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## Hypertension: Care Management Program and Medication Adherence


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**Hypertension: Care Management Program and Medication  
Adherence**

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**This Manuscript Partially Fulfills the Requirements for the  
Doctor of Nursing Practice Program and is Approved by:**

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**University of St. Augustine for Health Sciences  
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### Abstract

**Practice Problem:** Medication adherence is a major concern in healthcare as it is a contributing factor to uncontrolled hypertension and resistant hypertension. Uncontrolled hypertension can lead to strokes, heart attacks, kidney failure, and even death.

**PICOT:** The PICOT question that guided this project was in Medicare Advantage members with hypertension located in Kansas, who were admitted to the hospital or emergency room identified by stratification (P), does care management utilization using hypertension clinical guidelines (I), compared to the stand-alone hypertension clinical practice guideline (C), improve medication adherence (O) over 10 weeks (T)?

**Evidence:** Hypertension is one of the leading preventable causes of death. Medication adherence is around 50% in half of individuals diagnosed with hypertension and annual cost of unnecessary visits for hypertension is in the billions. A care management program is a cost-effective way to help individuals with a chronic condition manage their health and medications, decreasing the rate of complications.

**Intervention:** A care management program utilizes medical professionals to assist members with chronic diseases, such as hypertension, to become more knowledgeable and autonomous with their healthcare. This program provides members with support in ensuring medications are taken and their chronic condition is being monitored to prevent complications and unnecessary emergency room and re-hospitalization visits.

**Outcome:** There was a lack of data due to the lack of participant participation, therefore, no blood pressure data was collected. The emergency room visits or re-hospitalization, including financial reports, were not available. Medication adherence percentages did not show any clinical significance.

**Conclusion:** It was difficult to assess clinical significance due to lack of data at the closure of this pilot program.

### **The Role of Care Management in Nonadherence to Hypertensive Medications**

Hypertension is a cardiovascular risk factor, which plays a significant role in worldwide mortality (Abegaz et al., 2017). According to Adisa et al. (2018), hypertension causes approximately 12.8% of the global premature death rate annually. Hypertension is responsible for approximately nine million deaths globally (Agbor et al., 2018). Medication nonadherence is a problem throughout the healthcare field worldwide, and contributes to uncontrolled hypertension and the risk of heart attacks, strokes, and kidney injuries (Abegaz et al., 2017). Hypertension is considered the number one risk factor for years of life lost due to nonadherence with hypertensive medications (Abegaz et al., 2017). Care management utilization is a team-based, patient-focused program designed to help patients in supporting autonomy in managing medical conditions effectively (Agency for Healthcare Research and Quality, 2018). The utilization of care management in patients with hypertension will improve medication adherence, therefore, decreasing the rate of mortality and morbidity.

### **Significance of the Practice Problem**

Globally, there are 45.3% of patients living with hypertension who are nonadherent to their medication regimen (Agbor et al., 2018). Even patients who have access to medications show a 50% adherence rate (Agbor et al., 2018). According to the American Heart Association (2015), there are approximately one-third of Americans with hypertension who are nonadherent with their medication regimen. This is slightly lower than the overall global percentage, but still a great healthcare concern. A patient with uncontrolled hypertension has the risk of heart attack, stroke, kidney disease, or even death. The goal of controlling hypertension is to help prevent heart attacks, strokes, kidney disease, and decrease the cost of these co-morbidities (Agbor et al., 2018).

Patients who are nonadherent to their hypertensive medication regimen put themselves at risk for heart attacks, strokes, kidney disease, and even death (Agbor et al., 2018). The decrease in medication adherence has been shown to have a direct effect on how other

individuals with hypertension are treated (Hamrahian, 2022). Medication nonadherence is a safety issue for the patient and also the community for their overall well-being since medication nonadherence in patients with hypertension directly affects society, resulting in resistant hypertension (Hamrahian, 2022). Individuals who do not take their medications as prescribed contribute to resistant hypertension (Hamrahian, 2022). For example, when individuals do not take a full course of an antibiotic this can lead to resistant organisms making it difficult to treat, hypertension can also be resistant (Hamrahian, 2022). Providers need to be aware of possible medication resistance with the increase in rate of medication nonadherence, ensuring the patient is getting the appropriate treatment (Hamrahian, 2022). The awareness of medication nonadherence is important to ensure the patient is receiving the proper treatment and this can be achieved by care management utilization programs, collaboration with pharmacies, and also measuring the individuals blood pressures.

The high rate of nonadherence to hypertensive medications can cost the patient, their family, and facility financially. Medication nonadherence has been proven to be an expensive problem in the American healthcare system, with a possible preventable cost of about \$100-\$300 billion annually (Duke Health, 2018). This can be due to unnecessary hospital visits and admissions associated to uncontrolled hypertension. These visits use hospital resources and cost money, but also the patient and insurance company may be paying for preventable visits. This can lead to patient and family financial burdens. There is also a healthcare shortage of nurses and providers, so the influx of unnecessary visits can cause strain on an organization from a staffing and supplies standpoint.

Medication nonadherence can cost an insurance company for unnecessary visits and/or admissions. The practice site has a care management team in place to address the medication nonadherence of their members, which is one of the practice sites many functions. The initiation of a care management program focuses on assisting their members with their chronic medical conditions showing there is a need for such intervention by using stratification to identify

members who seek emergency room services and hospital admissions for hypertension (J. Ham, personal communication, November 11, 2022). The practice site also identifies a need based on finances and the cost of unnecessary visits and admissions, with members with hypertension (J. Ham, personal communication, November 11, 2022). The pharmacy monitors refills at local, and other mail order pharmacies, for member medication adherence through a medication adherence system accessed by the pharmacy (M. Parker, personal communication, November 28, 2022). The practice site assists providers to ensure patients are being compliant with medications. A care management program has a positive effect on patients with hypertension by improving their prognosis (Song et al., 2020).

The implications of patients with hypertension being nonadherent to their medication regimen affects themselves, their healthcare provider, and society. Providers can identify nonadherent patients to intervene sooner than later decreasing the risk of complications clinically and economically in the management of their care (Kulkarni et al., 2021). Uncontrolled hypertension can affect the individual, family, society, and healthcare facilities. The risk of complications from uncontrolled hypertension for the individual can cause other co-morbidities or mortality. Hypertension complications can cause emotional and financial burden on the patient and family. Society is affected with the potential of medication resistant hypertension from other individual's being nonadherent with their medications. Providers need to be aware of this potential and assess for this during examinations to adequately provide patients with the appropriate treatment. The healthcare system also carries a financial burden when caring for patients with uncontrolled hypertension. The visit/admission uses resources, time, effort, ideas, and cost for the organization when it potentially could have been prevented.

### **PICOT Question**

Medication nonadherence in hypertensive patients contributes to poor blood pressure control leading to other co-morbidities (Poulter et al., 2020). A collaborative based care has shown improvement in medication adherence, affecting the patients' overall health and

healthcare cost (Poulter et al., 2020). In Medicare Advantage members with hypertension located in Kansas, who were admitted to the hospital or emergency room identified by stratification (P), does care management utilization using hypertension clinical guidelines (I), compared to the stand-alone hypertension clinical practice guideline (C), improve medication adherence (O) over 10-weeks (T)? Medicare Advantage members (65+) being treated with hypertension was the population. In this age group, it was important to ensure coordination of care and adherence to all treatment regimens prescribed by all providers, as most members have multiple chronic conditions and providers. Care management utilization was the program to help coordinate care, medication adherence, health goals, and comprehensive care in patients with chronic medical conditions (Rural Health Information Hub, 2022). A health care professional had contact with the member, via phone, home visits, or appointments, ensuring medications, appointments, and other health care needs were being completed. The interaction between the health care professional and the member was also therapeutic for the member, providing companionship. The frequency of the contact with the member depended on the members' needs.

The utilization of a care management program as opposed to the stand-alone hypertension clinical practice guideline was the comparison. According to the American Academy of Family Physicians (AAFP; 2023), there was one strong recommendation for the hypertension clinical practice guideline to reduce the risk of cardiovascular mortality based on high-quality evidence with the use of medications. The AAFP recommendation was that the clinician should treat adults with hypertension to target a standard blood pressure of less than 140/90 (AAFP, 2023). There was no mention of additional support for patients with hypertension, such as a care management program as part of the clinical practice guidelines. Chakraborty and Choudhury (2021) discussed the hypertension clinical guidelines including lifestyle interventions with a medication regimen, but no care management program incorporated into these guidelines for patient support. The comparison was seeing the



medication adherence prior to care management utilization and at the completion of the 10-week timeline. Medication adherence review was done prior to enrollment, at 4-weeks, and then at the end of the 8-weeks for comparison. According to Huang et al. (2022), a chronic care management model was shown to improve patients' blood pressure control, by taking their medication as prescribed, and overall knowledge and confidence in understanding hypertension than those patients who were not utilizing this model. The outcome showed blood pressure control through medication adherence care management utilization. The outcome was also measured through the evaluation of the member's blood pressure readings from health care charts and members medication refills through the pharmacy, ensuring medications were picked up when they were due. The practice site pharmacy medication review showed how adherent a member was to their medication regimen. The expectation was to see a change in blood pressure and medication adherence within a month of when the intervention was initialized and continued improvement in medication adherence over the 10-weeks.

There was potential risks for the institution and the member involved in the care management utilization program. One member risk was the time and effort put into the care management utilization program with no improvement found in their medication adherence and decrease in blood pressure percentage over the 10-week period. The member may also had a financial risk if a blood pressure machine was purchased for at-home monitoring or if the member needs to miss work to go to their nearest clinic for a blood pressure check. The member could have also had mental/emotional harm done if effort was put into the care management utilization program and the member did not see the positive overall outcome in return.

The institution also had risks. A financial risk was the main concern for the institution. The time, money, and resources put toward starting a care management utilization program with no positive patient outcomes was a major risk. Financially, the startup cost hiring and educating staff, computer programs, and supplies, such as computers was also a risk for the institution if

the care management utilization program was not successful for members. If a member was noncompliant throughout the program, the member would cost the institution money, time, and resources put towards this member when another member could have been enrolled with a positive outcome. If a member had a positive outcome, it had a long term financial benefit for not only the member but also the institution, therefore, a member not being compliant would continue to cost the institution money with unnecessary emergency room and hospital admissions. A positive outcome for the member was expected to decrease unnecessary hospital admission and emergency room visits, therefore, decreasing the cost for the institution.

### **Evidence-Based Practice Framework & Change Theory**

John's Hopkins evidence-based practice framework helped the development and implementation of the project by laying out a timeline and dates of completion for tasks (Dan et al., 2022b; Dang et al., 2022a). A checklist assisted in the tasks needed to be completed and provided a timeline to use throughout the project process to completion (Dang et al., 2022a). The checklist and this framework provided guidelines on when tasks needed to be completed to ensure the completion of the project was done within the timeframe allotted. The transition theory, more specifically the Spradley Model, was one to define how individuals responded to a situation and identifying patterns through the process from beginning to end (Nursing World, n.d.). The transitions theory focused on the illness of the individual to provide overall wellness through engaging in the intervention to make a difference in ones' health (Nursology, 2018). The Spradley Model, based on the Lewin's Theory, was an eight-step process providing constant evaluation throughout the whole process from beginning to end (Nursing Theory, 2023; Nursing World, n.d.). Spradley's Model recognized the diagnosis of the problem, analyzed alternative solutions, identified the change, planned the change, implemented the solution, then evaluated the change, and focused on stabilization of the change (Nursing World, n.d.). The personal characteristic of the theory focused on the perception, knowledge, and preparation one had to their health (Nursology, 2018). These characteristics guided the project as the individual was

the one taking the prescribed medications and ensured if there were any questions or concerns, they were contacting the care management team for assistance. The care management team was what the theory identified as environmental characteristics (Nursology, 2018). The environmental characteristics gave assistance to the individual and ensured medications were adhered to and the blood pressure readings were reflective of this action. The nursing therapeutics, included assessing the individual for readiness to change and monitor the patient medications and blood pressure readings (Nursology, 2018). This theory and framework support was a good fit for the project change as it encouraged patient autonomy with the assistance of care management monitoring and evaluated medication adherence and blood pressures throughout the process from beginning to end.

### **Evidence Search Strategy**

The University of St. Augustine for Health Science (USAHS) library and PubMed.gov were used for the initial search databases. Hypertensive medication adherence and care management were used as keywords for initial search. The inclusion criteria were hypertension medications, medication adherence/nonadherence, and care management. The exclusion criteria were articles containing more medical conditions than hypertension, other medications being studied, or before the year 2017. There were specific filters containing English, between 2017-present publish dates, peer-reviewed, and full text for both databases. USAHS library also had a filter of available in library collection. In searching the database through the USAHS, the PICOT was used for the keywords using hypertensive medication nonadherence, care management, and improve medication nonadherence along with the specific filters as stated. This initial search yielded 159 results. The initial search through PubMed.gov used hypertensive medication adherence and care management. This search used the filters of free full text, full text, published years 2017-2022, abstract included, and English. This initial search yielded 307 results.

