

3-2018

# A Multidimensional Approach to Improve Cardiovascular Quality Measure Documentation in a Native American Population

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A Multidimensional Approach to Improve Cardiovascular Quality Measure Documentation in a

Native American Population

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## Abstract

Native Americans are more likely than white counterparts to be diagnosed with heart disease (Office of Minority Health [OMH], 2017). The scholarly project was conducted in response to the need for improvement in cardiovascular lifestyle interventions for Native Americans and their documentation to meet Government Performance Results Act quality measures. The clinical question addressed was: what is an evidence-based multidimensional approach to improve cardiovascular quality measure documentation in a Native American primary care clinic? The multidimensional interventions included educational sessions for Community Health Representatives (CHRs), a provider education session on appropriate documentation in order to satisfy quality measures, chart review of pre and post intervention education documentation and a five year quality measure sustainability plan. The Health Promotion Theory and Kotter's Change Model were used to develop and implement the intervention. The results indicated a small increase in heart healthy habits (7.7%) amongst CHRs, and small positive changes in heart healthy knowledge, with a 12.1% increase in knowledge on the first group of questions and a 16.2% increase in knowledge on the second group of heart healthy knowledge questions. The results of the provider intervention were favorable with a 28.3% increase in provider knowledge. Chart review was undertaken to determine if there was a significant difference between documented patient education by providers before and after the session. The results indicated a statistically significant change in properly documented education ( $p = 0.0198$ ). The intervention was effective with a medium effect size (60%) in terms of increasing documentation of patient education which was the missing link the clinic needed in order to increase capture of cardiovascular quality metrics. The five- year strategic quality plan will help guide organizational stakeholders in the continued attainment of quality measures.

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A Multidimensional Approach to Improve Cardiovascular Quality Measure Documentation in a Native American Population

**Executive Summary**

**Background**

Cardiovascular disease (CVD) is the leading global cause of death, with an expected incidence of more than 23.6 million by 2030 (American Heart Association [AHA], 2017). Native Americans are more likely than white counterparts to be diagnosed with heart disease (Office of Minority Health [OMH], 2017). Native Americans are more likely to have risk factors for heart disease such as obesity, tobacco use, and hypertension (OMH, 2017). Cardiovascular disease prevention efforts are critical in the primary care environment in order to decrease risk factors for CVD in the Native American population.

**Purpose**

Heart disease is a national health issue, resulting in significant morbidity and mortality for Native Americans (Howard et al., 1999). Primary prevention of heart disease starts with reduction of CVD risk factors. The Office of Disease Prevention and Health Promotion (ODPHP) and the Intertribal Council of Michigan have published recommendations to decrease the burden of CVD through primary prevention including the reduction of sodium intake, increasing physical activity, and decreasing tobacco use (Intertribal Council of Michigan, n.d.; ODPHP, 2017). The organization of interest has identified a high burden of CVD and CVD risk factors along with poor attainment of quality measure metrics. The purpose of this DNP project is to address this current gap in care through a multidimensional intervention.

**Significance**

Many Native Americans have limited knowledge of cardiovascular disease, including limited knowledge of stroke and heart attack symptoms (Brega et al., 2013). Data has indicated

risk factors for CVD are disproportionately high in the Native American population. A systematic review of 31 studies was conducted to investigate the prevalence of CVD as well as common CVD risk factors including diabetes, metabolic syndrome, dyslipidemia, obesity, and hypertension (Hutchinson & Shin, 2014). The review found that rates of risk factors including obesity, metabolic syndrome, and diabetes are significantly higher in the Native American population compared to the general population (Hutchinson & Shin, 2014). Native Americans have increased rates of CVD and mortality related to CVD when compared with white counterparts (Hutchinson & Shin, 2014). It is clear that CVD and its risk factors continue to be major health problems in the Native American population and must be addressed.

### **Current Practice**

A rural Native American primary care clinic in the Midwest has identified a problem of high prevalence of CVD within the tribal population and low cardiovascular quality measure attainment at the clinic. This is substantiated by clinic Government Performance Results Act (GPRA) quarterly report data that shows 8.9% of tribal members are currently being followed for coronary heart disease, the majority of whom (74%) have comorbid diabetes. According to organizational GPRA quarterly report data, CVD risk factors are also prevalent at the clinic, with a reported 19.1% of tribal members with diabetes, 26.4% of tribal members being treated for hypertension, and 31.6% of tribal members currently using tobacco products.

The providers of care strive to follow the Medicare screening recommendations and use the cardiovascular risk profile to yield a 10-year risk of heart disease on patients they deem to be at risk (American College of Cardiology, n.d.; Centers for Medicare & Medicaid Services, 2017). This process is not standardized or completed on every patient. Education on modifiable risk

factors or control of comorbidities such as hypertension, hyperlipidemia, and obesity is not standardized and is provided per the provider's discretion.

The Indian Health Service utilizes specific quality measures based on the Government Performance and Results Act (GPRA)/ GPRA Modernization Act (GPRAMA) (Indian Health Service, 2017a). The Government Performance and Results Act is a critical component of the Indian Health Service's annual federal budget request, which includes more than 20 GPRA quality measures and six GPRAMA measures which focus on health promotion and disease prevention (Indian Health Service, 2017a). The Comprehensive Assessment of CVD is a GPRAMA measure that identifies the percentage of eligible patients who have had a comprehensive assessment for four CVD risk factors. According to 2015 Indian Health Service data, only 55% of eligible patients in the U.S. had a comprehensive CVD assessment as defined by the GPRAMA quality measure (Indian Health Service, 2015). Data from the organization of interest indicates that this quality measure is not currently met due to either poor rates of lifestyle counseling or poor documentation of lifestyle counseling. Implementation of a multidimensional intervention to improve cardiovascular quality measure documentation has helped address this multifaceted problem.

### **New Evidence**

Evidence for the implementation of this project was systematically reviewed. A total of nine articles were included in the review and are synthesized in Appendix A. First, effective strategies for lifestyle modification to decrease CVD risk were considered. Secondly, quality measure attainment at the organization of interest and its impact on care delivery was explored. It was found that Native American communities have a resource that is largely untapped; the Community Health Representative (CHR). The CHR program offers Native Americans access to

well trained medical paraprofessionals who live and work within their community (Indian Health Service, 2017b). Community based programs implementing CHR led educational strategies have been suggested to favorably impact CVD risk factors including blood glucose, physical activity, healthy diet changes, blood pressure, and even 10 year risk of coronary events (Balcazar et al., 2015; Hayashi et al., 2010; Khetan et al., 2016).

### **Intervention**

Considering this identified gap in care, a multidimensional intervention was developed to address the complex problem of increased CVD rates and low cardiovascular disease quality measure attainment. The intervention included:

- Design and implementation of a provider education session to educate providers on GPRA/GPRAMA and proper documentation strategies to facilitate capture of quality measures.
- Implementation of educational session, “Honoring the Gift of Heart Health” to Community Health Representatives to facilitate healthy habits at the community level and educate CHRs on documentation of subsequent interventions with tribal members.
- Collaboration with key organizational stakeholders to develop a five-year strategic plan to facilitate continued emphasis on quality measure attainment.

### **Recommendation**

After the organizational assessment and literature review were complete, a recommendation was made to implement the proposed interventions to improve cardiovascular quality measure documentation within the clinic. The recommendation was presented and accepted by stakeholders within the primary care clinic.



## **Results**

### **Community Health Representative Educational Sessions**

The results of the CHR educational sessions were gauged by the change in habits self-reported by participants via the “My Health Habits” survey (Appendix G). The intervention was delivered over five weeks in two hour sessions by the DNP student. The sessions were attended by Native American Community Health Representatives (CHRs) from four different counties, all associated with the tribal clinic. The percent change from pre-intervention to post-intervention was assessed on several measures including heart healthy habits, heart healthy knowledge, and stages of change. Due to the structure of the questions, heart healthy knowledge was divided into two categories.

The results showed a small positive change in heart healthy habits, with a 7.7% increase in heart healthy habits among the CHRs (Appendix M). The results indicated small positive changes in heart healthy knowledge, with a 12.1% increase in knowledge on the first group of questions (Appendix M) and a 16.2% increase in knowledge on the second group of heart healthy knowledge questions (Appendix M). The stages of change results were negligible, with no change pre and post intervention appreciated. Finally, the educational intervention resulted in CHRs learning how to document their future interactions with tribal members in order to help the clinic satisfy GPRA quality measure metrics.

### **Provider Education Session and Chart Review**

The provider educational session was evaluated using pre and post quizzes. The quizzes contained a Likert style scale and asked the providers to rate their knowledge of GPRA measures and to share where they currently document patient education in the electronic medical record. None of the three providers reported knowledge of the Government Performance Results Act

prior to the educational session. Following the session, all providers reported not only knowledge of what GPRA is, but stated moving forward that GPRA quality measures will affect their practice and documentation. In terms of data analysis, there was a 28.3% increase in provider knowledge (Appendix N) following the educational intervention.

Patient charts were reviewed in order to evaluate the actual change in documentation that occurred before and after the provider education session. The pre-intervention chart review of 10 patients with existing CVD risk factors showed only one patient had received patient education documented in the proper field. The post-intervention chart review again reviewed 10 patient charts with multiple cardiovascular disease risk factors. The post intervention chart review showed seven patients had patient education documented in the proper, queryable field. The results indicated a statistically significant change in properly documented education with a p value of 0.0198 using the Fisher's exact test (Appendix O). The sample of charts reviewed was small, and all documentation in the sample was performed by clinic providers. However, following the educational intervention, the CHR's are also prepared to document education they provide to tribal members in the future. Overall, the intervention was effective with a medium effect size (60%) in terms of increasing documentation of patient education which was the missing link the clinic needed in order to increase capture of cardiovascular quality metrics.

### **Five Year Strategic Plan**

A five year GPRA strategic attainment plan was created in collaboration with clinic providers, the site mentor, and the clinic health director. The plan included the clinic's mission and vision, as well as several goals and objectives related to GPRA quality measure metrics. The GPRA goals will be periodically assessed including an assessment of team and individual

provider performance at quarterly meetings of key stakeholders including the health director and the providers. The plan can be found in Appendix P.

### **Sustainability**

Through educating the Community Health Representatives about CVD and how to decrease modifiable risk factors, this project has enabled them to continue to share this knowledge with their patients after the project has ended. Community Health Representatives are now aware they can document in the electronic medical record to help satisfy quality measure metrics. The providers were taught to effectively document cardiovascular risk education in a reportable field, which was substantiated through chart review. The providers and the CHRs now have the information to continue to document properly and continue to prioritize quality measure attainment going forward. Ongoing monitoring of quality metrics will be used to sustain the provider education portion of the project. A five year strategic quality plan will continue to help organizational stakeholders to focus on ways to improve attainment of quality measures.

### **Conclusion**

Organizational stakeholders have identified the growing burden of CVD and CVD risk factors among tribal members as a problem that must be addressed. Through an organizational assessment, it was found that the organization was also struggling to meet quality measure metrics. A quality improvement project included an evidence based multidimensional intervention that addressed the organization's concerns including a CHR educational intervention, an educational session for providers, a five year sustainability plan, and was aimed at improving cardiovascular quality measure documentation at the organization of interest. The results showed a small positive change in heart healthy habits, with a 7.7% increase in heart healthy habits among the CHRs, and small positive changes in heart healthy knowledge, with a

12.1% increase in knowledge on the first group of questions and a 16.2% increase in knowledge on the second group of heart healthy knowledge questions. The results of the provider intervention were favorable; there was a 28.3% increase in provider knowledge.

Following the provider education session, chart review was undertaken to determine if there was a significant difference between documented patient education by providers before and after the session. The results indicated a statistically significant change in properly documented education with a p value of 0.0198. The intervention was effective with a medium effect size (60%) in terms of increasing documentation of patient education which was the missing link the clinic needed in order to increase capture of cardiovascular quality metrics. Finally, a five year GPRA strategic plan was developed by the DNP student and accepted by key stakeholders. The plan addresses sustainability through quantifying attainment goals not only for cardiovascular quality measures, but for all 2018 GPRA quality measures. Quarterly meetings with providers and the health director to analyze GPRA quality measure metrics are also part of the sustainability plan accepted by the clinic's stakeholders.

In conclusion, increasing cardiovascular disease and low quality measure metric attainment were discovered to be problems at the organization through an organizational assessment. These problems were successfully addressed by the quality improvement project which included a multidimensional evidence based intervention.

A Multidimensional Approach to Improve Cardiovascular Quality Measure Documentation in a Native American Population

Cardiovascular disease (CVD) is the leading global cause of death, with an expected incidence of more than 23.6 million by 2030 (American Heart Association [AHA], 2017). Heart disease accounts for one in seven deaths and is the number one cause of death in the United States (AHA, 2017). Native Americans are more likely than white counterparts to be diagnosed with heart disease (Office of Minority Health [OMH], 2017). Native Americans are also more likely to have risk factors for heart disease such as obesity, tobacco use, and hypertension (OMH, 2017). Thus, cardiovascular disease is a major health problem in the Native American community.

Heart disease is a national health issue, estimated to have cost over \$199 billion from 2012-2013, and costs are projected to increase by an estimated 100% between 2013 and 2030 (AHA, 2017). In response to current and emerging health issues, the Office of Disease Prevention and Health Promotion (ODPHP) publishes Healthy People criteria every 10 years which include goals and objectives to help U.S. citizens be as healthy as possible (ODPHP, 2017).

There are several goals related to heart disease and cardiovascular health published in the Healthy People 2020 recommendations. Healthy People 2020 recommendations include decreasing the number of deaths attributed to heart disease, and increasing the proportion of adults with hypertension who meet the recommended guidelines for body mass index, sodium intake and physical activity (ODPHP, 2017). Additionally, the recommendations include increasing the proportion of adults with elevated low density lipoprotein who have been advised by a healthcare provider regarding lipid lowering methods including lifestyle change and

medication (ODPHP, 2017). An intervention focused on prevention of heart disease follows the recommendations of Healthy People 2020 and will favorably impact tribal health.

On a state level, the Intertribal Council of Michigan has adopted the U.S. Health and Human Services REACH (Racial and Ethnic Approaches to Community Health) program (Intertribal Council of Michigan, n.d.). The creators of the REACH program promote healthy lifestyles, reducing chronic disease, reducing health disparities, and controlling healthcare spending (Intertribal Council of Michigan, n.d.). The goal of this initiative is to improve the health and quality of life for Native Americans in Michigan who suffer from high rates of morbidity and mortality related to chronic disease (Intertribal Council of Michigan, n.d.). The objectives related to this goal are to increase access to prevention, reduce risk, and chronic disease management opportunities; increase access to environments with healthy food and beverage options, increase access to physical activity opportunities; and to increase access to tobacco free environments (Intertribal Council of Michigan, n.d.). A program focusing on modifiable risk factors to impact cardiovascular health coincides with national and state level recommendations to improve heart health in Native Americans. Currently, there is a gap in practice at the organization of interest; organizational leadership has realized the clinic is not meeting quality measure metrics for CVD due to lack of lifestyle modification education or lifestyle modification documentation.

### **Problem Statement**

Native Americans face health disparities that have resulted in health statistics that more closely reflect lower or middle income countries than data in the United States. (Hutchinson & Shin, 2014). Native Americans have an average life expectancy of 5.2 years less than the general United States population, due in part to a high burden of cardiovascular disease (Hutchinson &

Shin, 2014). A landmark study found that coronary heart disease rates among Native Americans were almost two fold higher than previously reported, that CVD rates are higher in this ethnic group than any other population in the U.S., and finally that the incidence of CVD is increasing in Native Americans (Howard et al., 1999).

The stakeholders of a Northern Michigan Native American primary care clinic have identified that their organization is not immune to the aforementioned cardiovascular health disparities. Currently, 8.9% of tribal members have been diagnosed with CVD, and risk factors for CVD including diabetes, hypertension, and tobacco use are also high at the clinic. The organization is struggling to meet quality measure metrics related to CVD that have the potential to impact future funding of the clinic. The organization also has a largely untapped resource, the Community Health Representative (CHR). Educational interventions led by Community Health Representatives have been shown to be successful in reducing modifiable risk factors for CVD (Balcazar et al., 2015; Hayashi et al., 2010; Khetan et al., 2016). The problem of high prevalence of CVD and its risk factors along with poor quality metric attainment is multifactorial, and required a multifaceted solution. Considering this, what is an evidenced based multidimensional approach to improve cardiovascular quality measure documentation in a Native American population?

