.

Outcome Tracking for quality improvement & preparing for future billing.

- Program outcomes & Client outcomes

Resources

- Financial & Material (i.e. Facilities, CHR documentation tools, vehicles, phones).

Steady funding stream to ensure sustainability

- Kickstart Funding: Grant funding? Will require initial investment to restructure program.
- Payment for outcomes: Value-based reimbursement (Outcome based units, relative value

Limitations

- Limited availability of population-specific health data.
- Limited availability of program data within the organization.
- The organization may choose not to enact this strategic plan.
- The organization may choose to prohibit student from publishing scholarly work, which would eliminate the possibility of other organizations using this strategic plan as a guide for their CHW program.

Conclusion

Lays the groundwork for developing an efficient & sustainable CHW program in a limited resource setting.

- Pathways HUB model replication would standardize care delivery and establish metrics for tracking and evaluating.
- The HUB Tracking and CHW Performance Evaluation tools provide a cost-effective, user-friendly system for data tracking and evaluation.
- Implementation of this strategic plan would improve care coordination, which is necessary to increase quality of care, improve patient outcomes, and reduce overall healthcare costs.

Project Outcome o·ssemination

Part 1: D project defense and approval from the DNP student's project committee.

Part 2: Formal Power Point presentation of project -outcomes and tools to Tribal Council.

Power Point presentation: disseminates the outcomes of the project and defmes the next steps for project implementation and evaluation

- Step-by-sum manual: Contains the data, standard ized forms and tools necessary to initiate the implementation process within the organization. The manual was printed placed in a three-ring binder.
- Encrypted & pass.word-protected USB: Contains an electronic version of the manual along with the Excel tools designed for outcome tracking; CHW performance evaluation; and OBU calculation/future billing.

Part 3: A manuscript detailing the project will be uploaded to ScholarWorks following approval from advisory team and the organization.

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Reflection on Enactment of the DNP Essentials

Essential I: Scientific Underpinning for Practice

Essential II: Organizational & Systems Leadership

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

Essential IV: Information Systems/Technology & Patient Care Technology for Health Care Improvement & Transformation

Essential V: Healthcare Policy for Advocacy in Health Care

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

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

Essential VIII: Advance Nursing Practice


Thank
You

Questions?

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Quarter: April-June

Total Days Site was Open: 60

		Hannah			OBUs	CHR 2			OBUs	CHR 3			OBUs	CHR 4			OBUs
	Number of New Client Referrals																
G9001/ A1	*Initial Adult Checklists Completed (9)				**0**				**0**				**0**				**0**
G9005/A1	Adult Checklist -Revisit (1)				**0**				**0**				**0**				**0**
G9012/PHQ	PHQ-9 (3)				**0**				**0**				**0**				**0**
G9012/FALL	Completed Fall Risk Assessment (3)				**0**				**0**				**0**				**0**
	Total Home Visits	**0**				**0**				**0**				**0**			
Total Risk Score of clients (Future)- TBD																	

Billing Code/Modifier	**PATHWAY (OBUs)**	Open	Closed	Finished Incomplete	OBUs	Open	Closed	Finished Incomplete	OBUs	Open	Closed	Finished Incomplete	OBUs	Open	Closed	Finished Incomplete	OBUs
G9002 /AA	Adult Learning (6)				0				0				0				0
G9002 /AB	Adult Behaviorial Health Referral (4)				0				0				0				0
G9002 /AE	Health Education (1)				0				0				0				0
G9002 /AF	Employment (7)				0				0				0				0
G9002 /G1	Family Planning (5)				0				0				0				0
G9002 /AH	Health Insurance (5)				0				0				0				0
G9002 /AI	Housing (9)				0				0				0				0
G9002 /AM	Medical Home (3)				0				0				0				0
G9002 /AN	Medical Referral (1.5)				0				0				0				0
G9009 /AO	*Medication Assessment (4)				0				0				0				0
G9009 /AP	*Medication Management (10)				0				0				0				0
G9009 /AU	*Social Service Referral (3)				0				0				0				0
G9009 /AV	*Tobacco Cessation (6)				0				0				0				0
G9009 /RS	*Pregnancy (2)				0				0				0				0
G9009 /RR	*Post Partum (5)				0				0				0				0
G9009 /PD	*Developmental Screening (1.5)				0				0				0				0
G9009 /PC	*Developmental Referral (4)				0				0				0				0
G9009 /PL	*Lead Screening (1.5)				0				0				0				0
G9009 /PK	*Immunization Screening (3)				0				0				0				0
G9009 /PJ	*Immunization Referral (5)				0				0				0				0
	TOTAL	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Total HUB OBUs	0
Total HUB Pathways Closed	0
Total HUB Pathways Finished Incomplete	0
Pathways Open	0