### **Evidence Search Results**

The USAHS library initially resulted in 159 results and PubMed yielded 307 results for a total of 466. After scanning for duplicates and with these articles removed there were 384 articles remaining to be screened. The inclusion criteria included medication nonadherence, hypertension, adults, full text, abstract, English, 2017-2022, care management, and library collection (USAHS specific). Each article was thoroughly evaluated for an abstract and if no abstract was found, even after using this as a filter, the article was removed from the eligibility list. The exclusion criteria included other medical conditions, such as diabetes or cancer, non-hypertensive medications discussed, and participants under the age of 18 years old to focus specifically on hypertension. The articles also were screened specifically for patients with hypertension and medication nonadherence rates, prognosis, prevalence, and patient knowledge and understanding of their condition. The articles did not specifically have to contain all these themes but did need to include at least one to be considered for eligibility. Care management, or collaboration, with healthcare members in the care of their patients managing hypertension were included as these articles help specifically supporting the PICOT question. The links of the articles were also clicked on to ensure the full text was available. After thoroughly reviewing the articles there were 252 articles excluded after the screening criteria above was performed. There were 54 full-text articles eligible. These full text articles were reviewed and 45 were excluded for reasons of no support for PICOT question with further review, no positive intervention significance, further research was recommended, and small sample size. A total of eight full text articles were included along with five additional sites used for support of the PICOT question, which included American Heart Association (2015), Duke Health (2018), Nursology (2018), Nursing World n.d.), and Rural Health Information Hub (2022).

There were two systematic reviews eligible for grading out of the eight total articles. Agbor et al. (2018) and Abegaz et al. (2017) were quasi-experimental articles represented at a Level II (Dang et al., 2022a). There was a difference in the quality rating for these articles with

Abegaz et al. (2017) with a High Quality (Quality A) rating showing expertise with clear evidence and drawing conclusions with the scientific rationales to back up the evidence (Dang et al., 2022a). The other article, Agbor et al. (2018), had a Good Quality (Quality B) rating, but there was speculation on whether the expertise was credible as the article did not show definitive conclusions, but there was discussion on how the conclusions brought some argumentative opinions (Dang et al., 2022a). The non-systematic review articles did have more Quality A than Quality B based on the grading criteria (Dang et al., 2022a). There were six articles with the Quality A status and five Quality B status (Dang et al., 2022a). The articles had a good variety of levels represented from Level I to Level V (Dang et al., 2022a). Level I was a randomized control trial represented in two articles specifically Huang et al. (2022a) and Song et al. (2020) (Dang et al., 2022a). Kulkami et al. (2021) was the only non-systematic review article with a Level II Quasi-experimental rating (Dang et al., 2022). Many of the articles fell into the nonexperimental category of Level III, which included Nursing World, Duke Health, American Heart Association, and Hamrahian (2020) as these were mainly informational (Dang et al., 2022a). Level IV, clinical practice guideline, was represented with Nursology (2018), Rural Health Information Hub (2022), and Poulter et al. (2020). Adisa et al. (2018) was the only Level V, literature review, discussing results of a variety of studies supporting the issue of medication nonadherence in hypertensive patients (Dang et al., 2022a).

The evidence search results identified a global health risk with the increase in individuals developing hypertension and the high mortality and morbidity rates. The increase in uncontrolled hypertension had an association with medication nonadherence as described in Appendix A research. The hypertension current practice guidelines were shown through this research to not have a positive outcome or health effect on the individual, therefore, an intervention to improve patient outcomes, improve medication adherence, and decrease unnecessary hospitalization/emergency room visits was necessary to benefit the individual and the institution. Overall, the research showed a variety of articles with supportive, credible, and

reliable information on care management as an intervention in Medicare Advantage members' medication adherence with hypertension.

### **Themes with Practice Recommendations**

#### **Uncontrolled Hypertension**

Hypertension is a chronic medical condition that has a very high prevalence and mortality rate worldwide (Abegaz et al., 2017). The cons to hypertension are medication nonadherence, which can result in mortality and the development of co-morbidities. The high prevalence and mortality rate poses risks for the individuals well-being and society as a whole, physically and financially, if not treated properly. The prevalence rate of hypertension continues to rise which relates to the number of individuals getting older, for example the *baby-boomers* (Adisa et al., 2018). Individuals with hypertension need to have the knowledge base to understand the disease process and what preventative measures can be taken to help decrease the rate of mortality and developing co-morbidities such as stroke, heart attack, and other cardiovascular related conditions. The pros of having hypertension are minimal, but patients can broaden their knowledge and can overall improve their lifestyle. Patients with hypertension can improve their health by significantly altering their lifestyle through diet, exercise, and caring for themselves holistically (Abegaz et al., 2017). Overall, it is found if a patient changes their lifestyle, it can have a positive effect on their health and ultimately decrease the risk of co-morbidities and even death (Adisa et al., 2018). Hypertension comes with many risks, but is a manageable chronic medical condition but can only be done with patient compliance.

#### **Medication Nonadherence**

Medication adherence is a critical part of keeping a patient with hypertension from potentially developing complications and other co-morbidities that could be life-threatening. When a patient is nonadherent to their medication regimen, it not only affects the patient themselves negatively, but can influence society's well-being (Hamrahian, 2022). The cons to

medication nonadherence are not only to the patient with hypertension but the overall global health physically and financially. Patients who are nonadherent increase the risk of causing resistant hypertension in society (Hamrahian, 2020). Medication nonadherence cause others being treated for hypertension to not respond to medications as expected, therefore, healthcare providers battle finding medications to help decrease blood pressure in these patients. Resistant hypertension is something providers need to aware of as it is becoming more frequently diagnosed due to the higher rates of medication nonadherence (Hamrahian, 2020). Resistent hypertension can cause complications in those with hypertension when their blood pressure is not under control physically and can cause financial burden. Medication nonadherence has been shown to have a preventable cost of \$100-\$300 billion annually (Duke Health, 2018). The cons of medication nonadherence are significant affecting the patient, healthcare system, and everyone in between. The pro to medication nonadherence is the opportunity to be able to improve the care given to patients. Medication nonadherence gives health care systems a change project to make a difference in their policies and procedures in managing hypertension.

### **Care Management**

Care management utilization is a program to assist those with hypertension in managing their care with around the clock access to a health care professional (Rural Health Information Hub, 2022). The pros to having a care management utilization program are patients are more compliant with medication regimens, controlled blood pressures, and increase in patient knowledge of their chronic medical condition as described in Appendix A. Patients are shown to have a higher score for understanding hypertension, self-perception, managing their hypertension, and better blood pressure control (Huang et al., 2022). Overall, the patients have a better quality of life and a lower readmission rate, complications, and length of hospital stay (Huang et al., 2022). Care management utilization not only assists patients with medication adherence but can have an overall positive effect on the patients' health. Patients have better blood pressure control but also have a decrease in their BMI, number of hypertensive

medications, waist circumference, and even a lower rate of developing comorbidities (Song et al., 2020). The possible cons to a care management utilization program can be the time the patient needs to set aside to engage with a care management utilization team member, the financial aspect for the organization to pay staff, and the resources needed to implement and sustain a care management utilization program. Another con can be specifically towards patient engagement and the percentage of members not utilizing the program to make it worth the time, resources, and ideas for the organization. The practice site has a care management utilization program for many health conditions, including hypertension (J. Ham, personal communication, November 11, 2022). The hypertension care management utilization program focuses on how to assist members in controlling their blood pressures through lifestyle modifications, taking their medications, and through education (J. Ham, personal communication, November 11, 2022).

Joo and Huber (2019) state care, or case, management is an overall cost-effective way to coordinate an individuals' care. Although, the systematic review does not identify a positive or negative effect on an individuals' health care with care management utilization (Joo & Huber, 2019). There is evidence care management does have a positive outcome by reducing health care utilization, including unnecessary hospitalizations and emergency room visits (Joo & Huber, 2019). Tsai et al. (2022) found care management has a significant effect on mental illness patients to graduate to less intensive services. There was positive outcomes reporting including a decrease in hospitalization and overall improvement in quality of life of the patient (Tsai, et al., 2022). Joo and Liu (2018) shows through a systematic review and meta-analysis how care management is effective and efficient in improving patient clinical outcomes. Care management has met the needs of the patients with chronic illnesses to improve their overall health (Joo & Liu, 2018). Hutchison et al. (2019) found during the intervention of care management that medications issues were the most common reported reason for readmission. During the care management implementation, there is a lower number of readmissions due to medication nonadherence (Hutchinson et al., 2019). The reliability and validity of a care



management utilization program does depend on the member compliance and medication adherence. As stated above, care management utilization programs can have a positive outcome on hospitalization rates and overall financial patient and institution burden.

The literature confirms hypertension is at an alarming rate globally, nationally, statewide, and locally. Hypertension has co-morbidities leading to mortality due to medication nonadherence and uncontrolled hypertension. The need for an intervention like care management, is crucial in healthy outcomes for individuals living with hypertension. The practice recommendation for patients with hypertension to decrease mortality and co-morbidities are to improve their health with collaborative care. Care management is a program shown to improve patients' overall health and knowledge of hypertension by decreasing the rate of medication nonadherence (Agency for Healthcare Research and Quality, 2018). A patient and healthcare member having routine contact can help the patient stay on track with their medications, appointments, and other lifestyle modifications. With the growing number of individuals developing hypertension, implementing a care management program is crucial to decreasing the rate of resistant hypertension and a devastating affect hypertension can have on the individual and society at a local, national, and global level.

### **Setting, Stakeholders, and Systems Change**

The setting for the change project took place within a Midwest Health Plan in the United States. The care management team, pharmacy, and other departments within the practice site were utilized for the change project. A typical participant was a Medicare Advantage member diagnosed with hypertension and taking medications for this condition. The member was enrolled into the care management utilization program and followed the hypertension program with weekly check-ins and filling out surveys. The member was taking their blood pressure and pulse and documenting this data. The data was gathered on medication adherence through the pharmacy module, an external medication adherence reporting data program, and the blood pressure readings would be monitored through the care management utilization program (M.

Parker, personal communication, November 28, 2022). Permission was granted to use the external medication adherence reporting data program for use in project work for medication adherence, with the limitation that any information with the intent to share with outside entities was de-identified (M. Parker, personal communication, December 9, 2022). The pharmacy used an external medication adherence reporting data program on a weekly basis to provide information to providers and pharmacies (M. Parker, personal communication, November 28, 2022). The need for the change project was identified through the increase in unnecessary admissions to the hospital, uncontrolled blood pressures, and member medication nonadherence, which can lead to the unnecessary organizational spending (J. Ham, personal communication, November 11, 2022). The mission and vision were to provide Medicare Advantage member with the best health insurance, maximize value for members, and gain member trust with their health (Blue Cross Blue Shield, n.d.).

The stakeholders included the member, care management team, pharmacy, provider, organization administration and board, and community members. The change project affected the member and financially affected the organization. The affect the care management utilization program had on the member would be beneficial to show how the program works and encourage enrollment from other members to overall improve the community health. The collaboration required for the change project included the pharmacy communicating to the care management team regarding medication adherence. Members blood pressure readings were reviewed with the information given from the patient record and gathered from the pharmacy to identify a correlation between medication adherence and blood pressure readings. Collaboration between departments was crucial in the success of the patient in the care management utilization program. The provider ordering the medication also needed to be involved and knowing the medication adherence percentage of the member to encourage education and understanding of the importance of taking medication for hypertension.

The project addressed change at the micro, meso, and macro systemic levels (Sawatzky et al., 2021). On a micro level, the project involved the member and other community members improving their health, prognosis, and development of co-morbidities due to nonadherence to medications for hypertension. At this level, the members also noticed a decrease in financial stress. On a meso level, the change project focused on the organization. The policies and procedures concentrated on care plans for hypertension, which could be altered based upon the results of the change project. The change project reduced the cost of unnecessary hospital readmissions and emergency room visits. At the macro level, the project concentrated on the healthcare system, insurance companies, and society as a whole. The change project was driven on improving health care for members with hypertension to improve overall health outcomes and to decrease the rate of premature deaths and development of co-morbidities across the globe.

The Strengths, Weaknesses, Opportunities, and Threats (SWOT) analysis in Appendix E shows the internal strengths of the change project were the organizational support for change, positive environment, and collaboration amongst all of the departments. The weaknesses were not having the number of staff needed to fulfill all the duties of the care management utilization program, the potential lack of resources, and a low number of members involved to make the time and money of sponsoring a care management program worth it for the organization. The external opportunities were to improve member health, update policies/procedures to improve patient outcomes, and making a local, regional, national, and global impact. The external threats were the financial risk, lack of interest from the members, and lack of provider support for the change project.

### **Implementation Plan with Timeline and Budget**

The change project decreased and/or maintained normal blood pressures in Medicare Advantage members by a care management utilization program with nurse contact based on member status over a 10-week period, as shown through chart reviews. The nurse telephonic

contact improved Medicare Advantage member's overall health by using educational materials to expand hypertension knowledge and understanding of importance of taking hypertensive medications over a 10-week period, as measured through patient surveys. At least 75% of Medicare Advantage members were adherent to their medication regimen after telephonic encounters with nursing over a 10-week period, as shown through a medication review process. The practice site saw a decrease in unnecessary hospital admissions and emergency room visits from Medicare Advantage members who utilized the hypertension care management program over a 10-week period, as seen through claims. The practice site had financial long-term benefit of decreased amount spent on Medicare Advantage members admitted unnecessarily for hypertension and emergency room visits who were enrolled in the care management program over a 10-week period.

The implementation process followed the PET framework (Bohn-Gettler, 2019). A problem was identified as a priority within an organization, which did not have a relevant high-quality process in place already but showed evidence of the need to change (Dang et al., 2022). The Spradley Model, an evidence-based practice and transitional theory, guided development of the change project by supporting the project participant focus on patient safety, wellness, member's experiences, and the response to care management utilization and how the member manages their health (Nursology, 2018). The transition theory was utilized to assist member's through a health transition to improve their health outcomes (Nursology, 2018). The hypertension care management utilization program assisted members in improving their healthcare outcomes by decreasing their blood pressures, medication nonadherence, and broadening their overall knowledge of hypertension. The transition theory guided the change project development and implementation.