### **Evidence Based Initiative**

To determine the best approaches for reducing cardiovascular risk factors in the Native American population and attainment of quality measures, a literature review was undertaken. The PRISMA method was used to guide the literature review. Studies selected for inclusion in the review were from peer reviewed academic journals, included adult patients, and reported with the English language. An initial search included 203 results after removal of duplicates, of

which 164 did not meet inclusion criteria, and 31 were excluded due to low statistical or methodological rigor. The remaining eight articles' reference lists were reviewed resulting in an addition of one more article. A total of nine articles were included in the review and are synthesized in Appendix A.

### **Effective Strategies for Lifestyle Modification to Decrease CVD Risk**

**Educational sessions based on “Your Heart, Your Life” educational materials.** Three studies involve the use of the National Heart, Lung, and Blood Institute's cultural adaptations of the original “Your Heart, Your Life” educational curricula. One is adapted for American Indian/Alaska Natives, “Honoring the Gift of Heart Health” (National Heart, Lung, & Blood Institute, 2014). The educational materials were designed for delivery by the Community Health Representative in the community with the hope of decreasing health disparities experienced by minorities (National Heart, Lung, & Blood Institute, 2014). The educational materials are comprehensive and evidenced based, reflecting decades of research on health promotion and CVD prevention (National Heart, Lung, & Blood Institute, 2014). The materials are designed for adult education, are culturally appropriate, and flexible, with the option to make modifications to fit the needs of individual communities (National Heart, Lung, & Blood Institute, 2014).

One study evaluated the impact of Community Health Representative delivered “Healthy Heart, Healthy Family” educational material to low income Filipino Americans with CVD risk factors such as obesity, hypertension, hyperlipidemia, diabetes, or family history of CVD in two hour small group sessions over eleven weeks (Fernandes et al., 2012). A pre and post intervention health habits survey was used to measure change in sodium consumption, fat consumption, weight management, physical activity, smoking, alcohol use, and readiness to adopt a healthy lifestyle (Fernandes et al., 2012).



According to Fernandes et al. (2012), statistically significant improvements were found on nine out of 25 items on the health habits survey, including significantly greater proportions of participants started reading nutrition labels ( $p < 0.02$ ), eating fruits for dessert ( $p < 0.001$ ), snacking on fruits and vegetables ( $p < 0.001$ ), replacing salt with herbs and spices ( $p < 0.02$ ), using monounsaturated and polyunsaturated cooking oils ( $p < 0.03$ ), and baking instead of frying foods at the 12 month post intervention survey ( $p < 0.001$ ). Also significantly, the proportion of participants who participate in regular physical activity (aerobic exercise) increased from a baseline of 16.7% to 43.2% ( $p < 0.001$ ) at the one year follow up (Fernandes et al., 2012). Finally, according to Fernandes et al. (2012), significantly greater number of participants were able to answer at least 12 out of 13 CVD knowledge questions correctly at the 12 month follow up and rated their confidence in their abilities to cook heart healthy foods as significantly higher than baseline ( $p < 0.001$ ).

In another study, researchers utilized each of the four culturally tailored educational programs formulated by the National Heart, Lung, and Blood Institute at fifteen sites including African Americans, Hispanics, Filipinos, and American Indians in the populations studied (Hurtado et al., 2014). Hurtado et al. (2014) stated the material was presented by CHRs in small groups over ten sessions that covered risk factors for heart disease, recognizing the signs of a heart attack, tips for preparing healthy meals and how to eat healthy on a budget, the importance of controlling blood pressure and blood cholesterol, managing diabetes, controlling weight, decreasing smoking, and increasing physical activity (Hurtado et al., 2014). This study also used the “My Health Habits” survey as a data collection instrument pre and post intervention, and used the tool to assess five outcome domains, heart health knowledge, CVD food-related risk

factor behaviors, physical activity, confidence in preparing heart healthy foods, and stages of change.

Results were favorable, indicating a statistically significant increase on heart health knowledge from 48% to 74% from baseline to post-test ( $p < 0.001$ ), frequency of food consumption associated with cardiovascular health increased significantly ( $p < 0.001$ ) from 2.5 to 2.9 on a scale of 1 to 4 in sodium consumption, fat consumption, and weight management subdomains (Hurtado et al., 2014). Results also indicated an increase in the proportion of participants classified as physically active from 33% to 65% from baseline to post-test ( $p < 0.001$ ), and a significantly greater proportion who reported being confident or very confident in their ability to prepare heart healthy foods ( $p < 0.001$ ), 40% on baseline to 88% on post-test (Hurtado et al., 2014). Finally, according to Hurtado et al. (2014), 41% of participants reported they were in the action or maintenance stage of change at baseline, which increased to 85% at post-test ( $p < 0.001$ ).

The final study which utilized the health education curriculum from the National Heart, Lung, & Blood Institute used “Honoring the Gift of Heart Health,” the material tailored for use in the American Indian/Alaska Native population. The study was a randomized controlled trial and the material was presented in five classes that covered two modules of the program each (Brega et al., 2013). The study examined whether participation in the educational sessions improved CVD knowledge among Native Americans who were overweight or obese. The study also secondarily evaluated whether the participants’ health literacy affected how much they benefitted from the curriculum, an important aspect as 48% of Native Americans are estimated to have limited health literacy (Brega et al., 2013).

Measures from the Behavioral Risk Factor Surveillance System survey were used to assess knowledge of heart attack and stroke symptoms at baseline and three months post intervention, and health literacy was assessed with the use of a single item, “How confident are you filling out medical forms by yourself?” which has been shown to be an accurate indicator of health literacy (Brega et al., 2013). Linear mixed models analysis showed the proportion of participants who correctly identified heart attack symptoms increased significantly higher ( $p < 0.001$ ) for those randomized to the educational group than those in the control group (Brega et al., 2013). According to Brega et al. (2013), the group who received the educational intervention showed significantly greater improvement than the control group on heart attack symptom knowledge, stroke symptom knowledge, and general CVD knowledge ( $p < 0.05$ ). Importantly, health literacy did not affect knowledge gain from this intervention as those with low and adequate health literacy experienced the same degree of improvement in knowledge, which suggests that individuals with low and high health literacy are equally able to acquire knowledge in response to appropriate interventions (Brega et al., 2013).

All three studies showed benefits to those who participated in the educational sessions specially formatted for use in minority populations (Brega et al., 2013; Fernandes et al., 2012; Hurtado et al., 2014) The studies showed statistically significant improvement in health habits including reduced sodium and fat consumption, increased physical activity, increased heart attack and stroke symptom knowledge, and increased general CVD knowledge. These studies indicate a culturally appropriate, CHR led educational intervention can reduce modifiable risk factors for CVD.

**Nurse practitioner/ community health representative team approach.** A randomized controlled trial utilized CHRs as part of a nurse practitioner/CHR team that included

pharmacologic management in addition to tailored educational and behavioral counseling for lifestyle modification achieved promising results (Allen et al., 2011). The CHR concentrated on helping the patients to problem solve barriers to adherence to treatment, spending additional time with each patient reinforcing the nurse practitioner's instructions and assisting patients to design reminders, prompts, alarms, any system that worked for the patient to help them adhere to the treatment regimen (Allen et al., 2011). The aim of the study was to improve lipid levels, blood pressure, hemoglobin A1C levels, and patient perceptions of the quality of their chronic illness care as measured by the Patient Assessment of Chronic Illness Care Survey from baseline to one year.

Within one year, patients in the intervention group had significant improvement in total cholesterol ( $p < 0.001$ ), low density lipoprotein cholesterol ( $p < 0.001$ ), triglycerides ( $p < 0.013$ ), systolic and diastolic blood pressure ( $p < 0.003$ ;  $p < 0.013$ ), hemoglobin A1C ( $p < 0.034$ ), and perceptions of their chronic illness care ( $p < 0.001$ ), in summary achieving significant improvement in their CVD risk profiles (Allen et al., 2011). This study indicates a CHR/ Nurse Practitioner team can successfully reduce risk factors for CVD through pharmacologic management and therapeutic lifestyle change.

**Community based programs to promote healthy lifestyle behaviors.** Health behavior interventions led by CHRs have been shown to be a successful strategy to reduce CVD risk factors. One study used a program entitled, "Salud para su Corazon" that was specially formulated for use with the United States Hispanic population. The program was adapted for use with the Mexican population and studied in a high risk, impoverished, Mexican community (Balcazar et al., 2015). Educational sessions were delivered by CHRs weekly in a group format lasting approximately two hours for a total of twelve weeks and aimed to educate clients on heart

healthy habits, as well as facilitate behavioral change in diet and physical activity (Balcazar et al., 2015).

The percentage of those who reported engaging in aerobic exercise increased from pre-test to post-test, and the number of participants who felt they “cannot take the first step” to modify lifestyle behaviors decreased from 25% to just 6.8% ( $p < 0.03$ ) at post-test (Balcazar et al., 2015). Self reported measures of sodium intake and weight control measures were increased (Balcazar et al., 2015). This study suggests a model built around community engagement and facilitated by CHRs can improve CVD knowledge and heart healthy habits in a vulnerable population.

Another study that used a CHR led health behavior intervention examined changes in health behaviors and CVD risk profile as measured by the ten year probability of having a coronary heart disease event (Hayashi et al., 2010). The change in health behaviors was measured by a stage of readiness questionnaire, change in CVD risk factors included total cholesterol, high density lipoprotein cholesterol, blood pressure, and body mass index (Hayashi et al., 2010).

Results indicated that the intervention group made significant improvement in nutrition ( $p < 0.001$ ) and physical activity ( $p < 0.001$ ) compared with the control group. According to Hayashi et al. (2010), the odds of making a high degree of improvement in eating habits were more than three times greater for the intervention group than the control group ( $p < 0.001$ ), and achieving a high degree of improvement in physical activity was twice as likely for the intervention group than for the control group ( $p < 0.001$ ). According to Hayashi et al. (2010), there was an improvement in the estimated ten year coronary heart disease risk score that reached statistical significance for both groups (control:  $p < 0.005$ , intervention:  $p < 0.009$ ) with

the most improvement amongst the intervention group who were in the upper quartile of baseline risk ( $p < 0.001$ ). The results suggest a culturally appropriate lifestyle intervention can improve health related behaviors, systolic blood pressure, and ten year CHD risk assessment.

Finally, a systematic review of all randomized controlled trials reported on studies testing CHR led interventions focused on chronic disease management in vulnerable populations, with 26 studies focusing on cardiovascular disease prevention (Kim et al., 2016). The CHRs in the studies delivered a range of interventions including education, counseling, navigation assistance, case management, social services, and social support, with CHRs partnering with primary care providers or clinic staff in many of the studies (Kim et al., 2016). A total of 16 studies found a significant effect of CHR intervention on CVD risk reduction, five studies found significant improvements in lipid profile, blood pressure, hemoglobin A1C, and CVD risk for the intervention groups, one study found a significant improvement in self-reported moderate and vigorous physical activity, and significant improvements in blood pressure control were seen in four studies (Kim et al., 2016).

Common characteristics of successful interventions included supervision of CHRs by providers or clinic staff, and a correlation was seen with shorter training of CHRs with simpler interventions such as education, and longer training with more complex roles in the studies including data collection, care management or coordination, and navigation assistance (Kim et al., 2016). This systematic review indicates CHR led interventions may decrease the risk of CVD through improvement of CVD risk factors.

The studies presented in the literature review illustrate the value of CHR led interventions for CVD prevention, but another aspect of care must be examined. When quality measures are met by providers in a clinical practice, they have positive financial impact on the practice, but

also favorably impact the quality of patient care (Saver et al., 2015). For these reasons, quality measure attainment is important to the organization of interest and must be addressed.

### **Quality Measure Attainment**

Quality measures are tools used to help quantify healthcare outcomes and goals and to assure provider accountability for practice (Centers for Medicare & Medicaid Services, 2017). Quality measures are another area of disparity in the Native American population. The Agency for Healthcare Research and Quality (AHRQ) National Healthcare Disparity 2009 annual report found that American Indians/Alaska Natives have decreased quality measure values when compared to Caucasians for about 30% of quality measures and had decreased access to care than Caucasians for 62% of access measures.

The Indian Health Service utilizes specific quality measures based on the Government Performance and Results Act (GPRA)/ GPRA Modernization Act (GPRAMA) (Indian Health Service, 2017). The Government Performance and Results Act is a federal law that requires organizations that receive federal funds, such as the organization of interest, to demonstrate they are using federal funds effectively and responsibly (Indian Health Service, 2017). This law was enacted in 1993 with the hope of improving federal program management and reducing waste throughout federal programs (U.S. Department of Labor, 2014). The Government Performance and Results Act required federal agencies to create five-year strategic plans to achieve organizational goals in addition to annual strategic plans and annual reporting of progress to the federal government (Kamensky, 2011). The Government Performance and Results Act Modernization Act was enacted in 2010, and strengthened GPRA thru requiring agencies such as tribal clinics to use performance data to drive decision making (Indian Health Service, 2017). The GPRA Modernization Act required more frequent reporting (quarterly from annually)

revised agency strategic planning requirements, and designated cross-cutting agency level goals and federal level goals (Kamensky, 2011). The GPRA Modernization Act built on the foundation laid by GPRA, and both acts influence care at Indian Health Service clinics (Indian Health Service, 2017). The Government Performance Results Act and the GPRA Modernization Act are a critical component of the Indian Health Service's annual federal budget request, which includes more than 20 GPRA quality measures and six GPRAMA measures (Indian Health Service, 2017). The measures encompass reducing negative impacts of diabetes, increasing access to dental services, increasing immunization rates, increasing cancer screening rates, assessment and treatment of behavioral health issues, assessment and education on healthy habits, and decreasing the negative impacts of cardiovascular disease through preventive measures (Indian Health Service, 2017).

The Comprehensive Assessment of CVD is a GPRAMA measure that quantifies the percentage of eligible patients who have had a comprehensive assessment for four CVD risk factors including having a blood pressure documented at least twice in the past two years, tobacco use screening during the quarterly report period, having a BMI calculated, and lifestyle adaptation counseling during the report period (Indian Health Service, 2015). Only patients with documentation of all four aspects will meet the GPRAMA quality measure specifications (Indian Health Service, 2015). According to 2015 Indian Health Service data, only 55% of eligible patients throughout the U.S. had a comprehensive CVD assessment as defined by the GPRAMA quality measure (Indian Health Service, 2015).

Data from organizational GPRA quarterly reports indicate that the organization clinicians are not meeting this quality measure due to either poor rates of lifestyle counseling or poor documentation of lifestyle counseling. Interventions for CHR led lifestyle modification to reduce



CVD risk have the potential to favorably impact CVD risk in this population, and to increase GPRAMA Comprehensive CVD Assessment quality measure attainment at the organization of interest. Community Health Representatives can also document any education they provide in the electronic health record, thus helping to satisfy the quality measure metric.

### **Summary of Evidence Based Initiative**

The cause of the current disparity in cardiovascular disease, risk factor prevalence, and low quality measure attainment is multifactorial. The solution has addressed numerous barriers in order to effectively improve quality measure attainment. Prior to the DNP student's quality improvement project, the providers of care were not documenting patient education in a queryable field and CHRs were not documenting patient education in the electronic medical record at all. Current evidence was utilized as the basis for the practice change as well as a multidimensional approach to address a multifactorial problem. Thus, the clinical question is: what is an evidence-based multidimensional approach to improve cardiovascular quality measure documentation that is feasible within the identified Native American primary care clinic?

### **Conceptual Models**

Conceptual models identify a set of interrelated concepts and their relationships to the phenomena of interest (McEwen & Wills, 2014). The development of a multidimensional approach to improve cardiovascular quality measure documentation in a Native American primary care clinic is the phenomenon of interest. The conceptual model that was used to better understand this population of patients and their barriers to cardiovascular disease risk factor modification is Pender's Health Promotion Model (Pender, 1990). As conceptual models can assist in understanding a particular phenomenon, an implementation model can assist in

translating evidence into practice. The framework used to guide this multidimensional practice change was Kotter's Eight Step Process for Leading Change.