Standard High Risk G9002
***Higher Risk G9009**
*This indicates that all members of the target population with this Pathway open or in progress are considered higher risk (versus standard high risk). The OBUs associated with all other Pathways listed are automatically calculated according to the standard high risk category.

Billing Code/Modifier	PATHWAY (OBUs)	Open Pathways To Date	Number Completed	Percent % Completed To Date	Number Finished Incomplete	Percent % Finished Incomplete	Number Outstanding Cases	Percent % Outstanding Cases
G9002 /AA	Adult Learning (6)	0	0	0.0%	0	0.0%	0	0
G9002 /AB	Adult Behaviorial Health Referral (4)	0	0	0.0%	0	0.0%	0	0
G9002 /AE	Health Education (1)	0	0	0.0%	0	0.0%	0	0
G9002 /AF	Employment (7)	0	0	0.0%	0	0.0%	0	0
G9002 /G1	Family Planning (5)	0	0	0.0%	0	0.0%	0	0
G9002 /AH	Health Insurance (5)	0	0	0.0%	0	0.0%	0	0
G9002 /AI	Housing (9)	0	0	0.0%	0	0.0%	0	0
G9002 /AM	Medical Home (3)	0	0	0.0%	0	0.0%	0	0
G9002 /AN	Medical Referral (1.5)	0	0	0.0%	0	0.0%	0	0
G9009 /AO	*Medication Assessment (4)	0	0	0.0%	0	0.0%	0	0
G9009 /AP	*Medication Management (10)	0	0	0.0%	0	0.0%	0	0
G9009 /AU	*Social Service Referral (3)	0	0	0.0%	0	0.0%	0	0
G9009 /AV	*Tobacco Cessation (6)	0	0	0.0%	0	0.0%	0	0.0%
G9009 /RS	*Pregnancy (2)	0	0	0.0%	0	0.0%	0	0
G9009 /RR	*Post Partum (5)	0	0	0.0%	0	0.0%	0	0
G9009 /PD	*Developmental Screening (1.5)	0	0	0.0%	0	0.0%	0	0
G9009 /PC	*Developmental Referral (4)	0	0	0.0%	0	0.0%	0	0
G9009 /PL	*Lead Screening (1.5)	0	0	0.0%	0	0.0%	0	0
G9009 /PK	*Immunization Screening (3)	0	0	0.0%	0	0.0%	0	0
G9009 /PJ	*Immunization Referral (5)	0	0	0.0%	0	0.0%	0	0
TOTAL		0	0	0.0%	0	0.0%	0	0.0%

CHR Documentation and Quality Assurance

April-June	Hannah	CHR 2	CHR 3	CHR 4
Week 1-2				
Week 3-4				
Week 4-5				
Week 5-6				
Week 6-7				
Week 7-8				
Week 8-9				
Week 9-10				
Week 10-11				
Week 11-12				
Average for Quarter	0.0	0.0	0.0	0.0

Scoring is based on checklists completed, appropriate documentation, accurately documented billing and time.

Score =3: CHR is completing most of (>85%) of Checklists, documentation, and is accurately documenting billing. Documentation is appropriate.

Score =2: CHR is completing <85% of Checklists, documentation, *but is accurately documenting billing. Documentation is appropriate most of the time and CHR corrects documentation or billing as directed by supervisor.*

Score =1: CHR is completing minimal checklists/documentation, and is occasionally documenting billing.