The transition theory concepts are anticipation, experience, and completion (Nursology, 2018). The anticipation of an increase in Medicare Advantage members living with hypertension based on the number of members diagnosed within the last year showed a need. Improving the

experience Medicare Advantage members had living with hypertension and understanding of how to manage their medications were critical to achieving positive health outcomes.

Hypertensive members were classified through a stratification process already in place at the practice site to categorize those members who were critical/high, moderate, and low risk (J. Ham, personal communication, November 11, 2022). The members were categorized based upon hospital readmissions for uncontrolled hypertension, emergency room visits, and the number of co-morbidities (J. Ham, personal communication, November 11, 2022). Based upon these results, the critical/high risk group were contacted by a population health assistant, who described the care management program and offered the opportunity to engage in the care management program. There were expectations by the project participant that the member have a minimum of one engagement per week, documented blood pressures, and education materials sent to the member. The transition properties included awareness, engagement, change and difference, transition time span, and the critical points and events (Nursology, 2018). After a member accepted enrollment, they were transferred to a nurse who would carry out the rest of the program and perform the engagements. The nurse assessed patient readiness and perceptions to their own health (Nursology, 2018).

Prior to starting the program, the nurse performed a risk assessment, transition preparation, creating a healthy environment, and overall readiness assessment of the member through the questionnaires provided in Appendices F, G, H, I, J, K, M, and N (Nursology, 2018). A registered nurse performed a health risk assessment (see Appendix F) and hypertension assessment (see Appendix M) at the initial engagement and then a hypertension rehab assessment (see Appendix N) every 4-weeks throughout the project change timeframe. at the first engagement, the member was given educational materials via mail or link from the American Heart Association regarding hypertension, instructions on how to take and record a blood pressure properly, and lifestyle modifications (see Appendices G, H, I, J, K). The

information gathered from these tools was charted in the Care Management Electronic Medical Record (EMR; J. Ham, personal communication, December 6, 2022).

The Care Management EMR proprietary system was used to document and input surveys and assessments performed by the public health assistants and registered nurses (J. Ham, personal communication, December 6, 2022). A member was encouraged to go to their nearest clinic for hands on demonstration if needed to ensure the blood pressure was being taken appropriately. A member also took a member survey at the first engagement (see Appendix L) and the results were inputted into the Care Management EMR.

The member was contacted weekly at the same time unless more than one time was needed and as determined based upon member acuity and needs. To document readings, the nurse asked for blood pressure readings from the last engagements to the day of contact (see Appendix K). Permission for the DNP student to use the member survey, health risk assessment, hypertension assessment, hypertension rehab assessment, external medication adherence reporting data program, and the Care Management EMR was given by a practice site representative for the change project on February 11, 2023, as seen in Appendix Q (L. Gehrt, personal communication, February 13, 2022).

There was a discussion of medication, specifically asking for a pill count to ensure patient was taking medications as prescribed. The 10-week timeline goal was to have members with a medication adherence percentage of 75%. At the end of each 4-weeks, there was a medication review with the pharmacy within the practice site for adherence utilizing the external medication adherence reporting data. Members were called by the nurse at the end of each 4-week medication review to either give member praise for adherence or educate them on importance of medication adherence. Members with low adherence were given more information on co-morbidities and side effects of hypertension from the American Heart Association (see Appendix I). The enrollment time frame was 90-120 days. There was collaboration amongst the pharmacy, care management utilization supervisor, members, and

claims department throughout the 8-week timeline. At the end of the 10-week timeline, each member's blood pressure readings and medication review data was gathered and analyzed. The results of how the care management program affected members medication adherence was presented to the practice site care management team, administration, and local community.

The timeline for the change project was to ensure by the last week of February all staff were informed of the project expectations via email. Virtual meetings with care management staff were and pharmacy were completed for answering questions after the approval from the EPRC and institution. The second and third weeks of March was when members were enrolled and pre-care management utilization data, which included medication adherence percentage and number of hospital admissions/emergency room visits, was gathered. The hospital admissions and emergency room visits reports were obtained at the end of week 8 on all members. The following 8 weeks consisted of weekly member phone calls where blood pressure data was gathered, and at week 4 and week 8 medication adherence percentage were obtained. The DNP student checked in with the nurses once a week to gather the weekly blood pressure data and ensured there were no questions or concerns throughout the project timeline. The end of May was project conclusion with all results analyzed and presented in the manuscript. After completion of the manuscript, the continuation of refining the manuscript for publication and preparation of a presentation for the completion of the DNP project took place over the next 12 weeks.

### **Results**

The evaluation plan specific for the PICOT question involved collecting blood pressure readings from the Medicare Advantage member, medication adherence percentage from the external medication adherence reporting data program, and displaying the data values on a graph. A member needed to be over the age of 65, enrolled as a Medicare Advantage member, diagnosed with hypertension, and taking hypertensive medications (J. Ham, personal communication, November 11, 2022). The practice site was notified for possible members to

admit into the care management program by admissions to the hospital and emergency room visits, then members were categorized into critical/high, moderate, and then low acuity (J. Ham, personal communication, November 11, 2022). Members were categorized through stratification. Members in the critical/high were designated for the population health assistant, non-medical staff, to reach out to them and present the care management utilization program (J. Ham, personal communication, November 11, 2022). Once the member was enrolled, a nurse was then assigned to the member for the remainder of the 90–120-day program (J. Ham, personal communication, November 11, 2022). The program was designed for this time period as the number of members significantly outweighed the number of medical staff (J. Ham, personal communication, November 11, 2022). Each member had contact at least one time per month with the nurse, but the nurse determined how often a member should be contacted based on member acuity (J. Ham, personal communication, November 11, 2022). Due to the National Committee for Quality Assurance (NCQA) requirements, the practice site was required to offer their members an opt-out option at any point during the enrollment in the care management program (J. Ham, personal communication, November 11, 2022).

The medication review was performed prior to member enrollment into the care management utilization program and every four weeks throughout the 10-week timeline. The medication review was done by utilizing the external medication adherence reporting data program. The implementation plan included the nurse obtaining blood pressures weekly from the members. The blood pressures were gathered by the nurse and analyzed at the end looking for at least a 5% decrease in readings over the 8-week time frame. The blood pressures were documented by the member on the blood pressure log sent to them from the institution.

Medication adherence was assessed every 4-weeks via an external medication adherence reporting data program and data values were displayed on a graph. There was an expectation of a 75% medication adherence rate by the end of the 10-weeks. The number of member visits to the emergency room or hospital admission over the prior 6 months was



documented, and every 4-weeks a report was ran using the stratification process. The number of visits were analyzed to compare the number of visits prior to care management utilization enrollment and at the completion of the program, expecting a 50% decrease in unnecessary visits gathered through the institutions claims department. The members acuity was considered and documented based on the health risk assessment and the stratification process prior to their enrollment. Another health risk assessment was done at the end to identify any change in the member. At the end of the 10-week project, the member had a new acuity based on the stratification process through the institutions program. The graph showed whether the PICOT outcome was achieved or not after the 10-week timeframe.

The medication adherence percentages were on a password protected thumb drive and secured in a locked drawer for HIPPA compliance. Each member had their own graph and identified through first initial of first name and first initial of last name. The members were identified by the class number followed by a dash and then a number based on their order in which they were enrolled. If there was data missing, it was taken into consideration during the final analysis, and an error rate was considered. The planned data analysis was put into a table format, then placed in a graph using points to indicate medication adherence percentages over a continuum. The medication adherence percentage prior to enrollment into the care management program and the end of the 8-week timeframe was evaluated. The expectation was that members were at least 75% compliant with their hypertension medication.

A significant statistical change was if a member's blood pressure readings decrease by at least 20 points, and members medication adherence was at least 75% or increased at least 25% from the pre-care management percentage. If members had a normal blood pressure and were nonadherent to their medication regimen they were encouraged to follow-up with their physician regarding the steps/actions taken to lower their blood pressure, including weight loss, exercise, low salt intake, etc. (J. Ham, personal communication, December 6, 2022). If a member had low blood pressure and are taking their hypertensive medications the registered

nurse instructed the member to contact their physician (J. Ham, personal communication, December 6, 2022). The registered nurse assisted the member in contacting their provider regarding low blood pressure, if necessary (J. Ham, personal communication, December 6, 2022). The registered nurse educated the member on the hazards of taking their medication when their blood pressure was low and reinforced the importance of contacting their provider (J. Ham, personal communication, December 6, 2022). There were no nurses involved in the change project. Clinical significance was important in evidence-based practice projects because if there was no significant change from pre to post intervention, there was no foundation the intervention used will improve a patients overall health outcome in a positive way.

According to Table 1.0 in Appendix O, the outcome showed either a positive, neutral, or negative outcome for the care management utilization program. The outcome quality was reliant on the process and balance. The process was discussed with the practice site administration, managers, and directors of other departments, population health assistants, and the registered nurses. The population health assistants and registered nurses trained on the platform for documentation and the information needed to be gathered for the final evaluation of the change project. The medication adherence review percentage was done on members prior to enrollment and then every 4-weeks, and then a final review was done at 10-weeks. The medication review adherence percentage determined whether in the 10-week period the care management utilization hypertension program improved the members medication adherence. The sustainability of the care management program relied on members positive health outcomes. The financial aspect relied on a members decreased unnecessary hospital and emergency room visits.

The project did not follow the implementation plan due to the lack of participant participation, therefore, no blood pressure data was collected. The implementation plan to analyze frequency of emergency room visits or re-hospitalizations, including financial reports, were not available to be reviewed. The system did not allow for financial reports to be collected

due to a limited project time frame. Finally, the member was assigned a public health assistant not a nurse due to staffing limitations for the purpose of the change project. Additionally, the health risk assessment was not administered due to the staffing limitation.

My role in the project was a participant in the current care management utilization program at the institution. The institutions pharmacy assisted in gathering medication adherence data, from the external medication adherence reporting data program, and relayed this information to the project participant in a secure email. The medication adherence percentages were transferred to a password protected thumb drive which was securely locked in a cabinet. The EPRC approval was expedited since the change project was not human subject research and was obtained. Approval was also obtained from the practice site.

The data collected included pre-enrollment medication adherence percentages, 4-week percentages, and 10-week percentages. This data was sent by the pharmacy on a weekly basis and filtered by the care management director and project participant. The pre-enrollment reports were difficult to identify those who were critical or high risk due to these reports being at the beginning of the year. The members enrolled all had 80-100% medication adherence, due to it being the first report of the year and member compliance was higher as compared to the end of the year. The high medication adherence rate was confirmed by pulling an end of the year report from 2022. The medication adherence rate to blood pressure relation was difficult to assess clinical significance due to lack of data at the closure of this pilot program. The integrity of the data sources was good as the medication adherence percentages were a raw number pulled from the practice site pharmacy. HIPPA concerns were managed by de-identification of the members. There were no blood pressure readings reported, therefore, no errors. The members demographic information included age range and gender on the medication adherence percentages graphs. The anticipated goal for medication adherence percentages was to have the members be at least 75% adherent over the course of the 10-weeks. The medication adherence percentages were plotted on a graph to show the trend from pre-

enrollement to the final percentages after the completion fo the 10-week project. There was not enough data to show that the care management program was clinically significant. There were a total of five participants. There were two females age range from 65-74 years old and three males from 65-84 years old. Member 7803-5, as seen in Appendix P, had a 13% decrease in medication adherence percentage over the 10-week project. The member 7803-5 was not engaged throughout the project with the public health assistant and was not reporting daily blood pressure readings. Members 7803-1 through 7803-3 all had 100% medication adherence rates. Member 7803-4 had a slight increase over the 10-week course from 97% to 99% medication adherence rate.

Member 7803-1 was enrolled in the program on 3/16/23 having contact with the public health assistant. After initial contact was made and onboarding was completed there were 15 text messages sent from 3/16/23-5/16/23 with no replies from the member. The member did view messages until 3/21/23 and then stopped. Member 7803-2 was enrolled and onboarded 3/10/23. There was a phone call attempt on 3/10/2023 with no call back. There were 16 text messages sent to the member from 3/10/23 through 5/16/23 with no response. Member 7803-3 was enrolled and onboarded 3/10/23 and member asked specifically for monthly phone calls for check-ins. There were phone call attempts made on 3/10/23, 4/5/23, 4/10/23, 4/24/23 (successful), and 5/12/23 (successful). The member stated they did not want to fill out any personal information on 4/24/23 and on 5/12/23 stated they wanted to disenroll from the program. Member 7803-4 was enrolled and onboarded 3/21/23 with phone call attempts made on 3/17/23, 3/21/23, and 4/11/23 with no success. A total of 12 text messages were sent from 3/21/23 through 5/16/23 with no member response. Member 7802-5 was enrolled and onboarded on 3/21/23. There was a phone call attempt made on 3/21/23 with no success. There were text messages sent on 3/21/23 and 3/22/23 with no response from the member. See Appendices P and R.

### **Impact**

The change project is unknown to have addressed the practice problem positively or negatively, as there was not enough data to analyze to come to a conclusion. The care management program did show the potential to have a positive effect on members medication adherence percentages as one member, 7803-5, was not engaged and had a 13% decrease in his medication adherence percentage while enrolled in the project. The change project altered the practice by addressing how members were enrolled, improve engagement, and effectively monitor medication compliance. The change project discovered a few issues with how members were enrolled, the steps to take to keep them engaged in the program, and an effective way to monitor progress throughout the program, by obtaining medication adherence percentages and blood pressure readings. At the completion of the project, new policies and procedures for the care management program were being developed based on the findings throughout the 10-week project, to streamline the process and provide overall consistency. The care management team decided to continue checking members medication adherence percentages once a month while enrolled in the program to monitor member compliancy.