### **Pender's Health Promotion Model**

The Health Promotion Model (HPM) is a middle range nursing theory developed by Nola Pender in 1982 (Pender, 1990; Peterson & Bredow, 2009). The HPM has been used to assist providers in helping patients to adopt healthy behaviors (Peterson & Bredow, 2009). The model is particularly appropriate for this project as many of the identified CVD risk factors are amenable to lifestyle modifications. The HPM theory has three major interactive concepts: individual characteristics and experience, behavior-specific cognitions and affect, and behavioral outcomes (Peterson & Bredow, 2009). These major concepts have sub-concepts that also affect one another. A diagram of the HPM can be found in Appendix B.

**Individual characteristics and experience.** Individual characteristics and experience include prior related behaviors and personal factors including biologic, psychological, or sociocultural personal factors (Peterson & Bredow, 2009). In terms of implementing an educational intervention focused on CVD risk factor reduction, there are multiple populations that were addressed by this project. Community Health Representative education was affected by the CHRs' personal characteristics including aptitude and desire to learn, knowledge of CVD risk factors in order to effectively communicate these risks, and prior experience teaching community members. The project affected providers and their daily workflow and documentation. Providers' individual characteristics and prior experience also affected this change initiative. Providers may have had positive or negative experiences with organizational change that made them more or less willing to participate in this change. Finally, the CHRs and providers who participated in the educational interventions all have individual characteristics and

experiences that may have pre-disposed them to be more or less accepting of the intervention and helping others to make lifestyle changes.

**Behavior specific conditions and affect.** Behavior-specific conditions and affect encompasses a variety of sub-concepts including perceived benefits of action, perceived barriers to action, perceived self-efficacy, activity-related affect, interpersonal influences, and situational influences (Peterson & Bredow, 2009). In terms of a multidimensional intervention to improve cardiovascular quality measure documentation, the intervention is focused on two different populations, the providers, and the CHRs. Each person involved in the intervention has weighed their perceived barriers to action against the perceived benefits of action.

For example, providers and CHRs had a barrier to change of lack of knowledge of quality measures and how they affect their practice and the clinic budget. However, the benefits include a healthier patient population and maintaining federal funding for the clinic, which is essential to their livelihood. Similarly, the CHRs involved in the intervention may have struggled to perceive long term benefits of healthy eating and behavior modification to heart health. The intervention focused on increasing heart health knowledge of the CHRs to enable them to perceive the many benefits of pursuing a heart healthy lifestyle and to convey that knowledge to their patients. The CHRs' perceived self- efficacy, interpersonal, and situational influences also affected their likelihood of pursuing health promoting activities. Also, the CHRs' social contacts and interactions influenced their acceptance of health promotion. Involving the CHRs in the intervention helped to increase the eventual acceptance of the intervention and hopefully the self-efficacy of the CHRs.

**Behavioral outcomes.** Behavioral outcomes include commitment to a plan of action and health-promoting behavior (Peterson & Bredow, 2009). When considering the behavioral

outcomes for an intervention to improve cardiovascular quality measures in a primary care setting, the goal would include commitment from CHRs and providers to a plan of action that includes lifestyle interventions to decrease modifiable risk factors for CVD which results in health promoting behavior. An implementation model helped to establish engagement from key stakeholders to help ensure that outcomes are met.

### **Kotter's Eight Step Process for Leading Change**

Kotter's Eight Step Process for Leading Change is a conceptual model that was used to guide the implementation of the multidimensional intervention to improve cardiovascular quality measure documentation in a Native American primary care clinic. According to Kotter International (2017), leadership must be inclusive, focusing on the "why" of organizational change in order to create lasting and positive transformation. Kotter's Eight Step Process for Leading Change model consists of eight concepts: create a sense of urgency, build a guiding coalition, form a strategic vision, enlist a volunteer army, enable action by removing barriers, generate short-term wins, sustain acceleration, and institute change (Kotter International, 2017). The relationships in the framework are displayed in Appendix C.

**Create a sense of urgency.** Kotter International (2017) refers to creating a sense of urgency as helping others see the need for change and conveying the importance of acting immediately.

**Build a guiding coalition.** A coalition of effective stakeholders is necessary to guide, coordinate, and communicate the change (Kotter International, 2017). The guiding coalition is critical to the progression and acceptance of the change initiative.

**Form a strategic vision.** Forming a strategic vision clarifies how the future direction of the organization will be different than the past (Kotter International, 2017). The guiding coalition was formed and communicated the strategic vision for project completion.

**Enlist a volunteer army.** Large scale change can only take place when large numbers of people rally around a common opportunity and goal (Kotter International, 2017). Each member of the clinic staff had a valuable role to play in this quality improvement project.

**Enable action by removing barriers.** Removing barriers such as inefficient hierarchies and processes provides the freedom to generate real impact (Kotter International, 2017). Barriers must be removed to move ahead with the new change initiative.

**Generate short term wins.** A short term win or result must be recognized, collected, and communicated to the team in order to track progress and to energize team members (Kotter International, 2017). Communicating short term wins helped team members to fully commit to the change.

**Sustain acceleration and Institute change.** Kotter International (2017) states that sustaining acceleration is continuing to improve structures and policies after the first success. It is important to keep the momentum of change after sustaining short term wins. Institution of change involves connecting new behaviors with the organizational success, thus forming new habits (Kotter International, 2017). For change to be sustained, leadership must connect the organizational success to the change. Kotter's Eight Step Process for Leading Change was used to ensure optimal implementation of the practice change.

The Health Promotion Model and Kotter's Eight Step Process for leading change were chosen as guiding frameworks for their relevance and ease of applicability to the project. The Health Promotion Model assisted in specifying process and outcome indicators and Kotter's

Eight Step Process for Leading Change guided the implementation of the project as well as identified variables for intervention.

### **Need and Feasibility Assessment of Organization**

#### **Assessment of Organizational Needs and Resources**

A Native American primary care clinic in the Midwest United States has identified a problem with low quality measure metric attainment, specifically quality measures related to cardiovascular disease. The organization also has identified a high prevalence of CVD and CVD risk factors among the clinic patients. This is substantiated by organizational GPRA quarterly reports which indicate 8.9% of tribal members are currently being followed for coronary heart disease, the majority of whom (74%) have comorbid diabetes. Organizational GPRA quarterly reports also indicate that CVD risk factors are prevalent at the clinic, with a reported 19.1% of tribal members with diabetes, 26.4% of tribal members being treated for hypertension, and 31.6% of tribal members currently using tobacco products. Implementation of a multidimensional intervention to improve cardiovascular quality measure documentation has helped address this multifaceted problem.

An organizational assessment of the tribal health clinic was completed using the Burke Litwin Model of Organizational Performance and Change (1992). The model provided a framework for the comprehensive assessment of the organization. The model is composed of 12 variables that are displayed in Appendix D (Burke & Litwin, 1992). The diagram demonstrates the multidirectional and interrelated nature of the variables as well as the positive and negative feedback relationships between the variables. The organizational assessment identified strong context for change and a high level of stakeholder facilitation of change within the organization.

**Individual and Organizational Performance.** Performance refers to individual and organizational efforts to attain organizational goals (Burke & Litwin, 1992). The Indian Health Service utilizes specific quality measures based on the Government Performance and Results Act (GPRA)/ GPRA Modernization Act (GPRAMA) (Indian Health Service, 2017).

The Comprehensive Assessment of Cardiovascular Disease (CVD) is a GPRAMA measure that measures the percentage of eligible patients who have had a comprehensive assessment for four CVD risk factors including having a blood pressure documented at least twice in the past two years, tobacco use screening during the quarterly report period, having a BMI calculated, and lifestyle adaptation counseling during the report period (Indian Health Service, 2015). Only patients with documentation of all four aspects will meet the GPRAMA quality measure specifications (Indian Health Service, 2015).

According to 2015 Indian Health Service data, only 55% of eligible patients nationwide had a comprehensive CVD assessment as defined by the GPRAMA quality measure (Indian Health Service, 2015). According to organizational GPRA quarterly report data, the clinic's comprehensive CVD assessment data is even lower at 45.4%. Data from the quarterly GPRA reports showed the providers were providing care and documenting well on three of the four aspects of comprehensive CVD assessment including assessing blood pressure (97.2%), assessing body mass index (97.2%), and tobacco use assessment (84.2%), but were not adequately completing or documenting lifestyle counseling for modifiable risk factors, with just 45.3% of eligible patients having this documented. There was no standardized education provided to patients at risk of heart disease or addressing modifiable risk factors for those with heart disease. An educational intervention for CHRs addressed this particular gap in care. It should also be noted that documentation of patient education is not the sole responsibility of the

providers; the CHR's also have the ability to document on patient education in the electronic health record. The intervention targeted at improving documentation included providers and CHR's to address this system wide issue of poor GPRA/GPRAMA capture.

Unfortunately, the current providers were unaware of GPRA/GPRAMA measures. When approached by the student, none of the providers knew what these measures were, or why they are important to their practice. The providers stated they chart any education they provide to their patients as free text in their progress notes, which are not queryable formats that could be counted toward quality metrics. A project aimed at decreasing modifiable risk factors for CVD had to have an intervention that addressed the providers and the comprehensive CVD assessment quality measure.

The Government Performance Results Act requires federal agencies that receive federal funds to demonstrate that they are using their funds effectively through submitting quarterly reports on quality measures, annual performance plans, and five- year strategic plans (Indian Health Service, 2017). Through the organizational assessment, it was discovered that while the clinic does submit quarterly reports on quality measures, they did not have a current five- year strategic plan in place. Thus, another multidimensional approach to the project included an intervention to collaborate with key clinic stakeholders to create a five -year strategic plan which was submitted for the health director's review.

The health director ascertained the need for improved education for tribal members at risk of heart disease. She stated an increasing number of tribal members have needed to be rushed to the emergency room with chest pain and her perception was that the number of tribal members living with heart disease is increasing. Additionally, the data previously stated above shows the number of patients with CVD or CVD risk factors is substantial. According to an



interview with the clinic's Nurse Practitioner and through several conversations with the health director, prevention of heart disease is an issue that must be addressed at the clinic and that all clinic stakeholders have an interest in improving. The patient education intervention was most efficiently accomplished through a CHR educational session with the intention to reach more tribal members in a culturally acceptable way with an evidence-based program.

### **SWOT Analysis of Proposed Intervention**

A SWOT analysis was conducted following the organizational assessment. A SWOT analysis is a tool used to evaluate an organization's strengths, weaknesses, opportunities, and threats as they pertain to a change initiative (Zaccagnini & White, 2017). The goal behind performing a SWOT analysis is to be aware of potential roadblocks and to minimize weaknesses and maximize strengths. The SWOT analysis for a multidimensional approach to improve quality measure documentation can be found in Appendix E.

**Strengths.** The primary care office stakeholders identified this problem and have expressed interest and support in creating a solution. Tribal council has also expressed interest in the project as well as accepted and cooperated with time and clinic resources to assist the DNP student to complete the project. Overall, there was strong organizational support to complete the project. Other strengths included a full time certified diabetes educator on staff to help address the at-risk population of diabetic patients, and a gym that is available free of charge to tribal members to address lack of physical activity as a risk factor. Finally, the existence of the Community Health Representative program was a major strength. Community Health Representatives are well trained paraprofessionals who represent a crucial bridge between the community and providers of care. Community Health Representatives are an asset to any organization, but perhaps especially so to minority organizations where trust between patients

and providers may be more challenging to obtain. Community Health Representatives are also able to document in the electronic health record, thus assisting in meeting quality measure metrics.

**Weaknesses.** The primary weakness was a reported history of reluctance of patients to attend special programs or educational sessions. According to the certified diabetes educator who has hosted several educational sessions on diabetes, patient attendance was a major challenge. Some patients have the belief that if they have a family history of heart disease, there's nothing to be done to prevent them from developing heart disease. It can be challenging to address modifiable risk factors if the patients have an external locus of control. Additionally, though the tribal clinic had the CHR program in place, they functioned mostly as patient transporters and not in their intended roles as patient advocates and educators. It was challenging to change the existing state of affairs of CHR job responsibilities. Finally, the providers were unaware of GPRA quality metrics and what they mean to their practice. It was challenging to teach the providers about GPRA measures, why they matter, and how to document in order to better meet the metrics all in one educational effort.

**Opportunities.** According to the clinic APRN and health director there were many tribal members who could benefit from heart disease risk factor reduction. Additionally, according to clinic data, several risk factors for heart disease were present in many tribal members including hypertension, tobacco use, and diabetes. A program for CVD risk reduction in conjunction with provider education on quality metrics and how to appropriately document to receive credit for performing these interventions may positively affect the patient population and the clinic itself. As evidenced by the clinic data referenced above, there was a substantial number of patients who may be positively affected by a program for heart disease prevention. As CHRs were the focus of

the educational intervention, there is potential for high attendance at future patient education events led by CHRs.

**Threats.** The tribe did not receive any outside funding for heart disease prevention as it does for diabetes prevention. Inadequate funding to implement and sustain a program was the largest threat to program viability. The project budget demonstrated sufficient value and gained financial buy in from tribal stakeholders.

In summary, the primary care clinic stakeholders have identified a gap in CVD risk factor education and quality metric attainment within their organization and were ready and willing to participate in a solution to this problem. Strong evidence to support this initiative has been identified through a comprehensive organizational assessment, SWOT analysis, and integrated literature review.

## **Project Plan**

### **Purpose of Project**

The purpose of this DNP scholarly project was to improve cardiovascular quality measure documentation in a Native American primary care clinic. This was accomplished by answering the clinical question and sub-questions:

What is an evidence-based multidimensional approach to improve cardiovascular quality measure documentation in a Native American primary care clinic?

- Do Community Health Representatives who complete a cardiovascular health educational program experience a positive change in self-reported health habits?
- Does a provider education session on quality measure metric documentation improve lifestyle modification patient education documentation rates at a Native American primary care clinic?

- Will the development of a five- year plan by the DNP student and key stakeholders be accepted by the health director to address quality care at a Native American primary care clinic?

### **Objectives**

A multidimensional approach to improve cardiovascular quality measure documentation in a Native American primary care clinic was addressed by the following objectives:

- To design and implement provider education session regarding GPRA/GPRAMA quality measures, how these measures affect their practice, and how to appropriately document education for Comprehensive Assessment of CVD quality measure attainment by January 17, 2018
- To perform pre-implementation and post-implementation chart review of current clinic patients with CVD diagnosis or CVD risk factor diagnosis in order to obtain baseline measurement and post intervention measurement of provider and CHR delivered lifestyle modification education by February 9, 2018
- To implement “Honoring the Gift of Heart Health” curriculum with Community Health Representatives over 5 weeks in 2 hour sessions. Intervention to be evaluated with pre and post surveys. To be started January 17, 2018 and completed by February 14, 2018
- To collaborate with organizational stakeholders to design and submit 5 year GPRA/GPRAMA organizational goals for health director review by February 28, 2018.

### **Type of Project**

The proposed project was a quality improvement project. Quality improvement is a continuous or systematic process that leads to improvement in healthcare services and even the health status of the target population (Moran, 2017). Quality improvement should focus on

systems or processes of care, the patients, the care team, and the use of data to drive change (Moran, 2017). This multidimensional intervention involved Community Health Representatives and medical providers of care at the clinic. The intervention impacted the providers' daily work flow and will hopefully positively influence the organization's long term capture of CVD quality measures. The intervention utilized a quality improvement approach to accomplish the organizational goals.

### **Setting and Needed Resources**

The setting for this DNP scholarly project was at a Native American primary care clinic in the Midwest United States. The resources for this project included access to electronic medical records to obtain patient data related to cardiovascular quality measures as well as a laptop with access to a secure hard drive and an organizational e-mail address. Staff time commitment included time from administrative staff, clinic providers, and Community Health Representatives to participate in meetings and educational sessions. A team was established at Grand Valley State University to assist the DNP student in completing the project and included an organizational mentor (certified diabetes educator) with an expertise on lifestyle modification interventions, a committee member with an expertise in health systems leadership and quality improvement, and a committee chair with an expertise in the DNP scholarly project. An informal team was also established that included a DNP prepared advanced practice nurse currently practicing at the clinic, the tribal operations manager, and the clinic healthcare director.