Score=0: CHR is not regularly completing checklists, documentation, or billing.

Hannah

1.) Clients (30%) Quarter- April-June

# Clients	0	**# Clients:** Total number of clients per quarter.
Risk Quotient Score	0	**RiskQ Score**=: [# Clients x Risk Score of 2]
Score Range (80-200)		
Performance Score Percentage	**0**	***Performance Score %*** *: [Risk Quotient Score / Max Score (200)]*
Performance Points	0	***Performance Points:*** *[Performance score % x Max Points (30)]*
(Maximum Performance Points 30)		

2.) Risk Reduction= # of Pathways Completed - OBUs (40%)

Quarter- April-June

OBUs	0	Measured based on the total number of OBUs for quarter.
Performance Score Percentage	**0**	***Performance Score %*** *: [OBUs for quarter/Max OBU Performance Score (1000)]*
Performance Points	0	***Performance Points:*** *[Performance Score % x Max Points 40]*
(Max Points 40)		

3.) Quality Assurance- (15%) Documentation

Supervisor Sign off Scoring **Quarter-** April-June

Average Score	0	Score 3: Good Score 2: Fair Score 1: Poor ***Score 0:*** *Requires remediation*
Performance Score Percentage	**0**	***Performance Score %:*** *[Average documentation score/ Max performance Score (3)]*
Performance Points	0	***Performance Points:*** *[Performance score % x Max Points (15)]*
(Max Points 15)		

4.) Home Visits- (15%)

Quarter- April-June

Total Number of home visits	0	*Total Number of home visits per quarter*
Number of days site was open	60	*Total Possible business days open in 12 week period = 60 days*
Average Per/Day	0	High: 6 Visits/Day Medium: 4 Visits/Day Low: 2 Visits/Day
Performance Score Percentage	**0**	***Performance Score %:*** *[Average home visit score/ Max performance Score (6)]*
Performance Points	0	***Performance Points:*** *[Performance score % x Max Points (15)]*
(Max Points 15)		

Quarter- April-June

TOTAL POINTS	0

CHR 2

1.) Clients (30%)

Quarter- April-June

# Clients	0	**# Clients:** Total number of clients per quarter
Risk Quotient Score	0	**RiskQ Score**=: [# Clients x Risk Score of 2]
Score Range (80-200)		
Performance Score Percentage	**0**	***Performance Score %*** *: [Risk Quotient Score / Max Score (200)]*
Performance Points	0	***Performance Points:*** *[Performance score % x Max Points (30)]*
(Maximum Performance Points 30)		

2.) Risk Reduction= # of Pathways Completed - OBUs (40%)

Quarter- April-June

OBUs	0	Measured based on the total number of OBUs for quarter.
Performance Score Percentage	**0**	***Performance Score %*** *: [OBUs for quarter/Max OBU Performance Score (1000)]*
	0	***Performance Points:*** *[Performance Score % x Max Points 40]*
Performance Points		
(Max Points 40)		

3.) Quality Assurance- (15%) Documentation

Supervisor Sign off Scoring **Quarter-** April-June

Average Score	0	Score 3: Good Score 2: Fair Score 1: Poor ***Score 0:*** *Requires remediation*
Performance Score Percentage	**0**	~~***Performance Score %:*** *[Average documentation score/ Max performance Score (~~
Performance Points		***Performance Points:*** *[Performance score % x Max Points (15)]*
(Max Points 15)		

4.) Home Visits- (15%)

Quarter- April-June

Total Number of home visits	0	~~*Total Number of home visits per quarter*~~
Number of days site was open	60	*Total Possible business days open in 12 week period = 60 days*
Average Per/Day	0	High: 6 Visits/Day Medium: 4 Visits/Day Low: 2 Visits/Day
Performance Score Percentage	**0**	***Performance Score %:*** *[Average home visit score/ Max performance Score (6)]*
Performance Points	0	***Performance Points:*** *[Performance score % x Max Points (15)]*
(Max Points 15)		