Some of the changes that need to occur to improve the practice problem is clear communication across the care management team and with the members, streamlined policies and procedures, appropriate training for staff, adequate staff numbers, and tools to measure member compliancy. To ensure the care management program sustainability, the practice site needs to have new policies and procedures enforced to ensure continuity across the program for members and staff. Additionally, the members need to see improvement in their health to stay motivated to continue lifestyle changes and adherent to their medications. The practice site needs to see on the financial side a decrease in emergency room and unnecessary hospital admissions for the care management program to be sustained. To continue the ongoing evaluation of effectiveness, the practice site needs to continue to pull frequent reports of

emergency room visits, unnecessary hospital admissions, blood pressure readings, and medication adherence percentages to have an adequate amount of data.

There were several limitations to this study. The public health assistants encountered two of the four major limitations. The first limitation was the time-frame of the project itself being only a total of 10-weeks, and not enough time to see results, including the 2-week enrollment period. The two-week enrollment period was too long to wait for those enrolled in the first week until their first engagement with a staff member. The second limitation was gathering medication adherence percentages from the beginning of a new year, as members medication adherence is seen to be greater at the beginning of the year. The third limitation was the staff per member ratio. There was not enough staff to handle the call load of members during the 2-week enrollment time frame or enough registered nurses to take the lead in the project. Finally, the 2-week enrollment time period was too short to enroll members. This gave enough time to identify barriers with the enrollment process, but not enough time to change the process and see an increase in onboarding members. The implementation time frame of 8-weeks after did not allow enough time to show positive or negative results. The care management program for each member lasts 90-120 days and this will give the member and staff time to see change. The practice site discussed continuing to follow these members throughout the year with their medication adherence percentages after the completion of the care management program.

The process of member identification was also a limitation since the focus was by utilizing only the medication adherence percentage report, therefore, giving a smaller sample size. The process of identifying members was discussed to utilize the nursing staff who contact members after discharge from the hospital to expand the pool of members. By targeting those recently discharged, it increases the chance of those members enrolling into a care management program after a hospitalization due to their hypertension, to decrease the chance of another admission.

The facility also contributed a couple limitations. The first one being the staff were not adequately trained. The second limitation was not enough staff to onboard members. There was a meeting after the conclusion of this project to ensure all staff are adequately trained on the new policies and procedures to ensure continuity across the care management program. In regards to inadequate amount of staff, there was discussion of moving some staff around to other departments and identifying tasks that can be delegated to non-clinical staff, allowing the nurses to engage with members. Finally, the practice site ability to generate reports for hospital admission and emergency room visits was not feasible. The turn-around time to go from the medical facility, to claims, and then a report being generated at the practice site during the time frame of the project was not achievable. There was discussion about the admissions and financial reports, but no solutions were formed due to many different factors affecting these reports, including when the claim is filed, reviewed, and reported.

There were a few barriers the public health assistants encountered during the enrollment process. Those barriers were that the members did not feel like they needed additional support, did not see the benefit, already satisfied with current care, have a nurse/caregiver, does not have a smart phone, and refusal. The public health assistants had difficulty keeping the members engaged. The new policies and procedures will lay out scripts for the public health assistants to use when onboarding, along with specifications of responsibilities for both the member and public health assistants to adhere to during the program. This should improve member engagement throughout the program. They utilized text messaging and personal phone calls, but most of the time did not receive a response. The responsibilities for both member and public health assistants will be discussed during the onboarding process, therefore, to cater to the members preference of communication. After discussing these barriers, we concluded the time between enrollment and the start of the project implementation was too long.

The change project gave the practice site tools to use in the future for their overall care management program. There will be a streamlined script for staff to use specific questions to

ask during the enrollment time frame. The questions will help personalize the experience for the member based on personal preferences of text or phone calls for communication, along with ensuring the member has a blood pressure machine at home. During the enrollment in the care management program, the member will have identified their own responsibilities for the program and will be held accountable by the staff. A contract will be developed to be signed by both the member and staff to hold both parties accountable. When a member is enrolled, they will begin the care management program the following Monday from enrollment. The pharmacy will continue to utilize the medication adherence percentages to show member compliance and relay this information to the care management staff. The practice site will also utilize the discharge nurse and emergency room/unnecessary hospital admissions to assist in identifying higher risk members, and follow these visits throughout the time in the program for a financial picture of effectiveness at a higher level.

### **Dissemination Plan**

The results of the change project were shared virtually through a power point presentation to the administration, managers, directors, and the care management team at the practice site. A poster presentation was shared virtually for USAHS peers and faculty with a discussion to follow for questions and comments. The manuscript was published to the SOAR@USA. A peer review process took place prior to a submission of the abstract and the article publication. The peer review process included the Writing Center and peers within the Doctor of Nursing Practice and Master of Science in Nursing programs.

### **Conclusion**

The intention of the change project was to reinforce the importance of utilizing care management programs to improve medication adherence in Medicare Advantage members. Hypertension is one of the most common chronic medical conditions worldwide, accounting for 12.8% of all premature deaths (Adisa et al., 2018). About 45.3% of individuals with hypertension are nonadherent to their medication regimen (Agbor et al., 2018). The number one risk factor of



life lost is due to hypertensive medication nonadherence (Abegaz et al., 2017). The utilization of a team-based, patient focused care management program helps patients manage medical conditions effectively (Agency for Healthcare Research and Quality, 2018). Care management programs can improve medication adherence, therefore, decreasing the rate of mortality and morbidity.

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**Table 1**

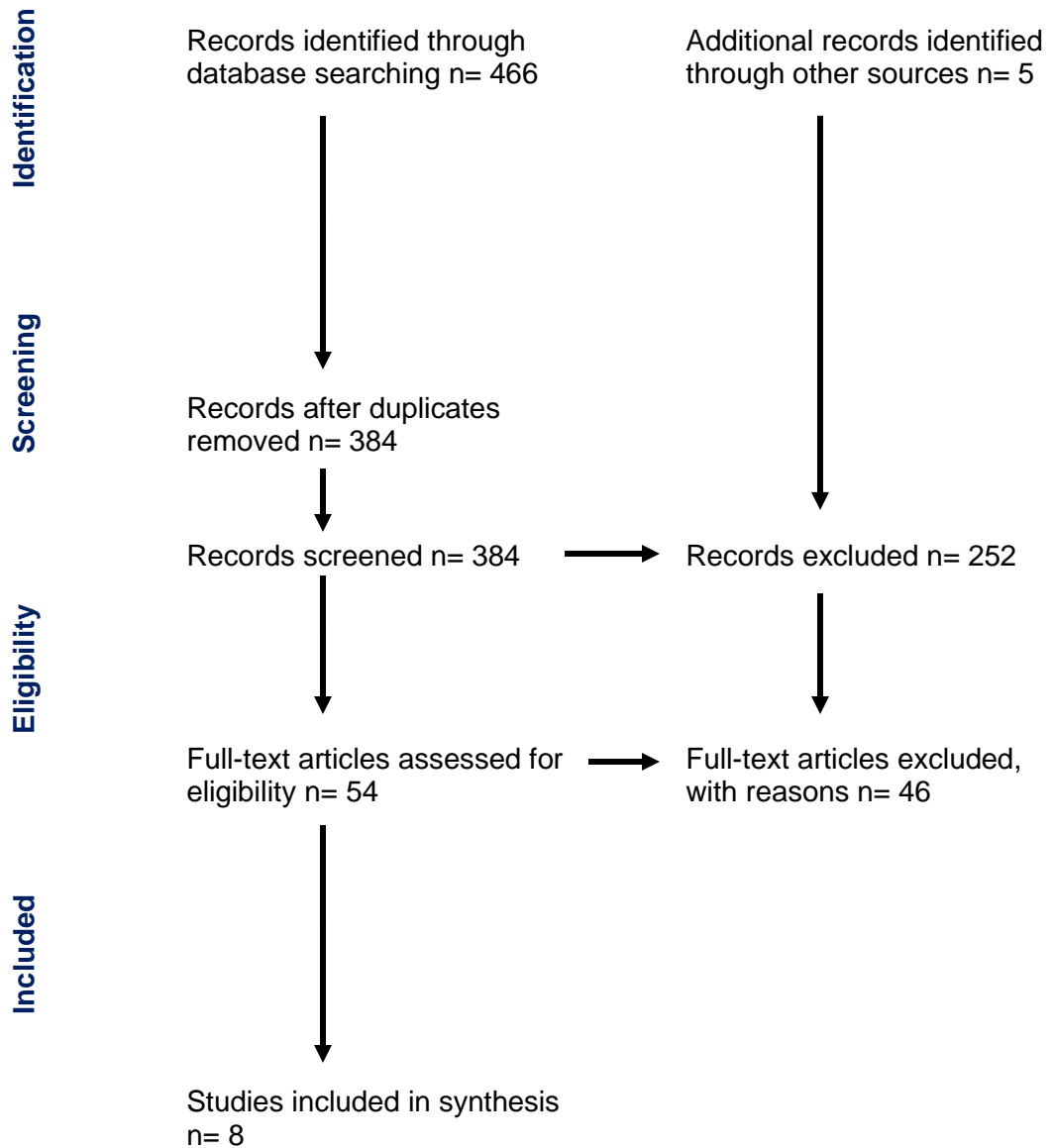
*Implementation EBP Project Budget*

Expenses		Revenue	
Indirect- Included in regular (BP monitors)	est. \$1,600	Billing	\$unknown
Operating costs			
Salary and benefits x 1 hour for training, variable staff.	\$82,000 per x5 RN \$25/hr per population health staff (4) \$90,000 care management supervisor \$110,000 for care management manager	Supplies/patient	\$unknown
Platform System	~\$500,000	Grants	\$0
Overhead (Laptops, phone)	\$1,000/each staff member		
Supplies – office (Copies)	\$<100		
Estimate Total Expenses	\$1,330,000	Estimate Total Revenue	\$0
Net Balance			\$NA

*Note:* All budget entries are estimates. Expenses are based on means. Revenue estimates do not include potential cost avoidance due to realized outcomes. All costs associated to salary and benefits, patient care supplies, and overhead are fixed indirect expenses not associated with this project. Project costs are nominal for printing and laminating, under \$100.

Figure 1

PRISMA Flowchart



Note. Prisma flow chart diagram from “Preferred Reporting Items for Systematic Reviews and Meta-analyses: The PRISMA Statement,” by D. Moher, A. Liberati, J. Tetzlaff, & D.G. Altman, 2009, *Annals of Internal Medicine*, 151(4), p.267 (<http://dx.doi.org/10.7326/0003-4819-151-4-200908180-00135>). Copyright 2009 by The American College of Physicians.

Appendix A

Summary of Primary Research Evidence

Citation	Design, Level Quality Grade	Sample Sample size	Intervention Comparison	Theoretical Foundation	Outcome Definition	Usefulness Results Key Findings
<p>Adisa, R., Ilesanmi, O. A., &amp; Fakeye, T. O. (2018). Treatment adherence and blood pressure outcome among hypertensive out-patients in two tertiary hospitals in Sokoto, Northwestern Nigeria. <i>BMC cardiovascular disorders</i>, 18(1), 194. <a href="https://doi.org/10.1186/s12872-018-0934-x">https://doi.org/10.1186/s12872-018-0934-x</a></p>	<p>Cross-sectional questionnaire guided with a retrospective review Quality A Level V</p>	<p>605 patients from two-tertiary healthcare systems located in Sokoto, Northwestern Nigeria</p>	<p>Lifestyle modifications score based off of 4-domains of non-pharmacological measures: cigarette smoking, alcohol cessation, salt-restriction, exercise. Morisky adherence scale was used to assess</p>		<p>Patients who have someone to help remind them to take their39wareness39 are more compliant. Patients need individualized education to help improve medication adherence</p>	<p>The patients were educated to eliminate any knowledge gaps that may affect adherence, A patient who has someone to remind them to take medication are more compliant. Patients were not</p>



			<p>medication adherence. Morisky adherence scale is reliable and valid in hypertension (Janezic et al., 2017)</p>		<p>adherent to their40ware ness40 regimen for many reasons such as forgetfulness, no reminder from companion, cigarette smoking and lack of exercise played a role. The need for patient knowledge and reminders is crucial to medication adherence.</p>
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<p>Huang, J., Xu, Y., Cao, G., He, Q., &amp; Yu, P. (2022). Impact of multidisciplinary chronic disease collaboration management on self-management of hypertension patients: A cohort study. <i>Medicine</i>, 101(28), e29797.  <a href="https://doi.org/10.1097/MD.00000000000029797">https://doi.org/10.1097/MD.00000000000029797</a></p>	<p>Cohort Study                      Level I                      Quality A</p>	<p>Intervention                      cohort                      study                      750                      patients                      with                      hypertensio                      n treated at                      Cardiovasc                      ular                      Medicine                      inpatient                      unit of the                      Union                      Hospital is                      Wuhan,                      China from                      December                      2018-                      December                      2019.                      Patient                      inclusion                      criteria                      resting                      blood                      pressure</p>	<p>Chronic                      Disease                      Management                      (CDM) was                      the                      intervention                      group and                      the other                      group was                      the control                      with no                      intervention.                      Each group                      had similar                      patients                      including age                      and gender                      when added                      to the CDM                      group one                      was added to                      the control                      group. The                      control group                      treated their                      hypertension                      according to</p>		<p>The CDM                      group showed                      higher scores                      for self-                      perception                      and                      management                      of                      hypertension                      and their                      blood                      pressures                      were better                      controlled.                      The patients                      quality f life in                      the control                      group was                      lower than                      those in the                      CDM group                      and the                      readmission                      rate,                      complications                      and length of                      stay in the</p>	<p>The CDM                      model is                      shown to be                      beneficial to                      helping                      hypertensiv                      e patients                      control their                      blood                      pressures                      and                      improve                      their quality                      of life. This                      gives my                      project the                      information                      needed to                      show how a                      collaborativ                      e/care                      manageme                      nt model                      can have a                      positive                      effect on                      patients</p>
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		<p>&gt;140/90 confirmed by more than 2 readings during hospitalization, availability for follow-up collection of medical records, &gt;18 years or older. The exclusions criteria included physical impairment, severe cognitive dysfunction in combination</p>	<p>their wishes while the CDM group utilized a multidisciplinary collaborative team.</p>		<p>hospital were also higher than those in the CDM group,</p>	<p>with hypertension and their medication adherence.</p>
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		<p>with depression or other mental illnesses. Or having secondary hypertension.</p>				
<p>Hamrahian S. M. (2020). Medication non-adherence: A major cause of resistant hypertension. <i>Current cardiology reports</i>, 22(11), 133.  <a href="https://doi.org/10.1007/s11886-020-01400-3">https://doi.org/10.1007/s11886-020-01400-3</a></p>	<p>Level III Quality B</p>	<p>No sample size. Informational</p>			<p>Hypertensive patients who are nonadherent to their medication regimen may cause harm to themselves and others well-being by increasing the risk of resistant hypertension.</p>	<p>The importance of medication adherence proves to be crucial as there is potential for causing harm to oneself and society. Resistant hypertension awareness</p>