### **Design for the Evidence Based Initiative**

Kotter's Eight Step Process for Leading Change was used to guide the implementation of the multidimensional intervention to improve cardiovascular quality measure documentation in a Native American primary care clinic (Kotter International, 2017).

- **Create a sense of urgency.** Kotter International (2017) refers to creating a sense of urgency as helping others see the need for change and conveying the importance of acting immediately. The organizational stakeholders have identified that CVD is a growing problem in their patient community and were seeking ways to decrease modifiable risk factors amongst the patients. The health director expressed concern that the quality measures were not being met, both for patient quality of care and for the financial future of the organization. The stakeholders understood the importance of acting urgently to initiate this change. Urgency was created through discussing the current capture of GPRA/GPRAMA quality measures and ways to improve upon it with key stakeholders by January 17, 2018.
- **Build a guiding coalition.** A coalition of effective stakeholders is necessary to guide, coordinate, and communicate the change (Kotter International, 2017). At the organization of interest, the clinic health director, the site mentor, and the DNP student were the guiding coalition to help communicate and direct the change. The guiding coalition was critical to the progression and acceptance of the change initiative. Building a guiding coalition occurred through the development and maintenance of professional relationships with key stakeholders including the health director, the tribal operations manager, the site mentor, the providers of care, and the Community Health Representatives. The guiding coalition was solidified by January 17, 2018. It was key that all major stakeholders acknowledged the change to help coordinate the implementation process.
- **Form a strategic vision.** Forming a strategic vision clarifies how the future direction of the organization will be different than the past (Kotter International, 2017). Through the

creation of a learning module for the providers of care, it was possible to communicate how to modify practice in order to better capture quality metrics. Provider quarterly meetings have also been suggested by the tribal operations manager to allow providers a designated time to review their progress on quality measure metrics. These meetings could also be used to continue to communicate the importance of lifestyle counseling for CVD quality measure metrics. Forming a strategic vision occurred through the implementation of provider education on quality measures which took place before January 17, 2018. Once the providers recognized the importance of quality measure documentation, this intervention formed the foundation for continued and lasting change.

- **Enlist a volunteer army.** Large scale change can only take place when large numbers of people rally around a common opportunity and goal (Kotter International, 2017). The DNP student enlisted volunteers by including the CHR workforce in the intervention. Every provider at the clinic was included in the provider education module to address quality measure metrics. Enlisting a volunteer army occurred through the education that was provided to all members of the team including providers and Community Health Representatives by January 17, 2018. Each team member had a valuable role in the implementation of this quality improvement process.
- **Enable action by removing barriers.** Removing barriers such as inefficient hierarchies and processes provides the freedom to generate real impact (Kotter International, 2017). Providers were unaware of GPRA quality measures and how to document in order to assure these measures are captured and successfully reported electronically. The intervention removed this knowledge barrier and enabled providers to take credit for the care they provide. Previous to the intervention, CHRs were not being utilized to their full

potential. Educating the CHRs on how to reduce modifiable risk factors for CVD and on how to deliver culturally appropriate CVD prevention education helped the CHRs to work to the highest level of their potential. Both the provider and CHR interventions took place by January 17, 2018.

- **Generate short term wins.** A short term win or result must be recognized, collected, and communicated to the team in order to track progress and to energize team members (Kotter International, 2017). Following the provider education module on January 17, 2018, provider progress on charting patient education in the proper field was reviewed through chart audit. It is important to note that CHRs were also educated on proper documentation of patient education and that their documentation will count toward meeting the GPRA/GPRAMA quality metrics. It was anticipated that the number of patients with education charted in the proper field will increase from the pre-implementation chart audit, and that the staff will take pride in their efforts to provide high level care to their patients while helping the organization to meet quality measure metrics.
- **Sustain acceleration.** Kotter International (2017) states that sustaining acceleration is continuing to improve structures and policies after the first success. Sustaining acceleration will occur if the project is effective at improving cardiovascular quality measure documentation in a primary care setting and through the development of a five year plan by January 28, 2018 to address quality measure metrics.
- **Institute change.** Institution of change involves connecting new behaviors with the organizational success, thus forming new habits (Kotter International, 2017). Instituting change will occur if the project is effective and through completing the multidimensional



measures of each aspect of the project. The project could be sustained through quarterly provider meetings with the health director to assess quality measure attainment and set goals for the next quarter. Kotter's Eight Step Process for Leading Change was used to ensure optimal implementation of the practice change.

### **Participants**

Participants included clinic medical records, CHRs, and clinic staff as well as clinic patients at risk for or with a diagnosis of CVD. Participants for the project included patients whose medical records were retrospectively reviewed and the stakeholders who were involved in the project implementation including providers of care, Community Health Representatives, and the health director of the clinic. The stakeholders who were presented with the 5 year GPRA/GPRAMA strategic plan include the health director of the clinic, the site advisor, and the daily operations supervisor.

### **Measurement: Source of Data**

Data collection to inform the project was collected by the DNP student. The data collection was used to compare before and after intervention implementation data. Permission to access data was granted after International Review Board determination of quality improvement was issued. The DNP student was granted access to Resource and Patient Management System, the electronic health record utilized by the primary care office. The data that was collected is charted education in the queryable "Education" section under the "Wellness" tab in the electronic health record. The sample consisted of patients with a diagnosis of cardiovascular disease as defined as a past history of cardiac stents, coronary artery bypass grafts, or myocardial infarction, or risk factors for cardiovascular disease including hypertension or diabetes. Tools to aid in project data collection were developed by the DNP student and can be found in Appendix

F. Two sets of data were collected. One data set was collected pre-intervention and one set was collected post intervention. The pre-intervention data was collected before January 17, 2018; this data was a review of documented education of patients with a CVD diagnosis or diagnosed CVD risk factors that were seen in the primary care office from January 1, 2017-December 20, 2017. The post implementation data included patients with CVD or diagnosed CVD risk factors that were seen in the primary care office following the provider education session. This data was reviewed from January 22, 2018-February 9, 2018. Only de-identified data was collected. Data was stored on an office computer protected by a firewall. No data was removed from the office.

In addition to the chart review, other variables included pre and post surveys from the providers and the CHRs who attended the educational sessions. The pre and post surveys for the providers were designed by the DNP student and can be found in Appendix G. The pre and post surveys for the participants (CHRs) were published by the National Heart, Lung, and Blood Institute and can be found in Appendix H.

### **Steps for Implementation of Protocol**

The completion of this DNP scholarly project included the following action items (Appendix I):

- Obtain pre-implementation data of charted education of patients diagnosed with cardiovascular disease or CVD risk factors including diabetes or hypertension by January 17, 2017
- Design provider education session regarding GPRA/GPRAMA quality measures, how they affect their practice, where and how to document education for Comprehensive Assessment of CVD quality measure attainment. Submit for stakeholder review by January 17, 2017

- Implement provider education session on GPRA/GPRAMA measures to be evaluated with pre and post surveys by January 19, 2018.
- Implement Honoring the Gift of Heart Health curriculum with Community Health Representatives over five weeks in two hour sessions. Intervention to be evaluated with pre and post “My Health Habits” surveys (Appendix H). To be started January 17, 2018 and finished February 14, 2018. Community Health Representatives will also be educated on how and where to document the patient education they provide to facilitate meeting quality measure metrics and continuity of care.
- Conduct post intervention chart review of current clinic patients with CVD diagnosis to ascertain impact of provider education session on lifestyle modification education charting January 22, 2018-February 9, 2018
- Collaborate with organizational team to create and submit 5 year GPRA/GPRAMA organizational goals for health director review by February 28, 2018
- Defend the DNP project at Grand Valley State University by March 30, 2018
- Upload DNP project to Scholarworks by April 20, 2018.

### **Project Evaluation Plan**

To evaluate this multidimensional intervention to improve cardiovascular quality measure documentation in the primary care office, each sub-question of the clinical question was evaluated separately. In order to evaluate the CHR educational intervention, pre-and-post surveys of the participants were conducted before and after the intervention to gauge change in health habits of the participants (Appendix H).

Similarly, to evaluate the provider education session, Likert style pre and post surveys were conducted of provider knowledge about quality measure documentation before and after the session (Appendix G). In addition, data review of patients' charts with CVD or CVD risk factors were evaluated to gauge change in provider documentation pre and post implementation (Appendix F). The data collected allowed for assessment of numbers of charts with patient education in the appropriate queryable field for reporting. Finally, the five year plan was evaluated by whether it is accepted by the stakeholders to address quality care sustainability at the clinic.

In addition to the evaluation methods listed previously, this project was evaluated through the lens of the American Association of Colleges of Nursing DNP Essentials (2006).

### **Ethics and Human Rights Protection**

Data collection began only after Grand Valley State University's Institutional Review Board (IRB) approval was obtained and approval was granted (Appendix J). All data was stored on an office computer, kept on the office's internal drive and password protected. The data was not shared, stored, or saved any external drives, or in cloud storage. Pre and post survey data was anonymous, no names or other identifying information was recorded or stored.

### **Budget**

An estimated budget was created to approximate the time and supplies that were needed to implement the project (Appendix K). Expenses included provider, CHR, and site mentor time as this is time spent taken away from their regular duties to complete educational sessions or questionnaires. The DNP student's time, printing costs, conference room use and binder to store Honoring the Gift of Heart Health material are in kind donations. Honoring the Gift of Heart Health materials were listed as income at \$0.00, due to their free availability from the National

Heart, Lung, and Blood Association website. The total cost to the organization was estimated to be \$0.00.

### **Stakeholder Support**

The key stakeholders including the health director, daily operations manager, and providers within the primary care office have identified a need to improve cardiovascular quality measure documentation. They supported the implementation of a multidimensional intervention to address lifestyle modification education for those at risk of CVD, enhancing the CHR role in patient education, and provider education aimed at improving capture of cardiovascular GPRA/GPRAMA quality measures. A letter indicating the organization's support can be found in Appendix L.

## **Project Outcomes**

### **Results of Project Implementation**

**Results of CHR educational program.** The results of the Honoring the Gift of Heart Health sessions were gauged by the change in habits self-reported by participants via the "My Health Habits" survey (Appendix G). The intervention was delivered over five weeks in two hour sessions by the DNP student. The sessions were attended by all CHRs associated with the tribe, totaling four. The Native American Community Health Representatives (CHR) were from four different counties, all associated with the tribal clinic. Three CHRs were able to attend all five sessions including completion of pre and post "My Health Habits" surveys. One CHR was unable to attend the majority of sessions (3) due to illness and inclement weather and was unable to complete the pre and post surveys. The percent change from pre-intervention to post-intervention was assessed on several measures including heart healthy habits, heart healthy

knowledge, and stages of change. Due to the structure of the questions, heart healthy knowledge was divided into two categories.

The heart healthy habits section included: exercise, a diet high in vegetables, low in processed foods, and low in high fat foods, and gauged the participants' confidence in understanding nutrition labels and ability to identify signs of a heart attack. The results showed a small positive change in heart healthy habits, with a 7.7% increase in heart healthy habits among the CHRs (Appendix M).

The first section of the quiz that addressed heart healthy knowledge included "yes" or "no" statements concerning beliefs of what activities and behaviors increase the risk of developing heart disease. The results indicated small positive changes in heart healthy knowledge, with a 12.1% increase in knowledge on the first group of questions (Appendix M). The second group of heart healthy knowledge questions included multiple choice questions with one correct answer concerning participants' beliefs about serving sizes, healthy waist measurements, physical activity, blood pressure, blood cholesterol, blood glucose, tobacco and alcohol use. The results indicated a 16.2% increase in knowledge on the questions in this heart healthy knowledge category (Appendix M). Finally, the CHRs were asked to rate their readiness for making heart healthy lifestyle changes by reading short paragraphs about a fictional family who are all at different stages of change and marking which family member they identify with most. The results from this section were negligible; there was no net change from pre-survey to post-survey (Appendix M).

**Impact of provider educational session on provider knowledge and patient education documentation.** The provider educational session was attended by all providers associated with the clinic, for a total of three providers. The provider educational session was

evaluated using pre and post quizzes. The quizzes were a Likert style scale and asked the providers to rate their knowledge of GPRA measures and to share where they currently document patient education in the electronic medical record. The pre-intervention results indicated only one of the three total providers were documenting patient education intentionally, the other providers reported documenting education free-text within their notes. Following the provider education session, all three providers were able to state the proper field to document patient education, and how to access that form within the electronic medical record. None of the three providers reported having knowledge of the Government Performance Results Act prior to the educational session. Following the session, all providers reported not only knowledge of GPRA, but stated moving forward that GPRA quality measures will affect their practice and documentation. All providers also agreed or strongly agreed with the statement, "I would be interested in learning more about my performance on quality measures and improving the clinic's capture of GPRA quality measures." In terms of data analysis, there was a 28.3% increase in provider knowledge (Appendix N) following the educational intervention. Overall, the results from the provider educational session were very encouraging. The providers were open to the intervention, and all were willing to change their documentation practice to facilitate increased capture of GPRA quality measures.

Patient charts were reviewed to evaluate the actual change in documentation that occurred before and after the provider education session. Ten charts of patients with multiple cardiovascular disease risk factors including history of coronary artery disease, myocardial infarction, hypertension, and diabetes were reviewed pre-intervention. The pre-intervention chart review showed only one patient had received patient education documented in the proper field. The provider who documented the education is no longer employed at the clinic. As mentioned

previously, all three current providers at the clinic are relatively new to the clinic. Though all the providers are new, they were willing to change their practice in order to increase capture of quality measures. The post-intervention chart review again reviewed 10 patient charts with multiple cardiovascular disease risk factors. The post intervention chart review showed seven patients had patient education documented by providers in the proper, queryable field. Though the charts that were reviewed showed education documented by clinic providers, it is important to note that CHR's also have the ability and knowledge following the intervention to document patient education in the electronic medical record. The sample of charts that were reviewed happened to have education charted by providers. There was no education charted by CHR's in this sample though they are able to chart in the patient record at this clinic. The results indicated a statistically significant change in properly documented education with a p value of 0.0198 using the Fisher's exact test; significance was set at  $p < 0.05$  (Appendix O). The intervention was effective with a medium effect size (60%) in terms of increasing documentation of patient education which was the missing link the clinic needed in order to increase capture of cardiovascular quality metrics.

**Results of five-year strategic plan development.** The five-year GPRA strategic plan was created in collaboration with clinic providers, the site mentor, and the clinic health director. The plan included the clinic's mission and vision, as well as several goals and objectives related to GPRA quality measure metrics. The plan allows transparency for the providers and the health director on the expectations of the Indian Health Services for comprehensive primary care of patients for the next five years as well as concrete goals to be addressed. The GPRA goals will be periodically assessed including an assessment of team and individual provider performance at quarterly meetings of key stakeholders including the health director and the providers. As the



team of providers and the health director continue to work on attainment of GPRA metrics, they will also be helping to assure the clinic receives adequate federal funding through the Indian Health Service through their five-year plan, which is a clear representation of the quality of care delivered at the clinic. The plan can be found in Appendix P.

### **Sustainability**

The key stakeholders within the primary care office have identified a desire to decrease the number of tribal members living with cardiovascular disease and to improve capture of quality measures related to cardiovascular disease. By teaching the Community Health Representatives about CVD and how to decrease modifiable risk factors, this project has enabled them to continue to share this knowledge with their patients after the project has ended.

“Honoring the Gift of Heart Health” materials were placed in a binder for future use and stored in the Certified Diabetes Educator’s office with the other patient education materials. The provider education PowerPoint was stored electronically and given to the health director to educate future providers. Once the providers were taught to effectively document cardiovascular risk education in a reportable field, they will be able to continue to do this going forward as evidenced by the results of the chart review. Ongoing monitoring of quality metrics will be used to sustain the provider education portion of the project. A five-year quality plan has addressed continued focus on achieving metrics and continued stewardship with federal funds provided through the Indian Health Service. This intervention has provided a foundation to increase capture of all quality measures, starting with the Comprehensive Assessment of CVD metric. The organization’s Nurse Practitioner has been tasked with redesigning the CHR role to include more patient education and to increase their impact on providing cardiovascular education to tribal members to improve outcomes. The health director and the Nurse Practitioner have access

to all materials to continue to carry on after the DNP student has left the organization. The Nurse Practitioner will be able to continue to expand the role of the CHRs in patient education and documentation, and will be able to train new providers in how to properly document in the electronic health record. Community Health Representatives will also be taking Basic Life Support (BLS) classes to become BLS certified healthcare providers to support the expansion of their role in community care. The health director will be facilitating quarterly meetings with the providers to assess individual and team performance on GPRA quality measures. The organization has embraced change, even instituting a heart healthy re-design of meals the tribal elders receive through working with a certified nutritionist and training of the Elders' Coordinators who prepare the meals. The organizational stakeholders have the tools and knowledge to continue to sustain change.