Quarter- April-June

TOTAL POINTS	0

CHR 3

1.) Clients (30%)

Quarter- April-June

# Clients	0	**# Clients:** Total number of clients per quarter
Risk Quotient Score	0	**RiskQ Score**=: [# Clients x Risk Score of 2]
Score Range (80-200)		
Performance Score Percentage	**0**	***Performance Score %*** *: [Risk Quotient Score / Max Score (200)]*
Performance Points	0	***Performance Points:*** *[Performance score % x Max Points (30)]*

(Maximum Performance Points 30)

2.) Risk Reduction= # of Pathways Completed - OBUs (40%)

Quarter- April-June

OBUs	0	Measured based on the total number of OBUs per quarter.
Performance Score Percentage	**0**	***Performance Score %*** *: [OBUs for quarter/Max OBU Performance Score (1000)]*
Performance Points	0	***Performance Points:*** *[Performance Score % x Max Points 40]*
(Max Points 40)		

3.) Quality Assurance- (15%) Documentation

Supervisor Sign off Scoring **Quarter-** April-June

Average Score	0	Score 3: Good Score 2: Fair Score 1: Poor ***Score 0:*** *Requires remediation*
Performance Score Percentage	**0**	***Performance Score %:*** *[Average documentation score/ Max performance Score (3)*
Performance Points	0	***Performance Points:*** *[Performance score % x Max Points (15)]*
(Max Points 15)		

4.) Home Visits- (15%)

Quarter- April-June

Total Number of home visits	0 *Number of*	*Total Number of home visits per quarter*
days site was open	60	*Total Possible business days open in 12 week period = 60 days*
Average Per/Day	0	High: 6 Visits/Day Medium: 4 Visits/Day Low: 2 Visits/Day
Performance Score Percentage	**0**	***Performance Score %:*** *[Average home visit score/ Max performance Score (6)]*
Performance Points	0	***Performance Points:*** *[Performance score % x Max Points (15)]*
(Max Points 15)		

Quarter- April-June

TOTAL POINTS	0

CHR 4

1.) Clients (30%)

Quarter- April-June

# Clients	0	**# Clients:** Total number of clients per quarter
Risk Quotient Score	0	**RiskQ Score**=: [# Clients x Risk Score of 2]
Score Range (80-200)		
Performance Score Percentage	**0**	***Performance Score %*** *: [Risk Quotient Score / Max Score (200)]*
Performance Points	0	***Performance Points:*** *[Performance score % x Max Points (30)]*
(Maximum Performance Points 30)		

2.) Risk Reduction= # of Pathways Completed - OBUs (40%)

Quarter- April-June

OBUs	0	Measured based on the total number of OBUs produced within quarter.
Performance Score Percentage	**0**	***Performance Score %*** *: [OBUs for quarter/Max OBU Performance Score (1000)]*
Performance Points	0	***Performance Points:*** *[Performance Score % x Max Points 40]*
(Max Points 40)		

3.) Quality Assurance- (15%) Documentation

Supervisor Sign off Scoring **Quarter-** April-June

Average Score	0	**Score 3: Good Score 2: Fair Score 1: Poor** ***Score 0:*** *Requires remediation*
Performance Score Percentage	**0**	***Performance Score %:*** *[Average documentation score/ Max performance Score*
Performance Points	0	***Performance Points:*** *[Performance score % x Max Points (15)]*
(Max Points 15)		

4.) Home Visits- (15%)

Quarter- April-June

Total Number of home visits	0 *Number of*	*Total Number of home visits per quarter*
days site was open	60	*Total Possible business days open in 12 week period = 60 days*
Average Per/Day	0	**High:** 6 Visits/Day **Medium:** 4 Visits/Day **Low:** 2 Visits/Day
Performance Score Percentage	**0**	***Performance Score %:*** *[Average home visit score/ Max performance Score (6)]*
Performance Points	0	***Performance Points:*** *[Performance score % x Max Points (15)]*
(Max Points 15)		

Quarter- April-June

TOTAL POINTS	0