						<p>is important for patients and providers to understand the reality of patient nonadherence to hypertensive medications.</p>
<p>American Heart Association. (2015). Hypertension. <a href="https://www.ahajournals.org/doi/full/10.1161/HYPERTENSIONAHA.119.13616?af=R#:~:text=What%20s%20Relevant%3F%201%20Nearly%20one-third%20of%20insured,mail-order%20pharmacy%20outlets%20had%20lower%20nonadherence%20rates.%20">https://www.ahajournals.org/doi/full/10.1161/HYPERTENSIONAHA.119.13616?af=R#:~:text=What%20s%20Relevant%3F%201%20Nearly%20one-third%20of%20insured,mail-order%20pharmacy%20outlets%20had%20lower%20nonadherence%20rates.%20</a></p>	<p>Level III Quality B</p>	<p>No sample. Information al</p>			<p>Defining hypertension and criteria for high blood pressure.</p>	<p>Understanding the criteria for one to be diagnosed with hypertension is important. The prevalence of hypertension is critical</p>

						<p>for providers to be aware of the growing number of individuals with hypertension.</p>
<p>Duke Health. (2018). Medication nonadherence increases health costs, hospital readmissions.  <a href="https://physicians.dukehealth.org/articles/medication-nonadherence-increases-healthcostshospitalreadmissions#:~:text=Medication%20nonadherence%20among%20patients%2C%20particularly%20those%20with%20chronic,high%20as%20%24300%20billion%20in%20potentially%20avoidable%20spending.">https://physicians.dukehealth.org/articles/medication-nonadherence-increases-healthcostshospitalreadmissions#:~:text=Medication%20nonadherence%20among%20patients%2C%20particularly%20those%20with%20chronic,high%20as%20%24300%20billion%20in%20potentially%20avoidable%20spending.</a></p>	<p>Level III Quality A</p>	<p>No sample. Informational</p>			<p>The growing number of patients with hypertension who are nonadherent to their medications increase the number of hospital readmissions, therefore, increasing healthcare cost for patient, health insurance,</p>	<p>The staffing concerns currently can affect the care given to patients when there is an overflow of patients to be seen and cared for in the hospital setting. The increase in hospital</p>

					and healthcare facility.	readmission to the hospital for high blood pressure and patients not taking their medication, affects the whole organizatio n and can be taking beds and staff away from those patients who need to be hospitalized . These readmission s can be prevented.
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<p>Nursing World. (n.d.). Current theories of change management.  <a href="https://www.nursingworld.org/~49379b/globalassets/catalog/sample-chapters/npdsamplechapter.pdf">https://www.nursingworld.org/~49379b/globalassets/catalog/sample-chapters/npdsamplechapter.pdf</a></p>	<p>Level III Quality B</p>	<p>No sample, Information al</p>			<p>Information regarding current theories for the change management.</p>	<p>Helps guide my project in identifying the most appropriate theory.</p>
<p>Nursology. (2018). Transitions framework/transitions theory.  <a href="https://nursology.net/nurse-theories/transitions-framework-transitions-theory/">https://nursology.net/nurse-theories/transitions-framework-transitions-theory/</a></p>	<p>Level IV Quality B</p>	<p>No sample. Information al.</p>			<p>Information on the different transitions' framework/the ories.</p>	<p>Helps guide my project in identifying the most appropriate transitions framework/t heory for my project.</p>
<p>Rural Health Information Hub. (2022). Chronic care management.  <a href="https://www.ruralhealthinfo.org/care-management/chronic-care-management">https://www.ruralhealthinfo.org/care-management/chronic-care-management</a></p>	<p>Level IV Quality B</p>	<p>No sample. Information al.</p>			<p>Chronic care management assists patients with hypertension to improve medication adherence and quality of life.</p>	<p>The supporting information shows the positive effect of chronic care manageme nt in</p>



						<p>patients with hypertension and their medication adherence. This information supports my intervention of care management in patients with hypertension and their medication adherence.</p>
<p>Poulter, N. R., Borghi, C., Parati, G., Pathak, A., Toli, D., Williams, B., &amp; Schmieder, R. E. (2020). Medication adherence in hypertension. <i>Journal of hypertension</i>, 38(4), 579–587. <a href="https://doi.org/10.1097/HJH.0000000000002294">https://doi.org/10.1097/HJH.0000000000002294</a></p>	<p>Level IV Quality A</p>	<p>No sample. Informational</p>			<p>Patients with hypertension and nonadherent to medication regimen can be due to a</p>	<p>The provider/patient relationship can improve the outcome of</p>

					<p>provider/patient relationship and the use of multiple medications.</p>	<p>patients with hypertension. Patients with hypertension are found to have better adherence to their regimen if only one pill is prescribed.</p>
<p>Kulkarni, S., Rao, R., Goodman, J., Connolly, K., &amp; O'Shaughnessy, K. M. (2021). Nonadherence to antihypertensive medications amongst patients with uncontrolled hypertension: A retrospective study. <i>Medicine</i>, 100(14), e24654. <a href="https://doi.org/10.1097/MD.00000000000024654">https://doi.org/10.1097/MD.00000000000024654</a></p>	<p>Level II Quality A</p>	<p>174 urinary adherence screens done from patients referred to Addenbrooke's Hospital, Cambridge for uncontrolled</p>	<p>Binary logistic regression analysis done for and nonadherence using age, sex, and the number of medications as</p>		<p>Rate of nonadherence to one or more medications was 40.3% and 14.4% of all the patients were nonadherent to all</p>	<p>The awareness of risk factors for nonadherence is crucial for a provider to identify. A combination medication may be more</p>

		<p>d hypertension</p>	<p>independent predictors</p>		<p>prescribed 50awareness50 ension medications. Only 25.9% of patients were nonadherent to at least 1 medication. Women were 3.3 times more likely to be nonadherent and polypharmacy (&gt;6 medications) had a 52% nonadherent rate.</p>	<p>appropriate for individuals at risk for nonadheren ce than having to take two pills or more.</p>
<p>Song, C., Li, X., Ning, X., &amp; Song, S. (2020). Nursing case management for people with hypertension: A randomized controlled trial protocol. <i>Medicine</i>, 99(52), e23850. <a href="https://doi.org/10.1097/MD.00000000000023850">https://doi.org/10.1097/MD.00000000000023850</a></p>	<p>Level I Quality A</p>	<p>200 patients ages 18-60 years old from May 2021 to</p>	<p>Nursing care management vs a control group</p>		<p>There was a significant decrease in patients' blood pressure, BMI, number of</p>	<p>Nursing care manageme nt improves patients with</p>

		May 2022 at the People's Hospital of Chengyang District.			hypertensive medications, waist circumference , and decrease prevalence of comorbidities in those patients utilizing nursing care management program.	hypertensio n prognosis by improving medication adherence.

Legend:

Level I: Randomized Control Trial

Level II: Quasi-experimental

Level III: Nonexperimental

Level IV: Clinical practice guideline/consensus or position statement

Level V: Literature review, integrative review, expert opinion, case report, organizational experience, community standard, clinician experience or consumer preference

Quality A: High Quality: Expertise is clearly evident, draws definitive conclusions, and provides scientific rationale; thought leader in the field

Quality B: Good Quality: Expertise appears to be credible, draws fairly definitive conclusions, and provides logical argument for opinions

Quality C: Low Quality: Expertise is not discernable or is dubious; conclusions cannot be drawn.

Appendix B

Summary of Systematic Reviews (SR)

Citation	Quality Grade	Question	Search Strategy	Inclusion/ Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/ Recommendation/ Implications
<p>Abegaz, T. M., Shehab, A., Gebreyohannes, E. A., Bhagavathula, A. S., &amp; Elnour, A. A. (2017). Nonadherence to antihypertensive drugs: A systematic review and meta-analysis. <i>Medicine</i>, 96(4), e5641.  <a href="https://doi.org/10.1097/MD.00000000000005641">https://doi.org/10.1097/MD.00000000000005641</a></p>	<p>Level II Quality A</p>	<p>What is the percentage of adults with hypertension are nonadherent to their medication regimen?</p>	<p>PubMed</p>	<p>Inclusion: Medication Nonadherence, Hypertension, Adults, Full text, Abstract, English, 2017-2022, systematic review                      Exclusion: Before the year 2017, Not English, No Abstract, Other medical conditions such as Diabetes discussed</p>	<p>28 studies identified consisting of 13,688 hypertensive patients. 45.2% of hypertensive patients were nonadherent to medications, 83.7% had uncontrolled blood pressure. 31.2% with comorbidities were nonadherent</p>	<p>There is a significant number of hypertensive adults who are nonadherent to their medication regimen and also an even higher proportion have uncontrolled blood pressure</p>	<p>This is useful in showing the need for intervention in individuals with hypertension. Interventions to improve medication adherence should be utilized.</p>
<p>Agbor, V. N., Takah, N. F., &amp; Aminde, L. N. (2018). Prevalence and factors associated with medication adherence among patients with hypertension in sub-Saharan Africa: protocol for a systematic review and meta analysis. <i>BMJopen</i>, 8(3),e020715.  <a href="https://doi.org/10.1136/bmjopen-2018-020715">https://doi.org/10.1136/bmjopen-2018-020715</a></p>	<p>Level II Quality B</p>	<p>What is the prevalence and factors associated with patient with hypertension medication adherence?</p>	<p>PubMed</p>	<p>Inclusion: Medication Nonadherence, Hypertension, Adults, Full text, Abstract, English, 2017-2022, systematic review                      Exclusion: Before the year 2017, Not English, No Abstract, Other medical conditions such as Diabetes discussed</p>	<p>A number of tools are used in the studies to determine medication adherence including a Brief Medication Questionnaire, Eight-Item Morisky Medication Adherence Scale and Medication Adherence Report Scale</p>	<p>There are a number of factors including cost, cultural beliefs, low awareness, access to healthcare and safe effective medications are concerns.</p>	<p>These findings are useful to identify the gaps needed to find a solution through intervention.</p>

Citation	Quality Grade	Question	Search Strategy	Inclusion/ Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/ Recommendation/ Implications
2017-020715							

Legend:

Level I: Randomized Control Trial

Level II: Quasi-experimental

Level III: Nonexperimental

Level IV: Clinical practice guideline/consensus or position statement

Level V: Literature review, integrative review, expert opinion, case report, organizational experience, community standard, clinician experience or consumer preference

Quality A: High Quality: Expertise is clearly evident, draws definitive conclusions, and provides scientific rationale; thought leader in the field

Quality B: Good Quality: Expertise appears to be credible, draws fairly definitive conclusions, and provides logical argument for opinions

Quality C: Low Quality: Expertise is not discernable or is dubious; conclusions cannot be drawn.



Appendix C

Project Schedule

NUR7801								
Activity	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15
Meet with preceptor	Discuss change project	Discuss plan for change project into the next two terms to prepare for project proposal.	Discuss project progress and what needs to be done and looking ahead to final submission requirements.	Touch base via email with progress of project proposal.	Touch base on project progress with phone call. Send proposal for review.	Focus is on gaining authorization to organization	Send proposal for review.	Send proposal for final review before submission.
Prepare project proposal	Significance of the Practice Problem	PICOT Question, Evidence-based practice framework and Change Theory	Evidence Search Strategy	Evidence Tables with Evidence Search Results	Settings, Stakeholders, and Systems Change. Themes with Practice Recommendations	Implementation Plan with Timeline and Budget	Dissemination and Evaluation Plan	Final Project Proposal

NUR7802								
Activity	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15
Meet with preceptor	Gather all documents and discuss with preceptor required documents.	Twice a month routine meeting to discuss project progression.	Twice a month routine meeting to discuss project progression.	Twice a month routine meeting to discuss project progression.	Twice a month routine meeting to discuss project progression.	Twice a month routine meeting to discuss project progression.	Twice a month routine meeting to discuss project progression.	Twice a month routine meeting to discuss project progression.
Prepare project proposal								
Pre-change	Gather all required documents for approval submission.	Submit all required documents for approval.	Finalize and prepare all documents for implementation.		Ensure all staff have appropriate training on hypertension protocol and documentation platform. Review expectations for change project with nurses, population health staff and care management supervisor.			
Approval					Obtain all required approvals by this week to start implementation of care management program.			