### **Implications for Practice**

The stakeholders of the primary care clinic have identified a problem of high prevalence of cardiovascular disease and cardiovascular disease risk factors among tribal members, as well as poor performance on GPRA quality measures including the Comprehensive Assessment of CVD. The provider education session identified the problem of poor quality measure performance. Key stakeholders are now using the multidimensional approach to improve quality care as evidenced by the chart review results. The educational sessions delivering "Honoring the Gift of Heart Health" helped to instill healthy habits in Community Health Representatives, who can disseminate this knowledge throughout the community. The providers were able to increase their knowledge of proper documentation of patient education and learn about the Government Performance Results Act, which will impact how they provide and document care. A five-year strategic plan was developed in coordination with key stakeholders to help assure continued

progress with GPRA quality measure metrics. Ultimately, a multidimensional intervention addressed primary prevention of CVD as well as the problem of low quality measure capture; results indicated a medium sized effect (60%) of improved rates of patient education documentation which will favorably impact future capture of GPRA quality measures.

### **Strengths**

A major strength of the multidimensional intervention is that it was developed at the request of the health director and in collaboration with several key stakeholders including the health director, daily operations manager, providers, and community health representatives. Results have indicated positive outcomes related to each aspect of the intervention. The CHRs are now knowledgeable on modifiable risk factors for CVD as well as how to document in the electronic medical record. The providers are now knowledgeable about GPRA quality measures and know the importance of documenting patient education appropriately in the electronic medical record in order to meet quality measure metrics. The providers have been very open to change, even requesting that the DNP student initiate a new quality improvement process, a GPRA checklist to be placed at the front of each patient's chart to alert them to which quality measures might apply in each patient encounter. The five year strategic planning process was met with enthusiasm from the providers and the health director. The strategic plan will help the clinic to clearly articulate their use of federal funds to the Indian Health Service and ultimately impact the annual budget request. There is support to continue with the expanded educational role of CHRs and to continue with the focus on GPRA quality measures from providers, CHRs, and the health director.

### **Weaknesses**

One aspect of the project was to implement “Honoring the Gift of Heart Health” educational sessions taught by the DNP student to Community Health Representatives in order to educate them on CVD, modifiable risk factors for CVD, and how to document in the electronic health record. Attendance was a challenge for one participant whose location in a county that is geographically the farthest away from the clinic presented challenges due to inclement weather. Due to the small size of the classes, the format evolved to include small group discussion which was well –received by attendees. The goal of educating the CHRs on reducing modifiable risk factors for CVD is that they will be able to disseminate this knowledge amongst their patients. Quality improvement work includes reevaluation; perhaps in the future a different method of education could be considered, such as Community Health Representative led education in the home as they already visit patients’ homes as part of their current duties. Another possibility is Nurse Practitioner feedback to the CHRs on their documentation of educational efforts in order to assure sustainability.

### **Relation to Other Healthcare Trends**

Value based care and using quality measure metrics as a gauge to rate the quality of care delivered by individual providers as well as clinician teams as a whole is a healthcare trend that is an ongoing paradigm shift for reimbursement, replacing fee for service. Value based payments promote paying providers for the quality of the care they provide rather than the quantity (Centers for Medicare and Medicaid Services, 2017). While GPRA measures may not be used outside of Indian Health Services clinics, the Healthcare Effectiveness Data and Information Set (HEDIS) is used by the majority of healthcare payers to assess and collect provider performance data (Gruessner, 2016). Similarly to GPRA, HEDIS measures help ensure providers follow screening recommendations and clinical protocols for the treatment of chronic disease. Quality

measure metric monitoring is a major part of the overall shift from the fee-for-service model to a population health model of healthcare. The quality improvement project addressed value based reimbursement specific to the Native American health system and developed a sustainability plan that was not in place prior to project implementation.

### **Limitations**

A major limitation of the project is that it is not generalizable to other Native American clinics due to the sovereign nature of the tribe. The tribal clinic is associated with a tribe that is self-governing and unassociated with other area Native Americans or healthcare systems. The charting method is unique in that some information is charted electronically while most is charted in a paper chart. There was also limited time for follow up on the impact on quality measure metrics, though the chart review did show significant change. Additionally, time constraints prevented long term follow up that would be necessary to gauge if there were a change in CVD and CVD risk factors amongst tribal members resulting from increased educational efforts from providers and CHRs.

It should also be noted that statistical analysis was not performed on Honoring the Gift of Heart Health data and the provider surveys due to very small number of participants, only three in each case. Due to the small number of participants, the results were not able to be analyzed beyond the proportion changed from pre to post intervention.

### **Reflection on Enactment of DNP Essentials Competencies**

The American Association of Colleges of Nursing (AACN) has established eight Essentials that comprise the foundational curriculum of DNP programs (AACN, 2006). These Essentials comprise the framework for assessing the attainment of DNP prepared nurses'

competency in each of the areas (AACN, 2006). In completing this scholarly project the DNP student demonstrated all eight of the Essentials.

### **Essential I: Scientific Underpinnings for Practice**

This Essential focuses on science as the foundation for nursing practice. The DNP prepared nurse will be able to integrate nursing science with knowledge from natural and social sciences and science-based theories in order to determine the significance of healthcare phenomena and develop new practice approaches (AACN, 2006). The DNP student utilized the scientific body of knowledge in order to implement a multidimensional change process. The change was theory based, both on Pender's Health Promotion Model and Kotter's Eight Step Process for Leading Change. The project also utilized evidence based interventions including the Honoring the Gift of Heart Health curriculum.

### **Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking**

Organizational and systems leadership is demonstrated through an understanding of quality improvement strategies and by leading and sustaining change at the organizational and governmental policy levels (AACN, 2006). The DNP student evaluated the current state of preventive care delivery and the organizational capture of quality measure metrics. Through this thorough assessment, the problem was multifactorial, necessitating a multidimensional, evidence based approach. Through the organizational assessment, a lack of organizational attention to quality metrics was discovered and corrected, thus affecting the organization at a systems level. Consideration was given to organizational concerns, preferences, and the vulnerability of the clinic's Native American population. The implementation plan also included a five year strategic plan to help assist the organization in sustainability.

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

Scholarship and research are essential to doctoral education (AACN, 2006). Scholarly nursing practice is exemplified by the application of knowledge to solve complex practice problems and to improve health outcomes through evidence based practice (AACN, 2006). The DNP student examined and assessed the current literature on the phenomena of interest by performing an integrative literature review and used the findings to design a quality improvement project. The project was conducted in a systematic fashion in order to apply evidence based strategies into the practice environment.

**Essential IV: Information Systems/Technology and Patient Care Technology**

The DNP prepared nurse has the knowledge and skills to utilize information systems/technology to improve individual patient care as well as transform healthcare at the systems level (AACN, 2006). The DNP project outcomes focused on changes made to documentation in the electronic medical record. The project focused on educating providers and Community Health Representatives on how to improve their documentation in order to meet quality measure benchmarks. The DNP student developed and utilized navigational skills in the electronic medical record in order to help the organization address the problem of low quality measure metric attainment by introducing the concept of a queryable field in which to record patient education and therefore help meet the cardiovascular quality measure metric.

**Essential V: Health Care Policy for Advocacy in Health Care**

The DNP prepared nurse is competent in the design and implementation of healthcare policy at the local, state, and national level as well as the ability to create meaningful policy at the practice level (AACN, 2006). The DNP student advocated for providers to change their practice in order to provide patients with lifestyle modification education to help prevent

cardiovascular disease in a vulnerable population. The DNP student also helped create policy change at the clinic with the introduction of the five year GPRA strategic plan and the institution of quarterly meetings to discuss GPRA attainment. The DNP student also participated in Nurse Practitioner Advocacy Day in Lansing, Michigan.

### **Essential VI: Interprofessional Collaboration for Health Outcomes**

Interprofessional collaboration is exemplified by the ability to meaningfully contribute to teams made up of multiple different professions and to collaborate with team members in order to best meet patient needs (AACN, 2006). The DNP student facilitated and supported collaborative team-based practice at the clinic by including upper level administration, providers of care, and community health representatives in the project. The DNP student was able to successfully lead the multidimensional intervention within the clinic while working within the intrinsic and extrinsic norms of the tribal culture. The DNP student was able to lead the project effectively through open communication and regular meetings with all interprofessional organizational key stakeholders.

### **Essential VII: Clinical Prevention and Population Health**

Clinical prevention and health promotion for population health refer to the analysis of biostatistical, epidemiological, and environmental data in order to improve the health of diverse populations (AACN, 2006). The project was centered on improving cardiovascular disease risk factors in the Native American population, the ethnicity in the U.S. with the highest rates of cardiovascular disease (Howard et al., 1999). The DNP student also analyzed several years of biostatistical GPRA measure data throughout the course of the project.

### **Essential VIII: Advanced Nursing Practice**



Advanced nursing practice is exemplified through the ability to conduct a comprehensive assessment of health and illness while incorporating culturally sensitive approaches, designing and implementing an appropriate plan of care, developing and sustaining relationships with patients and co-workers, mentoring fellow nurses, and educating and guiding individuals through complex health situations and management of chronic disease (AACN, 2006). The DNP student utilized a culturally sensitive educational program and involved Community Health Representatives in the project with the goal of increasing patient engagement. The involvement of the Community Health Representatives resulted in an informal mentorship opportunity where the DNP student and the Community Health Representatives all benefitted. The DNP student was able to use the skills and knowledge gained throughout the completion of the degree program to assess the organizational needs, design, and implement a multidimensional solution.

#### **Dissemination of Outcomes**

Dissemination of the intervention outcomes has occurred through presentation to the stakeholders of the organization. A PowerPoint presentation was designed and presented to key organizational stakeholders in order to disseminate the outcomes of the project as well as to define the next steps for continued GPRA quality measure metric attainment. The five year plan for GPRA measure attainment was developed in coordination with key stakeholders and was accepted by the stakeholders as a guide for continued quality measure metric attainment. The outcomes will also be presented at Grand Valley State University during the final defense of the project, where the DNP student's project team will be in attendance as well as potential other graduate nursing students and faculty. Lastly, a formal paper detailing the scholarly project will be uploaded to ScholarWorks ©. The student will also consider publication in an academic journal or additional dissemination opportunities at professional conferences or meetings.

## Conclusion

Organizational stakeholders have identified the growing burden of CVD and CVD risk factors among tribal members as a problem that must be addressed. Through an organizational assessment, it was found that the organization was also struggling to meet GPRA quality measure metrics related to CVD, a system specific to the Native American healthcare delivery system. A quality improvement project completed by a DNP student included an evidence based multidimensional intervention that addressed the organization's concerns including a CHR led educational intervention, an educational session for providers, a five year sustainability plan, and was aimed at improving cardiovascular quality measure documentation at the organization of interest. The results showed a small positive change in heart healthy habits, with a 7.7% increase in heart healthy habits among the CHRs. The results also indicated small positive changes in heart healthy knowledge, with a 12.1% increase in knowledge on the first group of questions and a 16.2% increase in knowledge on the second group of heart healthy knowledge questions. The results of the provider intervention were favorable, as prior to the intervention there was a lack of provider understanding and knowledge related to GPRA quality measure. Following the intervention, all providers agreed or strongly agreed with the statement, "I would be interested in learning more about my performance on quality measures and improving the clinic's capture of GPRA quality measures." Following the provider education session, there was a 28.3% increase in provider knowledge. Chart review was undertaken to determine if there was a significant difference between documented patient education before and after the provider session. The results indicated a statistically significant change in properly documented education with a p value of 0.0198. The intervention was effective with a medium effect size (60%) in terms of increasing documentation of patient education which was the missing link the clinic needed in

order to increase capture of GPRA cardiovascular quality metrics. Finally, a five year GPRA strategic plan was developed and accepted by key stakeholders. The plan addresses sustainability through quantifying attainment goals not only for cardiovascular quality measures, but for all 2018 GPRA quality measures which has the potential to impact clinic funding in the future. Quarterly meetings with providers and the health director to analyze GPRA quality measure metrics are also part of the sustainability plan accepted by the clinic's stakeholders. Additionally, the clinic Nurse Practitioner will be continuing to emphasize the educational role of CHRs through re-organization of their role and duties.

In conclusion, increasing cardiovascular disease and low quality measure metric attainment were discovered to be problems at a Native American primary care clinic in the Midwest through an organizational assessment. These problems were successfully addressed by the DNP student's quality improvement project which included a multidimensional evidence based intervention including provider and CHR education in order to improve cardiovascular quality measure metric documentation as well as a plan to address continuous quality improvement in a Native American primary care clinic.

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## Appendix A

## Literature Synthesis Table

Level of Evidence derived from *Hierarchy of evidence for intervention questions. "Evidence-Based Practice in Nursing and Healthcare: A Guide to Best Practice,"* by M. Melnyk and E. Fineout-Overholt, 2014, Wolters Kluwer Health.

Author	Type of Study/Level of Evidence	N	Interventions	Findings related to reducing heart disease risk factors
Hayashi et al., 2010	RCT (II)	869	Lifestyle counseling was provided to the intervention group by CHRs, with two outcome measures: changes in health behaviors and changes in CVD risk profile as measured by the 10 year probability of having a coronary heart disease event.	71% of intervention group made improvement in eating habits compared to 48% of control group. 68% of those in the intervention group increased their physical activity compared to 50% of control group. There was a reduction in blood pressure in both groups, the only measure that reached statistical significance was systolic blood pressure for the intervention group. Smoking prevalence decreased among both groups, with significance achieved by the intervention group. There were statistically significant improvements in 10 year event risk for both groups, with the greatest level of improvement those in the intervention group in the upper quartile of baseline risk.
Khetan et al., 2016	Systematic Review (I)	11 studies reviewed	Studies investigated CHR led interventions for CVD prevention, with studies focusing on CVD assessment, hypertension, diabetes, smoking, diet, and physical activity.	The studies focusing on CVD screening found that CHR led screening compared with usual care resulted in a higher number of people being correctly identified as high risk for CVD. Both studies focusing on hypertension found favorable results for the intervention groups, with

				<p>reductions in systolic blood pressure. The three studies focusing on diabetes indicated improvements in blood glucose in the intervention groups. Tobacco cessation education was delivered by CHRs in one study, with results indicating 41% of those in the intervention group were able to achieve cessation at 6 months, as compared to only 8.4% of the control group. The study focusing on physical activity and diet had favorable results increasing the percentage of participants meeting the Centers for Disease Control and Prevention’s daily exercise requirements (+14% from baseline), and dietary changes including a decrease in whole milk consumption and decrease in daily servings of packaged foods</p>
Hutchinson & Shin, 2014	Systematic Review (I)	31 studies reviewed	Literature that was published within the last fifteen years and provided direct comparisons between AI/AN to non-AI/AN populations were included	<p>Profound health disparities in cardiovascular diseases and associated risk factors for AI/AN populations persist, perhaps due to low socioeconomic status and access to quality healthcare. Successful programs will address social determinants and increase healthcare access. Community-based outreach to bring health services to the most vulnerable may also be very helpful in this effort</p>