<p>Member Enrollment</p>						<p>Make first contact with first member of Medicare Advantage based on stratification already implemented at BCBS of Kansas. Each population health staff member reaches out to 10 new members for enrollment. Discuss program expectations and benefits. After enrollment member will be sent information from AHA on hypertension, lifestyle modifications, blood pressure log, and how to take a blood pressure.</p>		
<p>Member Contact</p>							<p>Member contact once a week. Gather blood pressure readings, medication review, pill count, and lifestyle modifications. Encourage patient.</p>	

Medication/Blood Pressure Review							Document member blood pressure via graph to see trend across a timeline. Each member having their own graph in Excel spreadsheet.	Document member blood pressure via graph to see trend across a timeline. Each member having their own graph in Excel spreadsheet.
Data Collection							Document member blood pressures in Excel spreadsheet.	Document member blood pressures in Excel spreadsheet.

NUR7803								
Activity	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15
Meet with preceptor	Twice a month routine meeting to discuss project progression.	Twice a month routine meeting to discuss project progression.	Twice a month routine meeting to discuss project progression.	Twice a month routine meeting to discuss project progression.	Twice a month routine meeting to discuss project progression.	Twice a month routine meeting to discuss project progression.	Twice a month routine meeting to discuss project progression.	Twice a month routine meeting to discuss project progression.
Member Contact	Member contact once a week. Gather blood pressure readings, medication review, pill count, and lifestyle modifications. Encourage patient.	Member contact once a week. Gather blood pressure readings, medication review, pill count, and lifestyle modifications. Encourage patient. Discuss results of medication review.						
Medication/Blood Pressure Review	Document member blood pressure via graph to see trend across a timeline. Adding information to each member's own graph in Excel spreadsheet.	Gather data from pharmacy on member medication adherence via the pharmacy platform for gathering such data. Document member blood pressure via graph to see trend across a timeline. Adding information to each member's own graph in Excel spreadsheet. Complete data collection and analysis.	Refine Manuscript/prepare presentations.	Refine manuscript/prepare presentations.	Refine manuscript/prepare presentations.	Refine manuscript/prepare presentations.		

<p>Data Collection</p>	<p>Document member blood pressures in Excel spreadsheet.</p>	<p>Document member blood pressure and medication adherence percentage in Excel spreadsheet.</p>						
<p>Data Analysis</p>			<p>Gather each member individual spreadsheet with blood pressure readings and medication adherence percentages and finish graphing results. Analyze the data determining if medication adherence has improved and blood pressures decreased throughout the 10-week period. Then take the overall average blood pressures from Week 1, Week 4 and Week 8 to see an overall timeline of blood pressure readings</p>					

Dissemination			<p>The results of the project will be sent out to the members who are directly involved in the care management program via mail. Other identified members with hypertension will receive these results via mail.</p>				<p>A virtual meeting with BCBS of Kansas will take place and results will be shared via Power point presentation. The results will also be shared locally and at a state level to Montana Nurses Association via a conference using the same power point as demonstrated to BCBS of Kansas. Results of the project will also be published to SOAR@USA.</p>	
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## Appendix D

## Data Collection Tool for Evaluation

The external medication adherence reporting data program is the medication adherence program utilized by the practice site pharmacy to gather medication adherence information to give to providers and use internally (M. Parker, personal communication, November 28, 2022).



Appendix E

SWOT Analysis

<p><b>Internal</b></p>	<p><b>Strengths</b></p> <ul style="list-style-type: none"> <li>-Organizational support</li> <li>-Positive environment</li> <li>-Organizational collaboration</li> </ul>	<p><b>Weaknesses</b></p> <ul style="list-style-type: none"> <li>-Required staffing</li> <li>-Resources</li> <li>-Member involvement</li> </ul>
<p><b>External</b></p>	<p><b>Opportunities</b></p> <ul style="list-style-type: none"> <li>-Improve member health</li> <li>-Update policies/procedures to improve patient outcomes</li> <li>-Make a local, regional, national, and global impact</li> </ul>	<p><b>Threats</b></p> <ul style="list-style-type: none"> <li>-Finances</li> <li>-Lack of interest from members</li> <li>-Lack of provider support</li> </ul>

## Appendix F

## Health Risk Assessment Tool

**Medicare Health Risk Assessment**

This Health Risk Assessment (HRA) provides an opportunity to review your current health status and the lifestyle choices that influence your health and well-being.

**Instructions**

Before you begin, please read the following information carefully and follow all instructions. This assessment does not substitute for a physical examination or medical care by your doctor. Likewise, it may not address all of the health risks that could be of concern to you, especially if you have existing medical issues.

Please use an ink pen to complete this assessment. No pencil. Print letters and numbers clearly. If you make an error, neatly cross it out and write the correct response as clearly as possible.

**Submit this form using one of the following methods:**

Send a secure fax to: [Reward Program Phone Number] Email a copy to: [Customer Service Email]

Mail a copy to:

ATTN: Healthmine

P.O. Box 40

West Long Branch, NJ 07764

A personalized report will be posted on your [Reward Program] portal on [Vanity URL] within [#-#] weeks.

**Personal Information**

FIRST NAME \_\_\_\_\_

LAST NAME \_\_\_\_\_

DATE OF BIRTH \_\_\_\_\_ MEMBER ID \_\_\_\_\_ EMAIL ADDRESS

\_\_\_\_\_  
PHONE NUMBER \_\_\_\_\_ PRIMARY CARE DOCTOR

NAME \_\_\_\_\_

**About you**

1. What language do you prefer? • Arabic

- Chinese • English
- French
- German • Japanese • Korean
  
- Russian
- Spanish
- Vietnamese • Other

2. What sex were you assigned at birth?
  - Male
  - Female
  - Unknown
  - Prefer not to answer
3. How do you describe yourself?
  - Male
  - Female
  - Transgender male/trans man/female-to-male (FTM)
  - Transgender female/trans woman/male-to-female (MTF)
  - Genderqueer, neither exclusively male nor female
  - Additional gender category or other, please specify: \_\_\_\_\_
  - Prefer not to answer
4. Do you consider yourself to be:
  - Straight or heterosexual
  - Lesbian or gay or homosexual
  - Bisexual
  - Something else, please describe: \_\_\_\_\_
  - Don't know
  - Prefer not to answer
5. What best describes your race? (Check all that apply.)

***Why am I being asked this?*** By knowing more about your racial background, we can better meet your healthcare needs and look for conditions that are more likely to occur in certain communities.

- American Indian or Alaska Native
  - Asian
  - Black or African American
  - Native Hawaiian or Other Pacific Islander
  - White
  - Two or more races
  
  - Some other race
  - Prefer not to answer
6. What best describes your ethnicity?

***Why am I being asked this?*** *By knowing more about your ethnic background, we can better meet your healthcare needs and look for conditions that are more likely to occur in certain communities.*

- Hispanic or Latino
  - Not Hispanic or Latino
  - Prefer not to answer
7. Do you have any problems with your eyesight that requires special services or reading materials? (e.g., Blindness, Glaucoma, Diabetic Retinopathy, Age-related macular degeneration)

*This does not include glasses or contacts.*

• No • Yes

8. Do you have any problems with your hearing that requires special services or equipment? (e.g., Profound hearing loss or deafness)

• No • Yes

9. Do you need help filling out health forms (e.g., medical history forms, medication lists, medical consent forms, immunization forms)?

• No • Yes

10. What is your height? \_\_\_\_\_ ft \_\_\_\_\_ in.

11. What is your weight? \_\_\_\_\_ Lbs.

### **Health Conditions**

12. A. Do you have, or have you had any of the following health conditions? (Check all that apply)

- Asthma
- Autoimmune Disease (Type 1 Diabetes, Rheumatoid Arthritis, Psoriasis, Lupus, Multiple Sclerosis, Graves' Disease)
- Alzheimer's Disease/Dementia
- Cancer
- Chronic Obstructive Lung Disease (COPD)
- End Stage Renal Disease (ESRD)
- Diabetes
- Heart or vascular disease (Heart attack, stroke, carotid artery disease, coronary artery disease (CAD), peripheral artery disease (PVD))
- Heart Failure
- High Blood Pressure

- High Cholesterol
- HIV/AIDS
- Prediabetes
- Mental or Behavioral Health Condition (anxiety, bipolar disorder, depression, etc.)
- Obesity
- None of these
- Other, please specify: \_\_\_\_\_

If none, skip question 12B.

B. Do you have difficulty managing any of these conditions? • Yes

• No

13. How would you describe your overall health?

- Excellent
- Good
- Average
- Poor
- Very poor

14. In the past 2 weeks, how often have you felt pain?

- Almost never
- Some of the time
- Most of the time
- Almost all of the time

15. How many times in the past year have you fallen?

- None
- 1 time, without injury
- 1 time, with injury requiring medical attention
- 2 or more falls with or without injury

16. Do you have issues with balance or walking?

- Yes, and I do **not** use an assistive device (such as a walker or cane)
- Yes, and I use an assistive device (such as a walker or cane)
- No

17. Select all that apply to your daily home life: (Check all that apply)

- I can stand up from a seated position without help
- I can walk outside the house without help
- I can walk inside the house without help
- I can eat a meal without help
- I can prepare a meal without help
- I can bathe without help
- I can get dressed without help
- I can go to the bathroom without help

18. Are there times you worry about having enough to eat? • Yes

- No

19. Do you have a way of getting to and from doctor appointments, the pharmacy, or grocery store?

- Yes

- No

20. Have you had difficulty paying your bills in the past 12 months? • Yes

- No

21. In the past 12 months, have you struggled to find a place to live? • Yes

- No

22. Advance care planning is making decisions about your end-of-life medical care if you are not able to

make your own decisions.

Do you have an Advance Directive (written statement of your wishes), Living Will or Healthcare Power of Attorney, in the case that an injury or illness causes you to be unable to make healthcare decisions?

- Yes

- No

### **Stress & Well-Being**

23. In the past 2 weeks, how often have you felt stressed, nervous, anxious, on edge, or not able to control your worrying?

- Almost never
- Some of the time
- Most of the time
- Almost all of the time

24. In the past 2 weeks, how often have you had little interest or pleasure in doing things that you normally like to do?

- Almost never
- Some of the time
- Most of the time
- Almost all of the time

25. In the past 2 weeks, how much of the time have you felt tired, worn out, used up, or exhausted?

- Almost never
- Some of the time
- Most of the time

- Almost all of the time

**Lifestyle**

26. On a typical day and night, how many hours of sleep do you usually get?

- 0-3 hours
- 4-6 hours
- 7-9 hours
- 10+ hours

27. A. How many different prescription medications are you taking on a regular basis?

- None
- 1-5
- 5 or more

If none, skip question 27B.

B. How often do you take your medications as prescribed (the way you have been told to take them by your doctor or pharmacist)?

- Always
- Almost always
- Sometimes
- Rarely or Never

28. Do you use any tobacco products? (e.g., Cigarettes, cigars, e-cigarettes, chewing tobacco, snuff.)

- No
- Used to but quit
- Yes, some days
- Yes, every day

29. How many alcoholic beverages do you drink in a typical week?

- None
- 1 to 7 drinks per week
- 8 to 14 drinks per week
- 15 or more drinks per week

30. Are you interested in receiving help for any other type of substance abuse?

- Yes
- No

- I don't use any other substances
- Prefer not to answer

31. On a typical day, how many servings of fruits and vegetables do you eat?

*1 serving = 1 cup of fresh vegetables, 1/2 cup of cooked vegetables, or 1 medium piece of fruit; 1 cup = size of a baseball*

- None
- 1-2 servings
- 3-4 servings
- 5+ servings
- I don't know

32. On a typical day, how many servings of high fiber or whole grain foods do you eat?

*1 serving = 1 slice of 100% whole wheat bread, 1 cup of whole grain or high-fiber ready-to-eat cereal, 1/2 cup of cooked cereal such as oatmeal, or 1/2 cup of cooked brown rice or whole wheat pasta*

- None
- 1-2 servings
- 3-4 servings
- 5+ servings
- I don't know

33. On a typical day, how many servings of fried or high-fat foods do you eat?

*Examples of servings include fried chicken (per piece), fried fish (1 fillet), bacon (1 strip) French fries (12-15 fries), potato chips (12-15 chips), 1 doughnut, whole milk (1 cup), cheese (1.5 ounces), mayonnaise (2 teaspoons), creamy salad dressings (2 Tablespoons).*

- None
- 1-2 servings
- 3-4 servings
- 5+ servings
- I don't know

34. In the last 7 days, how often did you take part in continuous physical activity like walking, jogging, or swimming for at least 20 minutes in a day?

- Every day
- 3-6 days
- 1-2 days
- 0 days



**Prevention**

35. In the past two years, have you had a mammogram to screen for breast cancer?

- Yes
- No
- Not applicable

If yes, please list the date of the test and the facility where the test was performed.

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36. Have you had a colonoscopy in the past 10 years?

- Yes
- No
- Not applicable

If yes, please list the date of the test and the facility where the test was performed.

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If no, have you had a different type of colon cancer screening (FOBT/FIT/Cologuard/Flexible Sigmoidoscopy) in the past three years?

- Yes
- No

If yes, please list what type of colon cancer screening and the date of screening.

---



---



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37. How many times in the past 6 months have you visited the emergency room? •0

- 1to2 • 3to4 • 5+

38. How many times in the past 6 months have you been admitted to the hospital? •0

- 1to2 • 3to4 • 5+

39. Have you received a COVID-19 primary series vaccine and the most updated booster vaccine?  
(*The updated booster was approved by the FDA on August 31, 2022.*)

- Yes
- No
- I don't know

40. Have you had both doses of the Shingles vaccine?

- Yes
- No
- I don't know

41. Have you ever had a pneumonia vaccine?

- Yes
- No
- I don't know

42. Have you had a flu shot in the past year?

- Yes
- No
- I don't know

Congratulations! You finished your Health Risk Assessment!

By completing and submitting this survey, you:

1. Agree to the Privacy Policy and Terms of Use
2. Are allowing your health plan access to your health information to provide services and

resources that can help you be healthy

For a copy of the full Privacy Policy or Terms of Use, visit the [Reward Program] portal on [Vanity URL] or call [Reward Program] Customer Service at [Reward Program Phone Number] to request a copy. You can reach us from [Hours of Operation].

[Disclaimer] [Material ID] [Tracking ID]

Appendix G

Understanding Blood Pressure Readings

BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper	and/or	DIASTOLIC mm Hg (lower
	number)		number)
<b>NORMAL</b>	LESS THAN 120	and	LESS THAN 80
<b>ELEVATED</b>	120 – 129	and	LESS THAN 80
<b>HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1</b>	130 – 139	or	80 – 89
<b>HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2</b>	140 OR HIGHER	or	90 OR HIGHER
<b><u>HYPERTENSIVE</u></b>	HIGHER THAN 180	and/or	HIGHER THAN 120
<b><u>CRISIS</u> (consult your doctor immediately)</b>			

American Heart Association. (2022). Understanding blood pressure readings.

<https://www.heart.org/en/health-topics/high-blood-pressure/understanding-blood-pressure-readings>

Appendix H

How to Take Your Blood Pressure

**BLOOD PRESSURE MEASUREMENT INSTRUCTIONS**

American Heart Association.

**INSTRUCTIONS:**

- DON'T SMOKE, EXERCISE, DRINK CAFFEINATED BEVERAGES OR ALCOHOL WITHIN 30 MINUTES OF MEASUREMENT.
- REST IN A CHAIR FOR AT LEAST 5 MINUTES WITH YOUR LEFT ARM RESTING COMFORTABLY ON A FLAT SURFACE AT HEART LEVEL. SIT CALMLY AND DON'T TALK.
- MAKE SURE YOU'RE RELAXED, SIT STILL IN A CHAIR WITH YOUR FEET FLAT ON THE FLOOR WITH YOUR BACK STRAIGHT AND SUPPORTED.
- TAKE AT LEAST TWO READINGS 1 MIN. APART IN MORNING BEFORE TAKING MEDICATIONS, AND IN EVENING BEFORE DINNER. RECORD ALL RESULTS.
- USE PROPERLY CALIBRATED AND VALIDATED INSTRUMENT. CHECK THE CUFF SIZE AND FIT.
- PLACE THE BOTTOM OF THE CUFF ABOVE THE BEND OF THE ELBOW.

**American Heart Association recommended blood pressure levels**

BLOOD PRESSURE CATEGORY	SYSTOLIC mm Hg (upper number)	and	DIASTOLIC mm Hg (lower number)
NORMAL	LESS THAN 120	and	LESS THAN 80
ELEVATED	120-129	and	LESS THAN 80
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 1	130-139	or	80-89
HIGH BLOOD PRESSURE (HYPERTENSION) STAGE 2	140 OR HIGHER	or	90 OR HIGHER
HYPERTENSIVE CRISIS (consult your doctor immediately)	HIGHER THAN 180	and/or	HIGHER THAN 120

**BLOOD PRESSURE HIGHER THAN 180/120 mm Hg IS A CRISIS.\***

\*Wait a few minutes and take blood pressure again. If it's still high, contact your doctor immediately.

LEARN MORE AT [HEART.ORG/HBP](https://www.heart.org/hbp)

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American Heart Association. (2022). Monitoring your blood pressure at home.

<https://www.heart.org/en/health-topics/high-blood-pressure/understanding-blood-pressure-readings/monitoring-your-blood-pressure-at-home>

## What is High Blood Pressure?

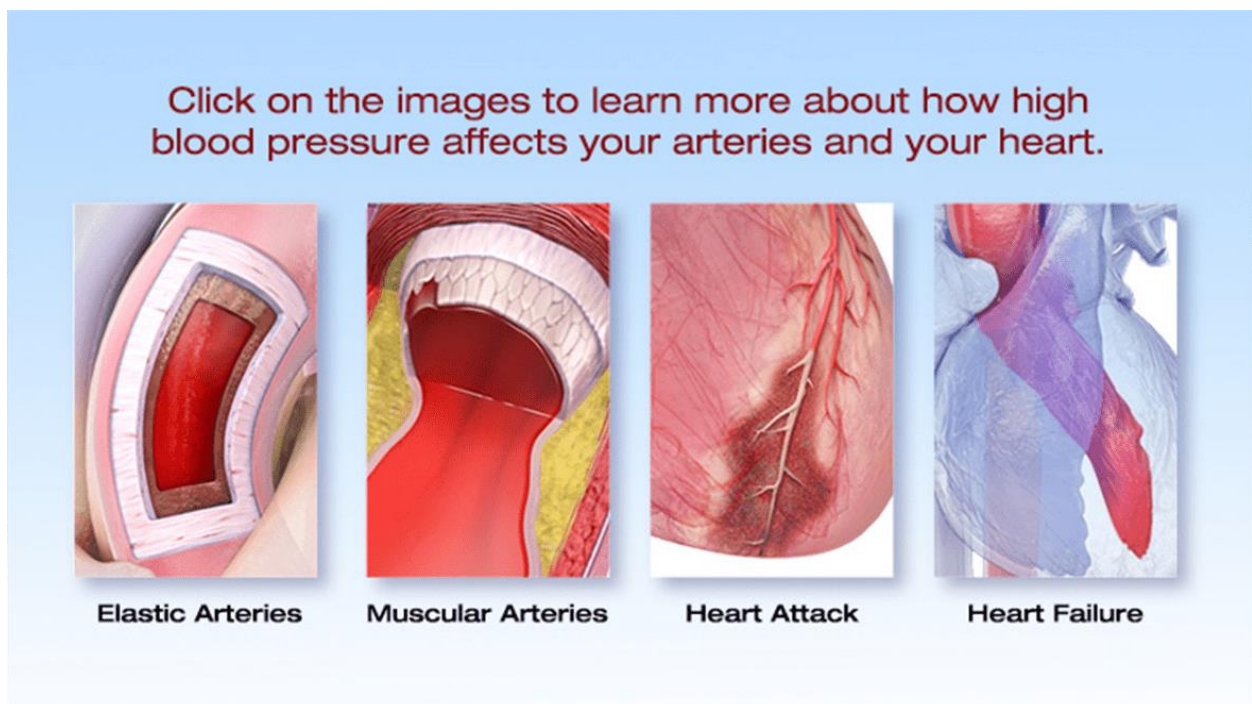
### *First, let's define high blood pressure*

High blood pressure (HBP or hypertension) is when your blood pressure, the force of your blood pushing against the walls of your blood vessels, is consistently too high.

### *How your blood pressure and circulatory system work*

In order to survive and function properly, your tissues and organs need the oxygenated blood that your circulatory system carries throughout the body. When the heart beats, it creates pressure that pushes blood through a network of tube-shaped blood vessels, which include arteries, veins and capillaries. This pressure — blood pressure — is the result of two forces: The first force (systolic pressure) occurs as blood pumps out of the heart and into the arteries that are part of the circulatory system. The second force (diastolic pressure) is created as the heart rests between heart beats. (These two forces are each represented by numbers in a [blood pressure reading](#).)

[See how high blood pressure can damage your arteries and heart.](#)



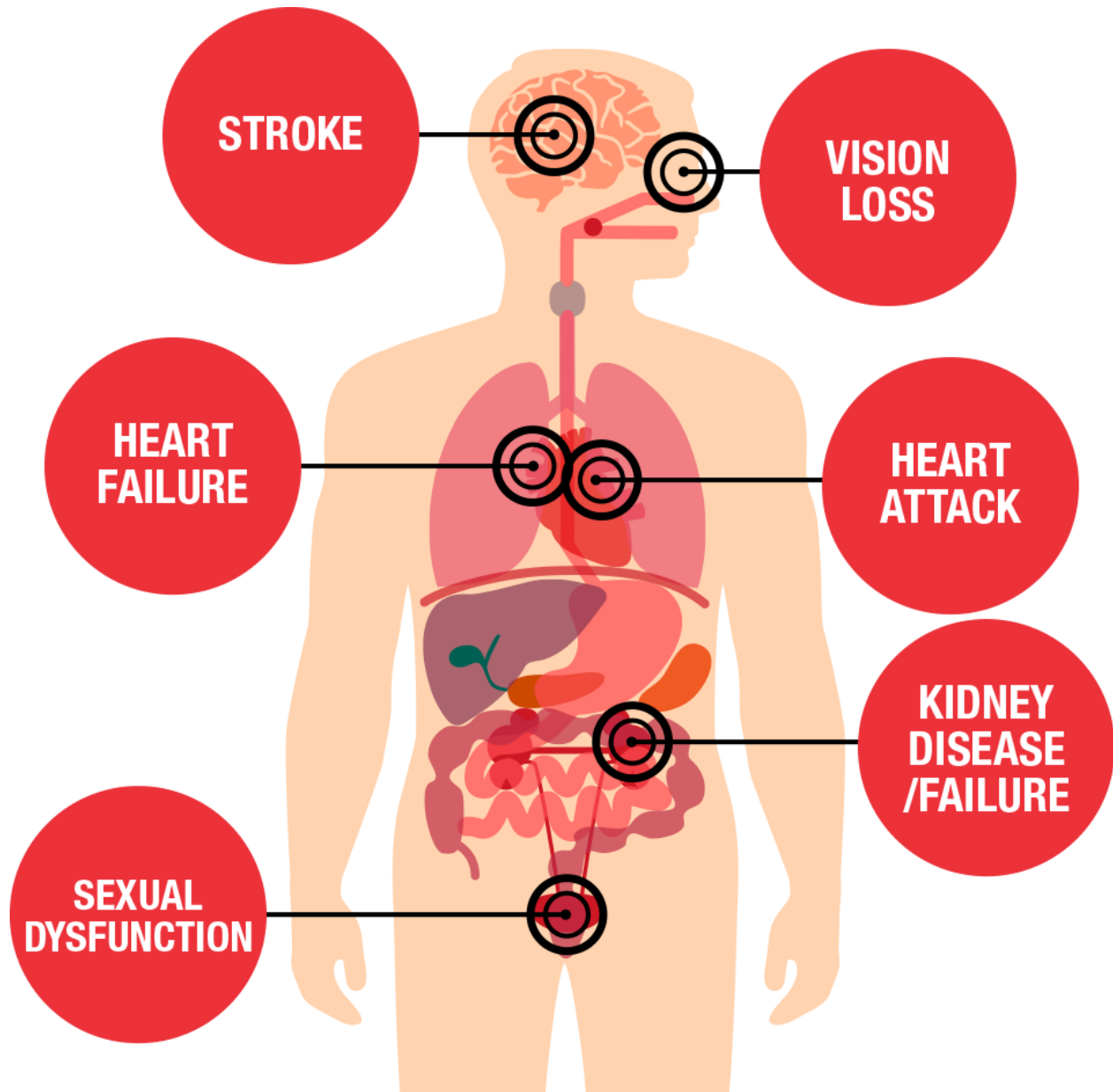
### *The damage starts in your arteries and heart*

The primary way that high blood pressure causes harm is by increasing the workload of the heart and blood vessels — making them work harder and less efficiently.

Over time, the force and friction of high blood pressure damages the delicate tissues inside the arteries. In turn, LDL (bad) [cholesterol](#) forms plaque along tiny tears in the artery walls, signifying the start of [atherosclerosis](#).

The more the plaque and damage increases, the narrower (smaller) the insides of the arteries become — raising blood pressure and starting a vicious circle that [further harms](#) your arteries, heart and the rest of your body. This can ultimately lead to other conditions ranging from [arrhythmia](#) to [heart attack](#) and [stroke](#).

- [See how high blood pressure can damage the inside of your arteries.](#)
- [See how atherosclerosis takes place.](#)
- [See how your heart can become enlarged.](#)
- [See an infographic of the consequences of high blood pressure. \(PDF\)](#)



*High blood pressure is a “silent killer”*

You may not feel that anything is wrong, but high blood pressure could be quietly causing damage that can [threaten your health](#). The best prevention is [knowing your numbers](#) and [making changes that matter](#) in order to prevent and manage high blood pressure.

American Heart Association. (2022). What is high blood pressure.

<https://www.heart.org/en/health-topics/high-blood-pressure/the-facts-about-high-blood-pressure/what-is-high-blood-pressure>



## Appendix J

***Make changes that matter:***

- [Eat a well-balanced diet](#) that's [low in salt](#)
- [Limit alcohol](#)
- [Enjoy regular physical activity](#)
- [Manage stress](#)
- [Maintain a healthy weight](#)
- [Quit smoking](#)
- [Take your medications properly](#)
- [Work together with your doctor](#)

***Managing blood pressure is a lifelong commitment***

If you have high blood pressure, it's vital that you listen to your doctor. Remember: You're a part of your healthcare team. [You and your doctor are partners](#).

Educate yourself about HBP and learn [how to monitor your blood pressure at home](#). Armed with this information, you can commit to living heart healthy.

By adopting a heart-healthy lifestyle, you can:

- Reduce high blood pressure.
- Prevent or delay the development of high blood pressure.
- Enhance the effectiveness of blood pressure medications.

- Lower your risk of [heart attack](#), [stroke](#), [heart failure](#), [kidney damage](#), [vision loss](#) and [sexual dysfunction](#).

American Heart Association. (2022). Changes you can make to manage high blood pressure.

<https://www.heart.org/en/health-topics/high-blood-pressure/changes-you-can-make-to-manage-high-blood-pressure>

Appendix K

Blood Pressure Log – Data Collection for Evaluation

"Month"	Blood Pressure	Pulse
1		
2		
3		
4		
5		
6		
7		
8		
9		
0		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		
25		
26		
27		
28		
29		
30		
31		

The validity of gathering blood pressure readings is taken at face value. The readings were reliant upon member reliability and knowledge of taking a blood pressure appropriately.