<p>Brega et al., 2013</p>	<p>RCT (II)</p>	<p>139</p>	<p>Evaluated the impact of an adapted Honoring the Gift Heart Health (HGHH) curriculum on cardiovascular knowledge. Also assessed whether the curriculum was effective across levels of health literacy</p>	<p>Compared with controls, HGHH participants showed significant improvement in heart attack knowledge and marginally significant improvement in stroke and general CVD knowledge. HGHH appears to improve cardiovascular knowledge among AI/ANs across health literacy levels.</p>
<p>Fernandes et al., 2012</p>	<p>One-group pre-post-test (IV)</p>	<p>99</p>	<p><i>Healthy Heart, Healthy Family</i> is a curriculum to prevent and control CVD specifically created for Filipino Americans by the National Heart, Lung, and Blood Institute (NHLBI). Evaluation measures included 1) clinical outcomes; 2) knowledge of healthy habits; 3) satisfaction with curriculum; 4) quality of life, and 5) self-efficacy.</p>	<p>Findings from the health habits questionnaire revealed significant improvements on nine of the 25 food consumption items. Additionally, the number of participants performing physical activity in the form of aerobic exercise increased from 16.7% at baseline to 43.2% at 12 months (<math>p &lt; .001</math>). Only five participants reported smoking at baseline, and this number did not change. Eight reported drinking alcohol at baseline, but only three reported drinking at the 12-month follow up. Compared with baseline, significantly greater proportions of participants got correct answers on 12 of the 13 CVD knowledge questions at 12 months and felt more confident in their abilities to cook heart-healthy food. On the stages-of-change story questions, significantly more participants reported identifying with family members in the preparation, action, and maintenance stages of readiness (<math>p &lt; .001</math>), rather than the pre</p>

				contemplation and contemplation stages. Of the 92 participants, all but three reported being satisfied or very satisfied with the curriculum, and 91% reported sharing curriculum information with their families
Hurtado et al., 2014	One-group pre-post-test (IV)	1,004	From 2007 through 2010 trained CHWs delivered NHLBI's heart health curricula to small groups at 15 sites. Participants attended 10 sessions that covered identifying risk factors for heart disease, recognizing the signs of heart attack, preparing healthy meals, eating healthy on a budget, controlling blood pressure, controlling weight, managing diabetes, lowering high blood cholesterol, increasing physical activity, and decreasing smoking. Data collection instrument, called "My Health Habits"	Correct pretest to posttest knowledge scores increased from 48% to 74% for heart healthy knowledge. The percentage of participants at the action or maintenance stage of behavior change increased from 41% to 85%. The percentage of participants classified as physically active increased from 33% to 65% pretest to posttest (P < .001) A significantly greater proportion of participants reported being confident or very confident in being able to prepare heart healthy foods for themselves and their families posttest (88%) than on pretest (40%) (P < .001)
Balcazar et al., 2015	One group pre/post-test IV	452	Cardiovascular health promotion and disease prevention educations delivered by CHRs. Measures included weight, waist circumference, blood pressure, blood sugar, behavioral change as assessed by the My Habits survey and self report of physical activity.	The results after 12 weeks did not show significant improvement in weight, waist circumference, or blood pressure but did show a decrease in mean glycemic values, 129.9 to 116.7. Positive responses for reduction in sodium intake and weight control measures increased, but decreased for cholesterol and fat consumption at post-test. The percentage of those who engage in aerobic exercise increased form pre-test to

				post-test, and the number of participants who felt they “cannot take the first step” to modify lifestyle behaviors decreased from 25% to just 6.8% at post-test
Allen et al., 2011	RCT (II)	525	COACH trial: 525 patients were randomly assigned to one of two groups: comprehensive intensive management of cardiovascular disease (CVD) risk factors by a NP/CHW team or an enhanced usual care (EUC) control group. The NP/CHW intervention focused on behavioral interventions to effect therapeutic lifestyle changes (TLC) and adherence to medications and appointments as well as the prescription and titration of medications. The primary outcomes were changes from baseline to one year in lipids, BP, HbA1c and patients’ perceptions of the quality of their chronic illness care. The patient’s ratings of care received from their health care team was measured by the Patient Assessment of Chronic Illness Care (PACIC) Survey, a 20-item patient report instrument that assesses patient’s perceptions of the receipt of clinical services and actions consistent with quality care defined by	At 12 months, patients in the intervention group had significantly greater overall improvement in total cholesterol, LDL cholesterol, triglycerides, systolic and diastolic BP, HbA1c, and perceptions of the quality of their chronic illness care compared to patients receiving EUC. At the 12 month follow-up, a significantly higher percentage of patients in the intervention group compared to the EUC group had values that reached guideline goals or showed clinically significant improvements in LDL cholesterol (EUC=58%; I=75%, p<0.001), systolic BP (EUC=74%; I=82%, p=0.018), and HbA1c (EUC=47%; I=60%, p=0.016)

			<p>the Chronic Care Model. Secondary outcomes included the lifestyle behaviors of dietary intake measured by the Habits and History Food Frequency Questionnaire, and physical activity evaluated with the Stanford 7-Day Physical Activity Recall. Quality of life was measured by the 5 item EuroQol questionnaire</p>	
<p>Xavier et al., 2016</p>	<p>RCT (II)</p>	<p>750</p>	<p>Patients with acute coronary syndrome 1 or 2 days before discharge from hospital randomized to a community health worker-based intervention group or a standard care group. In the intervention group, during four in-hospital and two home visits, community health workers used unstructured discussions, visual methods, and patient diaries to educate patients on healthy lifestyle and drugs, and measures to enhance adherence. The primary outcome was adherence to proven secondary prevention drugs. The secondary outcomes were difference in lifestyle factors (diet, exercise, and tobacco and alcohol use), and clinical risk markers (blood pressure, bodyweight, BMI, heart rate, and lipids).</p>	<p>At one year, overall adherence (<math>\geq 80\%</math>) to prescribed evidence-based drugs was higher in the intervention group than in the control group (97% vs 92%, odds ratio [OR] 2.62, 95% CI 1.32–5.19; <math>p=0.006</math>). The intervention group had significantly greater adherence to smoking cessation (85% [110/129] vs 52% [71/138], OR 5.46, 95% CI 3.03–9.86; <math>p&lt;0.0001</math>), regular physical activity (89% [333/375] vs 60% [226/375], OR 5.23, 95% CI 3.57–7.66; <math>p&lt;0.0001</math>), and healthy diet (score 5.0 vs 3.0, OR 2.47, 95% CI 1.88–3.25; <math>p&lt;0.0001</math>). More patients in the intervention group had stopped alcohol use at 1 year (87% [64/74] vs 46% [46/67], OR 2.92, 95% CI 1.26–6.79; <math>p=0.010</math>). At 1 year, the mean systolic blood pressure (124.4 mm Hg [SD 13.5] vs 128.0 mm Hg [15.9]; <math>p=0.002</math>), weight (65.0 kg [11.0] vs 66.5 kg [11.5];</p>

				<p>p&lt;0.0001), cholesterol (157.0 [40.2] vs 166.9 [48.4]; p=0.184), LDL (81.0 [20.6] vs 87.3 [29.9]; p=0.191), HDL (42.0 [11.4] vs 38.2 [6.5]; p=0.042), and BMI (24.4 kg/m<sup>2</sup> [SD 3.7] vs 25.0 kg/m<sup>2</sup> [3.8]; p&lt;0.0001) were lower in the intervention group than in the control group.</p>
<p>Kim et al., 2016</p>	<p>Systematic Review (I)</p>	<p>67 RCTs reviewed</p>	<p>The CHBWs (CHRs) delivered a wide range of interventions including education, counseling, navigation assistance, case management, social services, and social support.</p>	<p>Sixteen studies (62%) included in the review found a significant effect of CBHW intervention on CVD risk reduction. Of the 9 studies that tested the effect of CBHW-led intervention on global CVD prevention, 5 (56%) studies found significantly greater improvements in lipid profile (total cholesterol, low-density lipoprotein, high-density lipoprotein, or tri- glycerides), blood pressure, hemoglobin A1C (HbA1C), and global CVD risk for the CBHW intervention group compared with the comparison group.</p>

Appendix B

Health Promotion Model

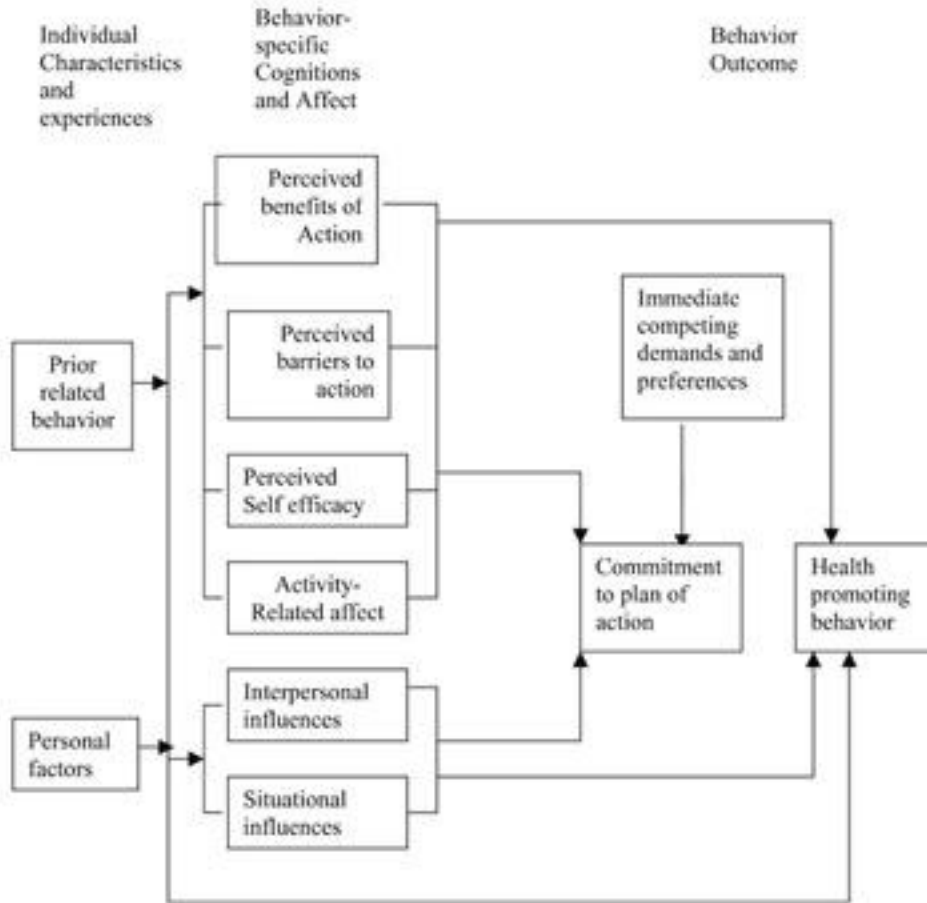


Figure 2. Health Promotion Model. Reprinted from “Overview of selected middle range nursing theories.” By McEwen, M., & Wills, E. (4<sup>th</sup>), *Theoretical Basis for Nursing* (pp. 234-236). Copyright Wolters Kluwer Health, Lippincott Williams, & Wilkins. Reprinted with permission of Pearson Education Inc.



Appendix C

Kotter's 8-Step Process for Leading Change



*Figure 3.* Kotter's 8-Step Process for Leading Change. Reprinted from "8-step process."

By Kotter International. (2017). Retrieved from: Kotter International:

<https://www.kotterinternational.com/8-steps-process-for-leading-change/>. Copyright

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Appendix D

The Burke-Litwin Model of Organizational Performance and Change

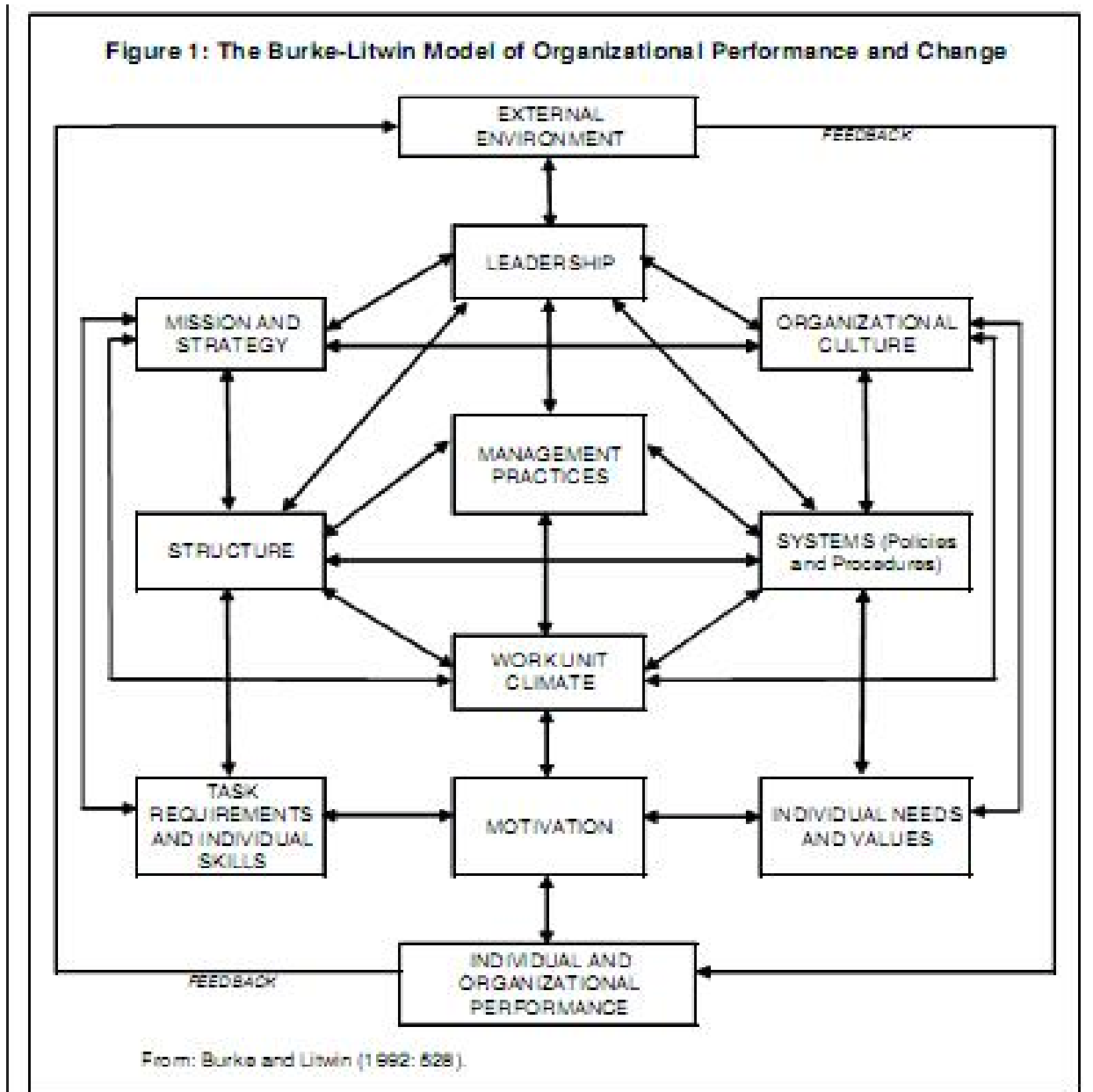


Figure 1. A model of organizational performance and change. Reprinted from “A Causal Model of Organizational Performance and Change.” By W.W Burke and G.H Litwin, 1992, *Journal of Management*, 18(3), 528. Copyright 1992 by Southern Management Association

Appendix E

SWOT analysis

<p><b>Strengths</b></p> <p>Problem identified by organizational stakeholders</p> <p>Full time Certified Diabetes Educator on staff to help address diabetes as a risk factor for cardiovascular disease</p> <p>Gym available free of charge to tribal members</p> <p>Community Health Representative program in place but currently underutilized</p>	<p><b>Weaknesses</b></p> <p>Reported history of low attendance to educational events</p> <p>Some patients may have an external locus of control and may not believe anything they do will influence their cardiovascular disease risk</p> <p>Providers currently unaware of Government Performance Results Act quality measure metrics</p>
<p><b>Opportunities</b></p> <p>Many patients have potential to benefit from lifestyle intervention program</p> <p>Many tribal members at risk for heart disease or currently have heart disease</p> <p>Strong sense of community, potential to hold events with a high level of attendance if buy-in achieved</p>	<p><b>Threats</b></p> <p>Lack of financial security for some tribe members</p> <p>Nutritious food costs more, may be a barrier</p> <p>Lack of outside funds (grants)</p>

Appendix F

Tool for Data Collection

<b>Implementation Outcome</b>	<b>Variable</b>	<b>Measurement</b>	<b>Data Location</b>	<b>Collection Method</b>	<b>Data Collector</b>	<b>Baseline Data</b>	<b>Post-implementation Data</b>
Evidence	Provider knowledge	Change in provider knowledge regarding where to document patient education in the EHR	Pre/post survey	Manual collection	DNP student		
Evidence	Practice change	Change in provider practice of documenting patient education in queryable field	Patient charts	Manual collection	DNP student		
Evidence	Provider knowledge	Change in provider knowledge regarding GPRA/GPRAMA measures	Pre/post survey	Manual collection	DNP student		
Evidence	Patient knowledge	Change in patient habits regarding heart health	Pre/post survey	Manual collection	DNP student		



Appendix G

Provider Survey Cover Letter and Provider Pre and Post Survey

Dear Colleague:

This survey is intended to gauge your knowledge on quality measure metrics, learn about your current documentation practice for patient education, and to investigate if your knowledge changes after participating in today's presentation. Your participation is voluntary and your responses will remain anonymous.

Direct benefits of participation include broadening your knowledge of quality measure metrics used at this clinic, learning tips for documentation of patient education in the electronic health record, and supporting professional development amongst the clinic staff.

There are minimal risks associated with your participation. All information collected will be anonymous, and no information will be collected that would identify you as an individual. The results will only be reported as collective data in aggregate; individual information will not be identified in any report. The information collected will be used for the stated purposes of this project only and will not be provided to any other party for any other reason at any time.

Please contact me if you wish to receive a copy of the results when the project concludes. If you have questions about this quality improvement initiative, you may contact me at 989-501-0558.

Sincerely,

Jessica Mastbergen BSN, RN, DNP student  
Grand Valley State University  
Kirkhof College of Nursing  
betzoldj@mail.gvsu.edu

Appendix G  
**Provider Pre and Post Survey**

1a) I know where to document patient education in RPMS:

Strongly Disagree    Disagree    Neither Agree nor Disagree    Agree    Strongly Agree

1b) Where do you document patient education in the electronic health record?

2) I know what the Government Performance Results Act (GPRA) is:

Strongly Disagree    Disagree    Neither Agree nor Disagree    Agree    Strongly Agree

3) GPRA quality measures affect my practice and documentation:

Strongly Disagree    Disagree    Neither Agree nor Disagree    Agree    Strongly Agree

4) I would be interested in learning more about my performance on quality measures and improving the clinic's capture of GPRA quality measures:

Strongly Disagree    Disagree    Neither Agree nor Disagree    Agree    Strongly Agree

Appendix H

Patient Pre and Post Survey



Identification Number of the Participant: \_\_\_\_\_

PROJECT NUMBER: \_\_\_\_\_

PROJECT NAME: \_\_\_\_\_

DATE: \_\_/\_\_/\_\_

**MY HEALTH HABITS (HH)**

The next questions are about the things you do that may affect your health. Your answers help us to develop programs that help people learn more about ways to stay healthy.

1. How often do you eat three or more servings of fruit a day?
  - 1  Never or almost never
  - 2  Sometimes
  - 3  Most of the time
  - 4  All of the time
2. How often do you eat three or more servings of vegetables a day?
  - 1  Never or almost never
  - 2  Sometimes
  - 3  Most of the time
  - 4  All of the time
3. How often do you eat more vegetables than meat at meals?
  - 1  Never or almost never
  - 2  Sometimes
  - 3  Most of the time
  - 4  All of the time
4. How often do you bake or grill your food instead of frying?
  - 1  Never or almost never
  - 2  Sometimes
  - 3  Most of the time
  - 4  All of the time
5. How often do you read the "Nutrition Facts" food labels when you shop for food?
  - 1  Never or almost never
  - 2  Sometimes
  - 3  Most of the time
  - 4  All of the time
6. How often do you drain the fat after cooking meat?
  - 1  Never or almost never
  - 2  Sometimes
  - 3  Most of the time
  - 4  All of the time
7. How often do you drink regular soda or pop that contains sugar?
  - 1  Never or almost never
  - 2  Sometimes
  - 3  Most of the time
  - 4  All of the time
8. How often do you drink other sugary drinks, such as powdered drinks, fruit-flavored drinks, or sports or energy drinks?
  - 1  Never or almost never
  - 2  Sometimes
  - 3  Most of the time
  - 4  All of the time
9. How often do you buy meats, such as ham, bologna, hotdogs, or sausage?
  - 1  Never or almost never
  - 2  Sometimes
  - 3  Most of the time
  - 4  All of the time
10. How often do you add salt to your food when you eat?
  - 1  Never or almost never
  - 2  Sometimes
  - 3  Most of the time
  - 4  All of the time
11. How often do you eat low-fat or fat-free cheese instead of regular or whole milk cheese?
  - 1  Never or almost never
  - 2  Sometimes
  - 3  Most of the time
  - 4  All of the time
  - 8  I do not eat cheese



12. How often do you use low-fat or fat-free salad dressing or mayonnaise instead of regular salad dressing or mayonnaise?
- 1  Never or almost never
  - 2  Sometimes
  - 3  Most of the time
  - 4  All of the time
  - 5  I do not use any of these
13. How many days a week do you exercise or do some kind of physical activity for 30 minutes or longer? (This can include physical activity at your job.)
- 0  None
  - 1  1 day
  - 2  2 days
  - 3  3 days
  - 4  4 days
  - 5  5 days
  - 6  6 days
  - 7  7 days
14. How often do you ask people to NOT smoke in your home?
- 1  Never or almost never
  - 2  Sometimes
  - 3  Most of the time
  - 4  All of the time
  - 5  No one ever smokes in my home
15. How often do you smoke cigarettes?
- 1  Not at all
  - 2  Some days
  - 3  Every day
16. How often do you drink beer, wine, liquor, or other kinds of alcoholic beverages?
- 1  Never
  - 2  Only on special occasions
  - 3  About once a month
  - 4  A few times a week
  - 5  Every day or almost every day
17. When you drink alcoholic beverages, how many drinks do you have per occasion?
- 1  One drink
  - 2  Two drinks
  - 3  Three drinks
  - 4  Four or more drinks
  - 5  I do not drink alcoholic beverages
18. How confident are you in your ability to cook heart healthy foods?
- 1  Not confident
  - 2  Somewhat confident
  - 3  Confident
  - 4  Very confident
19. How confident are you in your ability to read the "Nutrition Facts" food labels to make healthier food choices?
- 1  Not confident
  - 2  Somewhat confident
  - 3  Confident
  - 4  Very confident
20. How confident are you in your ability to recognize the signs of a heart attack?
- 1  Not confident
  - 2  Somewhat confident
  - 3  Confident
  - 4  Very confident
21. How confident are you in your ability to get your blood pressure checked once a year?
- 1  Not confident
  - 2  Somewhat confident
  - 3  Confident
  - 4  Very confident

**MY HEALTH KNOWLEDGE (HK)**

The next questions are about what you know about things that affect heart health. Your answers help us to develop programs that help people learn more about ways to stay healthy.

1. Things that raise your risk of developing heart disease include:

[MARK "YES" OR "NO" FOR EACH ITEM]

- | YES                      | NO                       |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>1</sup> Having high blood pressure           |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>2</sup> Smoking cigarettes                   |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>3</sup> Not being physically active          |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>4</sup> Your family history of heart disease |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>5</sup> Being overweight or obese            |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>6</sup> Don't know                           |

2. Things that affect your blood cholesterol level include:

[MARK "YES" OR "NO" FOR EACH ITEM]

- | YES                      | NO                       |  |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>1</sup> Having family members with high blood cholesterol |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>2</sup> What you eat                                      |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>3</sup> Your weight                                       |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>4</sup> Don't know  |

3. Things that raise your risk of getting diabetes include:

[MARK "YES" OR "NO" FOR EACH ITEM]

- | YES                      | NO                       |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>1</sup> Being overweight or obese  |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>2</sup> Having family members with diabetes                                      |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>3</sup> Having high blood pressure   |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>4</sup> Being part of an ethnic or racial group that has a high rate of diabetes |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>5</sup> Don't know   |

4. Which of the following are symptoms of diabetes?

[MARK "YES" OR "NO" FOR EACH ITEM]

- | YES                      | NO                       |                                     |
|--------------------------|--------------------------|-------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>1</sup> Frequent urination     |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>2</sup> Sores that do not heal |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>3</sup> Being thirsty a lot    |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>4</sup> Don't know             |

5. Which of the following are signs of a stroke?

[MARK "YES" OR "NO" FOR EACH ITEM]

- | YES                      | NO                       |  |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>1</sup> Numbness of the face, arm, or leg                               |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>2</sup> Confusion, trouble talking, and difficulty understanding others |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>3</sup> Trouble seeing in one or both eyes                              |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>4</sup> Trouble walking, dizziness, and loss of balance or coordination |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>5</sup> Severe headache   |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>6</sup> Don't know  |

6. Which of the following are signs of having a heart attack?

[MARK "YES" OR "NO" FOR EACH ITEM]

- | YES                      | NO                       |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>1</sup> You may feel like you can't breathe                      |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>2</sup> You may feel pain in the neck or jaw                     |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>3</sup> One or both of your arms, your back, or stomach may hurt |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>4</sup> You may feel light-headed or break out in a cold sweat   |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>5</sup> Don't know   |

7. Which of the following are true about heart attacks?

[MARK "YES" OR "NO" FOR EACH ITEM]

- | YES                      | NO                       |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>1</sup> Sometimes people confuse the warning signs of a heart attack with symptoms of the flu or indigestion       |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>2</sup> If you are having signs of a heart attack you should drive yourself to the hospital                        |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>3</sup> Getting treatment within 1 hour after warning signs for a heart attack begin can lower damage to the heart |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>4</sup> Don't know   |

8. Ways to lower your risk of getting heart disease include:

[MARK "YES" OR "NO" FOR EACH ITEM]

- | YES                      | NO                       |   |
|--------------------------|--------------------------|---|
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>1</sup> Cutting down on salt and sodium              |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>2</sup> Being physically active                      |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>3</sup> Getting your blood pressure checked          |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>4</sup> Getting your blood cholesterol level checked |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>5</sup> Maintaining a healthy weight                 |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>6</sup> Don't know                                   |

9. Smoking cigarettes can raise your risk of:

[MARK "YES" OR "NO" FOR EACH ITEM]

- | YES                      | NO                       |                                      |
|--------------------------|--------------------------|--------------------------------------|
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>1</sup> Having a heart attack   |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>2</sup> Having a stroke         |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>3</sup> Having an asthma attack |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>4</sup> Getting cancer          |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>5</sup> Don't know              |

10. To lose weight, you can:

[MARK "YES" OR "NO" FOR EACH ITEM]

- | YES                      | NO                       |  |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>1</sup> Cut down on the calories you eat                                      |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>2</sup> Eat smaller portions  |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>3</sup> Read the "Nutrition Facts" food labels to make healthier food choices |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>4</sup> Be physically active  |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>5</sup> Don't know  |

11. Physical activity can help you:

[MARK "YES" OR "NO" FOR EACH ITEM]

- | YES                      | NO                       |  |
|--------------------------|--------------------------|--|
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>1</sup> Control your weight             |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>2</sup> Lower your blood pressure       |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>3</sup> Strengthen your heart and lungs |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>4</sup> Lower your cholesterol          |
| <input type="checkbox"/> | <input type="checkbox"/> | <sup>5</sup> Don't know                      |

The next questions have only one right answer. Please just mark the one you think is correct.

12. How much is one serving of a cooked vegetable?

- 1 Half a cup ( $\frac{1}{2}$  cup)
- 2 One cup (1 cup)
- 3 One and a half cups ( $1\frac{1}{2}$  cups)
- 4 Two cups (2 cups)
- 5 Don't know

13. For a woman, a waist measure of 38 inches is:

- 1 Healthy
- 2 High
- 3 Don't know

14. For a man, a waist measure of 38 inches is:

- 1 Healthy
- 2 High
- 3 Don't know

15. What is the least amount of time adults should engage in physical activity most days each week to lower the risk of getting heart disease?

- 1 20 minutes
- 2 30 minutes
- 3 40 minutes
- 4 60 minutes
- 5 Don't know

16. A blood pressure of 140/90 mmHg means:

- 1 Your blood pressure is normal
- 2 You have prehypertension
- 3 You have high blood pressure or hypertension
- 4 Don't know

17. A total blood cholesterol level of 240 mg/dL means:

- 1 Your cholesterol level is normal
- 2 Your cholesterol level is borderline high
- 3 Your cholesterol level is high
- 4 Don't know

18. A fasting blood glucose level of 126 mg/dL means:

- 1 Your level is normal
- 2 You have prediabetes
- 3 You have diabetes
- 4 Don't know

19. Can drinking too much alcohol (more than one drink per day for women and more than two drinks per day for men) make your blood pressure go up?

- 1 Yes
- 2 No
- 3 Don't know

20. Can people who DO NOT smoke be in danger of getting heart or lung disease from being around people who do smoke?

- 1  Yes
- 2  No
- 3  Don't know

21. High blood pressure is known as a "silent killer." It is called a silent killer because, a lot of the time, most people do not recognize the symptoms.

- 1  Yes, this is true
- 2  No, this is not true
- 3  Don't know

**A Day With the Harris Family (SC 1)**

People act in different ways when they learn that they need to make lifestyle changes (to lower their chances for getting heart disease) because they have risk factors for heart disease. Read about how the members of the Harris family react to the news about their risks for heart disease. Then place an X (☒) next to the name of the family member with whom you identify the most.

1  Darnell: "I don't really care." [The Disbeliever]

Darnell learns that he is at risk for heart disease, but he is not concerned about it. He gets upset when reminded about changing his unhealthy habits. He does not intend to make lifestyle changes for better health. "Nothing's going to happen to me," he says.

2  James: "I need to make changes, but I can't get started." [The Frustrated]

James is frustrated because he's aware of his risk factors for heart disease but has been unable to control them. He feels trapped by life situations and wonders whether he can overcome the obstacles that prevent him from maintaining a heart healthy lifestyle. "Sometimes you can try as hard as you can, but if there's a brick wall standing between you and your goal, what can you do?" says James.

3  Pam: "I am making plans." [The Well Intentioned]

Pam learns that she's at risk for heart disease and intends to take action, and she has started making some plans to improve her health after putting off making changes. She has been feeling guilty because she knows she should take steps to improve her health. "Walking the walk is harder than talking the talk," says Pam, but she is now starting to make plans to be healthier.

4  Ms. Diane: "I am taking action." [The Active]

Ms. Diane (Grandma Harris) learns that she is at risk for heart disease and quickly draws an action plan. She gets information and attends classes to learn how to improve her health. Ms. Diane practices what she learns and feels optimistic and enthusiastic. She makes healthy lifestyle changes, sets reasonable goals, and helps others to do the same. "Once you know better, you owe it to yourself to do better," says Ms. Diane.

5  Tina: "I stay on the healthy path." [The Believer]

Tina is very motivated to make changes to improve her health. She knows it's easy to fall back to old habits. She makes plans to prevent setbacks, and she starts over again when necessary. Tina believes that she and her family can achieve a heart healthy lifestyle. She has a positive attitude towards life, asks for help when needed, and does not give up. "If I just believe it, then I can do it!" says Tina.

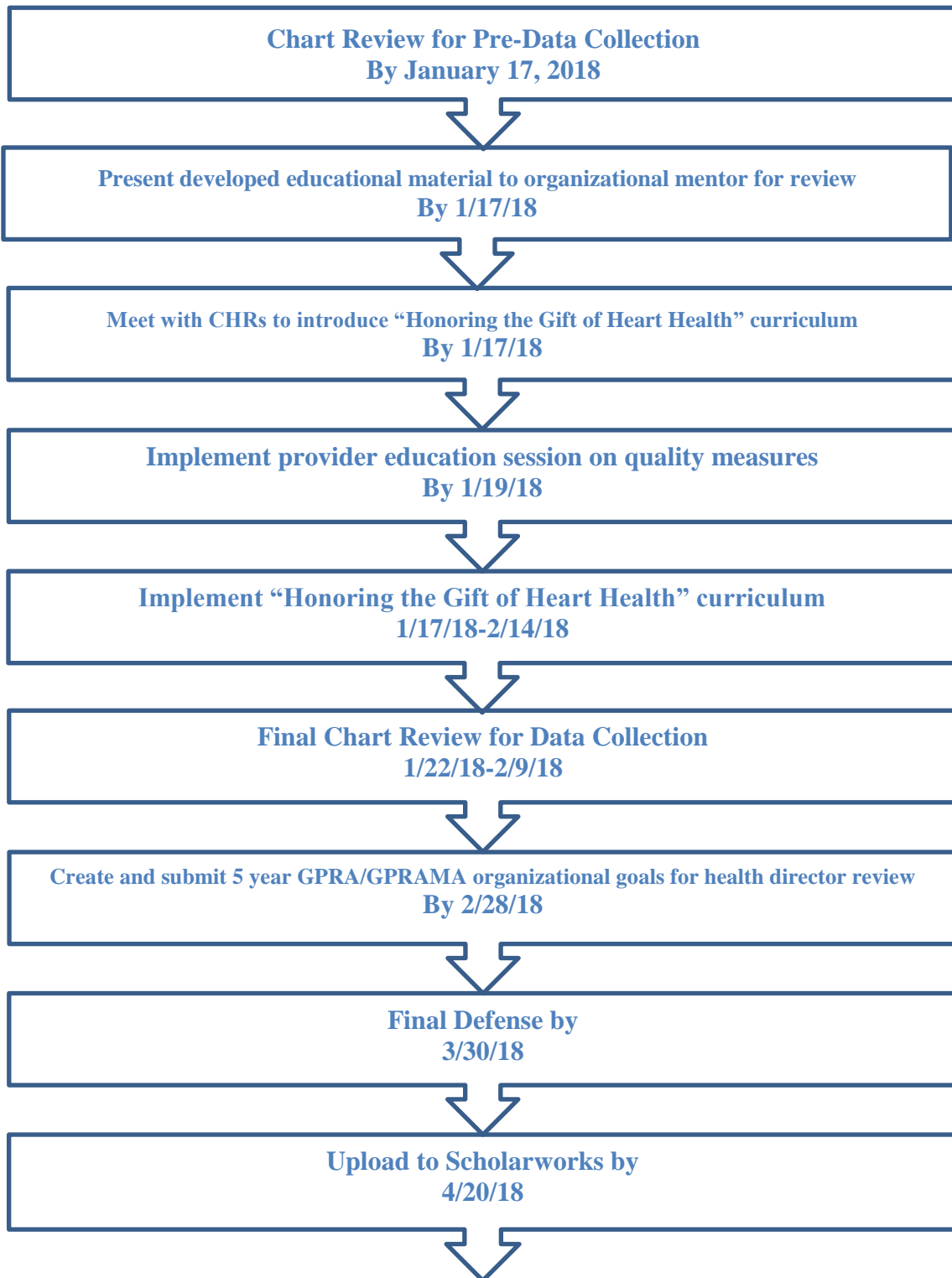
**ABOUT YOU (Y)**

- |  |  |
|--|--|
| <p><b>1. Have you ever been told by a doctor or health professional that you have diabetes?</b></p> <p>1 <input type="checkbox"/> No</p> <p>2 <input type="checkbox"/> Yes, borderline or prediabetes</p> <p>3 <input type="checkbox"/> Yes, diabetes</p> <p>4 <input type="checkbox"/> Yes, but only when I was pregnant</p> <p>6 <input type="checkbox"/> Don't know</p> <p><b>2. Have you ever been told by a doctor or health professional that you have heart disease?</b></p> <p>1 <input type="checkbox"/> Yes</p> <p>2 <input type="checkbox"/> No</p> <p>6 <input type="checkbox"/> Don't know</p> <p><b>3. Does your family have a history of heart disease?</b></p> <p>1 <input type="checkbox"/> Yes</p> <p>2 <input type="checkbox"/> No</p> <p>6 <input type="checkbox"/> Don't know</p> <p><b>4. How old are you?</b></p> <p>____ ____  years old</p> <p><b>5. What is your gender?</b></p> <p>1 <input type="checkbox"/> Male</p> <p>2 <input type="checkbox"/> Female</p> <p><b>6. How far did you go in school?</b><br/>[MARK ONLY ONE BOX]</p> <p>1 <input type="checkbox"/> Did not finish high school</p> <p>2 <input type="checkbox"/> Graduated from high school or earned a GED</p> <p>3 <input type="checkbox"/> Attended some college</p> <p>4 <input type="checkbox"/> Graduated from college</p> <p>5 <input type="checkbox"/> Earned a graduate or professional degree</p> <p><b>7. Including you, how many people live in your home?</b></p> <p>____ ____ </p> | <p><b>8. Are there children younger than 18 years of age living in your home?</b></p> <p>1 <input type="checkbox"/> Yes</p> <p>2 <input type="checkbox"/> No</p> <p><b>9. What is your employment status?</b><br/>[MARK ONLY ONE BOX]</p> <p>1 <input type="checkbox"/> Employed full-time</p> <p>2 <input type="checkbox"/> Employed part-time</p> <p>3 <input type="checkbox"/> Not employed (fully retired)</p> <p>4 <input type="checkbox"/> Not employed</p> <p>5 <input type="checkbox"/> Full-time homemaker</p> <p><b>10. What is your race?</b><br/>[MARK ONE OR MORE BOXES]</p> <p>1 <input type="checkbox"/> <sup>1</sup> Asian</p> <p>1 <input type="checkbox"/> <sup>2</sup> Black or African American</p> <p>1 <input type="checkbox"/> <sup>3</sup> Native Hawaiian or Pacific Islander</p> <p>1 <input type="checkbox"/> <sup>4</sup> White</p> <p>1 <input type="checkbox"/> <sup>5</sup> American Indian or Alaska Native</p> <p><sup>6a</sup> What tribe (or tribes) do you identify most closely with?</p> <p>_____</p> <p>1 <input type="checkbox"/> <sup>6</sup> Another race</p> <p><sup>6a</sup> Please specify:</p> <p>_____</p> <p><b>11. Do you consider yourself Latino or Hispanic?</b></p> <p>1 <input type="checkbox"/> Yes</p> <p>2 <input type="checkbox"/> No</p> <p><b>12. Do you speak a language other than English at home?</b></p> <p>1 <input type="checkbox"/> Yes</p> <p><sup>7</sup> What language?</p> <p>_____</p> <p>2 <input type="checkbox"/> No</p> |
|--|--|

*Thank you very much for completing the My Health Habits Survey. The responses we receive from you and others help us plan programs to better serve communities like yours.*

Appendix I

Timeline for Project Development



Appendix J



GVSU International Review Board Approval Letter



DATE: November 09, 2017

TO: Dianne Conrad, DNP  
FROM: HRRC  
STUDY TITLE: Reducing Modifiable Risk Factors for Cardiovascular Disease through an Evidence Based Educational Intervention in a Native American Population  
REFERENCE #: 18-101-H  
SUBMISSION TYPE: HRRC Research Determination Submission

ACTION: Not Research  
EFFECTIVE DATE: November 09, 2017  
REVIEW TYPE: Administrative Review

Thank you for your submission of materials for your planned scholarly activity. It has been determined that this project does not meet the definition of research\* according to current federal regulations. The project, therefore, does not require further review and approval by the Human Research Review Committee (HRRC).

A summary of the reviewed project and determination is as follows:

This quality improvement project seeks to implement a multi-dimensional approach to improve documentation on cardiovascular quality metrics at a single health clinic. The project is not designed to contribute to generalizable knowledge; therefore, this study does not meet the federal definition of "research."

An archived record of this determination form can be found in IRBManager from the Dashboard by clicking the "\_ xForms" link under the "My Documents & Forms" menu.

If you have any questions, please contact the Office of Research Compliance and Integrity at (616) 331-3197 or [rci@gvsu.edu](mailto:rci@gvsu.edu). Please include your study title and study number in all correspondence with our office.

Sincerely,  
Office of Research Compliance and Integrity

\*Research is a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge (45 CFR 46.102 (d)).

*Human subject* means a living individual about whom an investigator (whether professional or student) conducting research obtains: data through intervention or interaction with the individual, or identifiable private information (45 CFR 46.102 (f)).

Scholarly activities that are not covered under the Code of Federal Regulations should not be described or referred to as *research* in materials to participants, sponsors or in dissemination of findings.

Office of Research Compliance and Integrity | 1 Campus Drive | 049 James H Zumberge Hall | Allendale, MI 49401  
Ph 616.331.3197 | [rci@gvsu.edu](mailto:rci@gvsu.edu) | [www.gvsu.edu/rci](http://www.gvsu.edu/rci)

Budget for Project

<b>Project Budget</b>	
<b>Revenue</b>	
Project Manager Time (in-kind donation)	8,400.00
Team Member Time:	
Certified Diabetes Educator (Site Mentor)	1,600.00
Provider time (time spent in educational session)	243.17
CHR time (time spent learning HGHH material)	60.04
CHR time (time implementing HGHH material)	1,200.80
HGHH Materials	0.00
Printing cost of educational materials (in kind donation)	17.99
Binder to store HGHH materials (in kind donation)	1.67
Conference room use for HGHH implementation (in kind donation)	300.00
<b>TOTAL INCOME</b>	<b>\$11,823.67</b>
<b>Expenses</b>	
Project Manager Time (in-kind donation)	8,400.00
Team Member Time:	
Certified Diabetes Educator (Site Mentor)	1,600.00
Provider time (time spent in educational session)	243.17
CHR time (time spent learning HGHH material)	60.04
CHR time (time implementing HGHH material)	1,200.80
Conference room use for HGHH implementation (in kind donation)	300.00
Printing cost of educational materials (in kind donation)	17.99
Binder to store HGHH materials (in kind donation)	1.67
<b>TOTAL EXPENSES</b>	<b>\$11,823.67</b>
<b>OPERATING INCOME</b>	<b>0.00</b>



Organizational Letter of Permission to Conduct Project



To Whom It May Concern,

Jessica Mastbergen RN, BSN, DNP student, has been granted permission by the \_\_\_\_\_ to conduct a quality improvement project to improve documentation of cardiovascular quality measures in the setting of the tribal clinic in \_\_\_\_\_. The title of the project is "A Multi-Dimensional Approach to Improve Cardiovascular Quality Measure Documentation in a Native American Population."

I, Kathy Bowers MSN, CDE am Jessica's site mentor and will guide her through the implementation of this project along with Dr. Dianne Conrad DNP and Dr. Amy Manderscheid DNP. The implementation of the project is planned to begin in January 2018 and planned to proceed through March 2018.

Thank you,

  
Kathy Bowers MSN, CDE

Results from CHR Educational Sessions Surveys Pre- and Post- Summed Scores, Proportion Changed

	Pre- Summed Score (n=3)	Post-Summed Score (n=3)	% Change
Health Habits*	151 of 309	175 of 309	7.7%
Health Knowledge Part I**	26 of 33	30 of 33	12.1%
Health Knowledge Part II***	20 of 30	25 of 30	16.2%
Stages of Change****	12 of 15	12 of 15	0%

*Note: Summed Scores are a compilation of 3-participants survey answers.*

*% Change is the proportion difference between pre- post- summed scores.*

*\*higher score is desirable*

*\*\*higher score is desirable*

*\*\*\*higher score is desirable*

*\*\*\*\*higher score is desirable*

Results from Provider Educational Session

Pre-Intervention Knowledge Score *	Post-Intervention Knowledge Score *	% Change
35 of 60	52 of 60	28.3%

*Note: n = 3. Summed Scores are a compilation of 3-participants survey answers. % Change is the proportion difference between pre- post- summed scores.*

*\*higher score is desirable*

## Results of Chart Review

Patient Education Charted	Pre	Post	p-value
Yes	1	7	0.0198
No	9	3	

*Note: n = 10, 10 charts reviewed pre-intervention, 10 charts reviewed post-intervention  
Significance was set at  $p < 0.5$*

Appendix P

## Government Performance and Results Act Strategic Plan 2018-2022

**Mission:** To provide quality community healthcare while preserving the patient's choice, privacy, and dignity in a confidential atmosphere.

**Vision:** Working together, we will be the first choice for primary care and dental care amongst tribal members.

### Goals and Objectives

- 1) To decrease the negative impacts of Diabetes Mellitus amongst patients seen at the family health clinic.
  - a. Increase the number of diabetics with a documented A1C
  - b. Increase the number of diabetics with good glycemic control, defined as A1C < 8 (target rate 37%)
  - c. Increase the number of diabetics with controlled blood pressure values; defined as BP < 140/90 (target rate 53%)
  - d. Increase the number of diabetic patients with concurrent cardiovascular disease or hyperlipidemia (LDL > 190) who are on statin therapy (target rate 38%)
  - e. Increase the number of diabetic patients with a nephropathy assessment; defined as a glomerular filtration rate and a urine albumin to creatinine ratio (target rate 35%)
  - f. Increase the number of diabetic patients who receive a dilated retinal exam (target rate 50%)
  
- 2) To increase access to dental services amongst tribal members, and to increase access to preventive dental care amongst tribal children.
  - a. Increase the number of patients with at least a yearly dental visit (target rate 28%)
  - b. Increase the number of patients ages 2-15 with at least one or more intact dental sealants (target rate 17%)
  - c. Increase the number of patients ages 1-15 with at least one or more topical fluoride application (target rate 31%)
  
- 3) To increase immunization rates amongst tribal members to promote continued health of the tribe.
  - a. To increase the rates of tribal members (6 mo. and up) who receive an annual influenza vaccine (target rate for children 6 mo.-17 yrs: 21%; target rate for adults 18 years+: 19%)
  - b. To increase rates of adult tribal members (19 yrs. +) who receive age appropriate vaccines (target rate: establish baseline rates for GPRA year 2018)
  - c. To increase the number of children (7-35 mo.) who receive age appropriate vaccines (target rate 46%)

- 4) To increase the rates of tribal members seen at the clinic who receive appropriate cancer screening tests.
  - a. Increase the number of tribal women who receive pap smear/HPV testing as recommended through American College of Gynecology (target rate: 35.9% for the proportion of female patients ages 24 through 64 years without a documented history of hysterectomy who have had a Pap screen within the previous 3 years, or if the patient is over 30, have had a Pap screen in the past 3 years or a Pap screen and HPV DNA within the previous 5 years.
  - b. Increase the number of tribal women age 52-64 who have had mammogram screening in the last 2 years (target rate 43%)
  - c. Increase the rate of patients ages 50-75 years who receive colorectal cancer screening defined as fecal occult blood test in the report period, flexible sigmoidoscopy in the last 5 years, or colonoscopy in the last 10 years (target rate 33%)
  
- 5) To increase rates of patients seen at the clinic who are assessed/treated for behavioral health issues and assessed/educated on healthy habits.
  - a. Increase the number of tobacco-using patients who receive tobacco cessation intervention (target rate 28%)
  - b. Increase the number of adolescents and adults (ages 9-75) who are screened for alcohol use (target rate 38%)
  - c. Increase the number of adolescents and adults (ages 9-75) who screen positive for risky or harmful alcohol use who also receive a brief negotiated interview or brief intervention within 7 days of screen (target 9%)
  - d. Increase the rate of female patients (ages 14-46) who receive screening for domestic violence (target rate 43%)
  - e. Increase rates of adolescents (age 12-17) and adults (age 18+) who receive screening for depression (target rate adolescents: 28%, target rate adults: 43%)
  - f. Increase the rates of adult patients who are treated for depression with antidepressant drug therapy (target rate for new diagnosis 42%, target rate for continuing treatment 22%)
  - g. Increase the number of adolescents and adults (age 13-64) screened for HIV (target rate 18%)
  - h. Increase the number of two-month-old children who are mostly or exclusively breast-fed (target rate 39%)
  
- 6) To decrease the number of tribal members affected by cardiovascular disease through increased preventive health measures.
  - a. Decrease the number of children (ages 2-5) with BMI at or above the 95<sup>th</sup> percentile (target rate less than 22.6%)
  - b. Increase the number of adults with a controlled blood pressure classified as < 140/90 mm Hg (target rate 43%)
  - c. Increase the number of patients at-risk (see measure logic for definition of “at-risk”) for cardiovascular disease who are receiving statin therapy (target rate 27%)