Appendix L

Member Survey

**Question Statistics Summary**

\*Any Survey | \*Any Workgroup | From: 4/01/2022 | Today | This Week | This Month | This Year  
 \*Any User | To: 11/28/2022 | Yesterday | Last Week | Last Month | Last Year

Question	Response	Count	% Responses
How satisfied were you with your Case Manager? 1 Very satisfied 2 Press 1 2 Satisfied 2 Press 2 3 Neither satisfied or dissatisfied 2 Press 3 4 Somewhat satisfied 2 Press 4 5 Not at all satisfied 2 Press 5			

**Question Statistics Summary**

\*Any Survey | \*Any Workgroup | From: 4/01/2022 | Today | This Week | This Month | This Year  
 \*Any User | To: 11/28/2022 | Yesterday | Last Week | Last Month | Last Year

Question	Response	Count	% Responses
Do you feel you were able to follow your Case Manager's Recommendations? Very satisfied ? Press 1 Satisfied ? Press 2 Neither satisfied or dissatisfied ? Press 3 Somewhat satisfied ? Press 4 Not at all satisfied ? Press 5			
	Very satisfied [1]	203	85.7%
	Satisfied [2]	29	12.2%
	Neither satisfied or dissatisfied [3]	4	1.7%
	Not at all satisfied [5]	1	0.4%
Would you like to share feedback about your Case Manager experience? Press 1 for Yes Press 2 for No			
	Yes [1]	92	40.5%
	No [2]	135	59.5%
At the tone, please provide any comments you would like to share regarding your Case Manager experience. Press the pound key when you are finished to be disconnected.?			
	Recorded Response Med Mgt [R]	171	100.0%
How satisfied were you with the services you or your family received from this Blue KC program? Very satisfied ? Press 1 Satisfied ? Press 2 Neither satisfied or dissatisfied ? Press 3 Somewhat satisfied ? Press 4 Not at all satisfied ? Press 5			
	Very satisfied [1]	210	88.6%
	Satisfied [2]	21	8.9%
	Neither satisfied or dissatisfied [3]	4	1.7%
	Somewhat satisfied [4]	1	0.4%

## Appendix M

## Hypertension Assessment – Care Management

**QUESTIONS**

Does the call result in a successful contact with the member or care giver?

Hello, this is {CareStaffLastName}, a care manager from xxxxx. I am calling to follow up on Mr/Ms. Xxxxx's health.

Confirm diagnosis of Hypertension

Have you received a flu vaccination?

Have you received a pneumonia vaccination?

Depending on age & sex:

Have you had a Colonoscopy?

Have you had a PSA & rectal exam?

Have you had a Mammogram or Well woman exam?

What is the member's blood pressure range?

Does the member know the causes?

Does the member have any of these risk factors?

When was the member's blood pressure last checked?

Has the member undergone diagnostic tests?

Is the member receiving treatment for their condition?

Is the member taking their prescribed medications?

Does the member have any side effects of medications?

Does the member have a primary care provider/specialist in place to treat their condition?

Does the member have any associated comorbid conditions?

Has the member experienced any of these symptoms due to uncontrolled blood pressure?

Does the member know what to do when there is hypertension crisis?

Does the member have any complications?

Has the member been hospitalized or had an ER visit recently?

Was the member on regular follow ups?

What concerns do you have regarding your ability to purchase nutritious food, medications, utilities, clothing, transportation, housing, basic-necessities, safety (working smoke detectors, carbon monoxide detector, physical safety)?

What arrangements have you made should you be unable to make important decisions for yourself, including things like your health, pets, finances, living will?

Does the member have knowledge regarding their condition?

We have completed part one "Assessment & Treatment" of your assessment, do you wish to continue to part 2 "Rehab & Lifestyle modification" of your assessment?

Ask member if you can help them with any other information?

Help member with the required information and provide contact information for any future questions they may have.

Schedule time for another call and update records to reflect that.

End Call

## Appendix N

Hypertension Rehab – Telephonic by Registered Nurse from BCBS of Kansas Care Management Program (Will get permission statement to use)

**QUESTIONS**

Does the call result in a successful contact with the member or care giver?

Hello, this is {CareStaffLastName}, a care manager from xxxxx. I am calling to follow up on Mr/Ms. Xxxxx's health.

Does the member know their height and weight to calculate the BMI?

What is the member's Height?

What is the member's Weight?

Display BMI

Does the member monitor blood pressure regularly at home?

Does the member follow DASH diet plan?

Does the member follow any of these dietary tips?

Is the member following an exercise regimen?

Does the member consume alcohol?

Does the member smoke?

Does the member know how to manage stress?

Ask member if you can help them with any other information?

Help member with the required information and provide contact information for any future questions they may have.

Schedule time for another call and update records to reflect that.

End Call



Appendix O

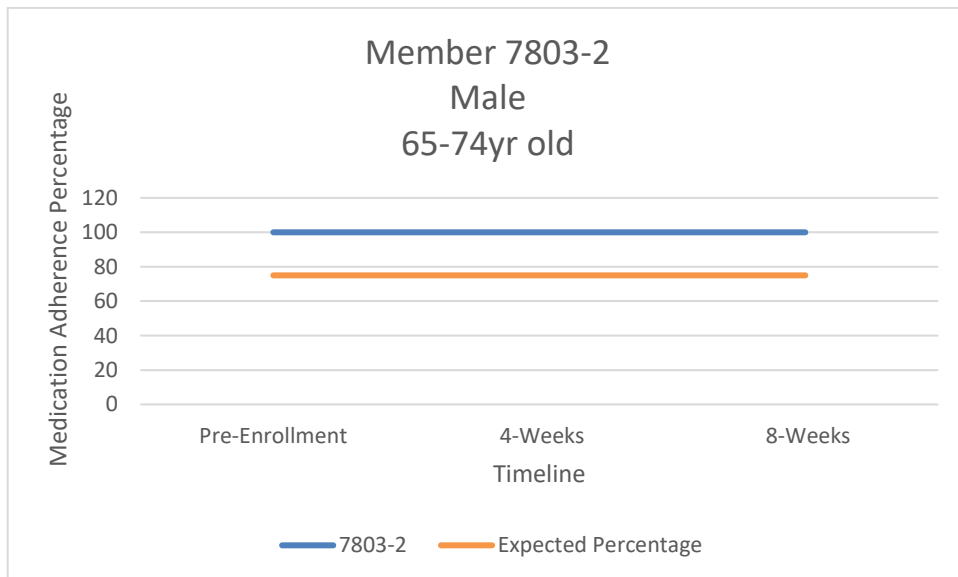
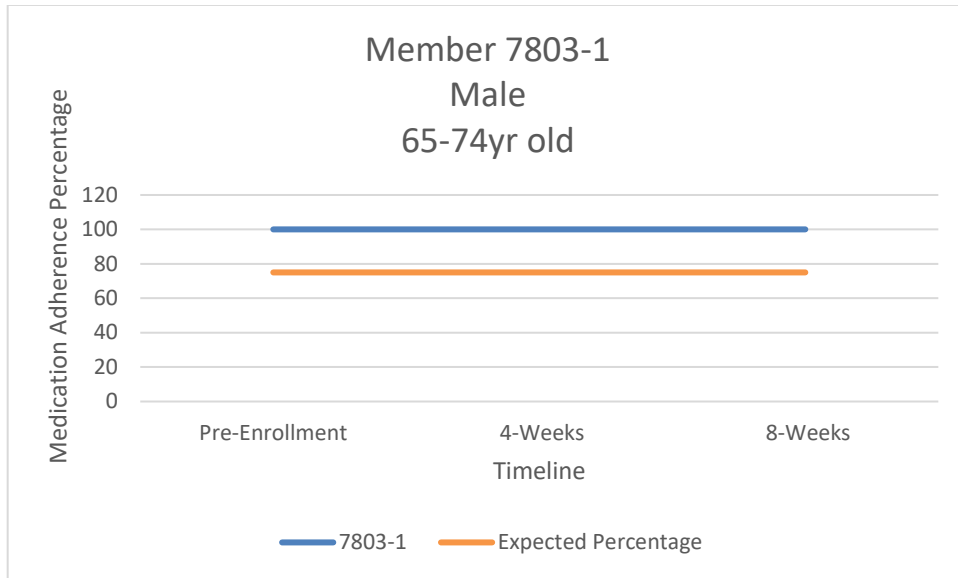
Table 1.0

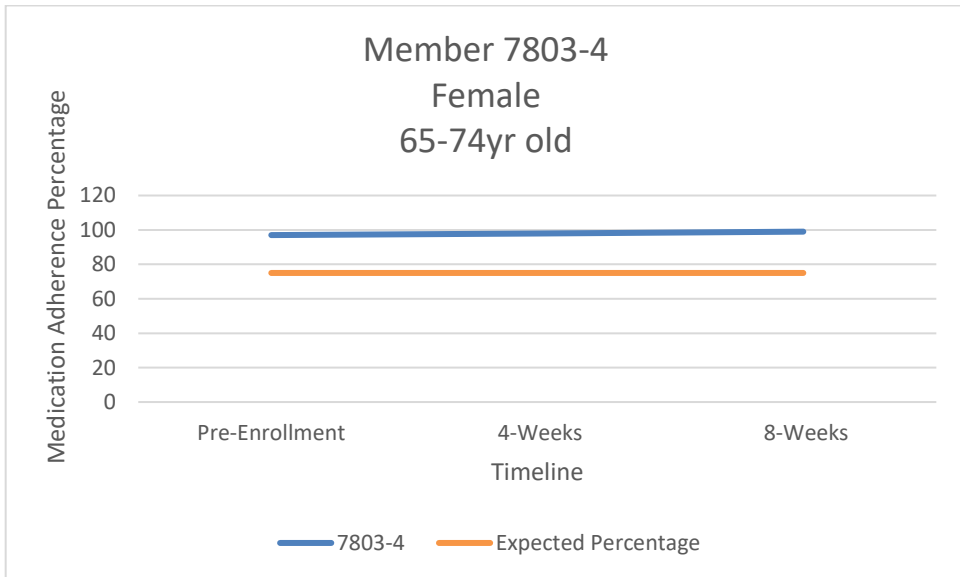
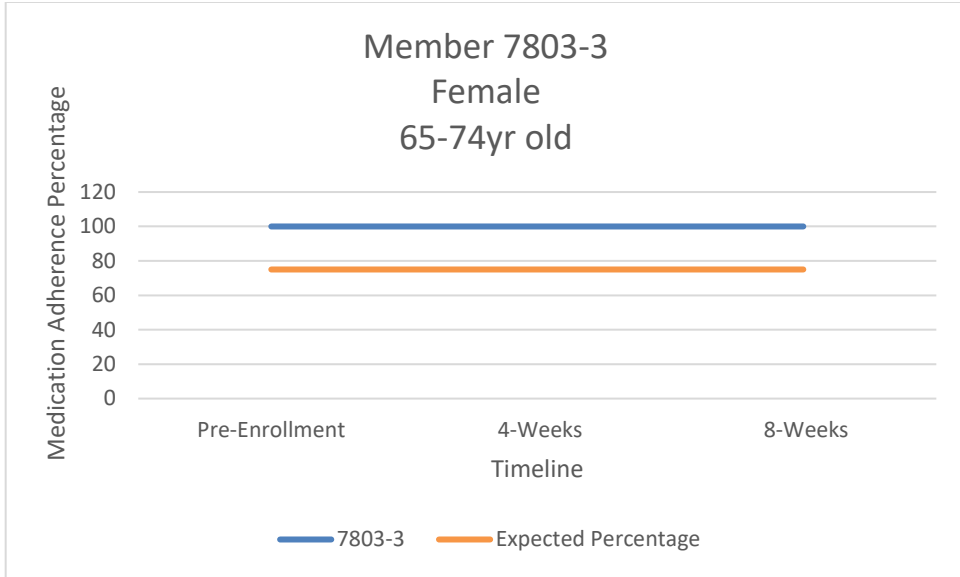
Outcome	Process	Balancing	Financial	Sustainability
<p>Comparison of blood pressures and medication adherence percentage prior to enrollment in care management program to blood pressures after 12-weeks of enrollment. Results will be analyzed by reviewing the graphs prepared during the 12-weeks of member blood pressures and medication adherence every four weeks review. Members will use a blood pressure log to record blood pressures and report to registered nurse. The medication review for adherence will be done via pharmacy platform.</p>	<p>The implementation of the care management program for hypertension will be discussed with the administration of the BCBS of Kansas and then brought to all director and managers attention within the insurance company. The process of how members will be identified, enrolled, and managed throughout the care management program. The population health assistants and registered nurses will be trained on the platform for documentation and the member process for the 12-week change project. Members will document their blood pressures daily and</p>	<p>Each registered nurse will be responsible for a number of members and gathering the blood pressure readings. The registered nurses are also responsible for providing the member with information regarding hypertension, co-morbidities, lifestyle modifications and a blood pressure log. The member also has responsibility of making sure contact is made at least once a week and being compliant in taking blood pressures and their medications. The care management program is a collaborative effort between member and nursing staff.</p>	<p>The cost of the care management program has already been purchased and implemented via a budget. There is an upfront cost for BCBS of Kansas and will have long-term financial benefit from decreasing the cost of unnecessary hospital admissions, emergency room visits, and co-morbidities such as kidney disease, stroke, and heart attack related cost.</p>	<p>The sustainability of the care management program will be based on member success and overall health improvement. After a members' enrollment in the program the overall results will be shared to other members to increase enrollment with within BCBS of Kansas. The care management program success will be dependent upon continuous enrollment with members, word of mouth, member results and success stories, and outreaching from population health to members.</p>

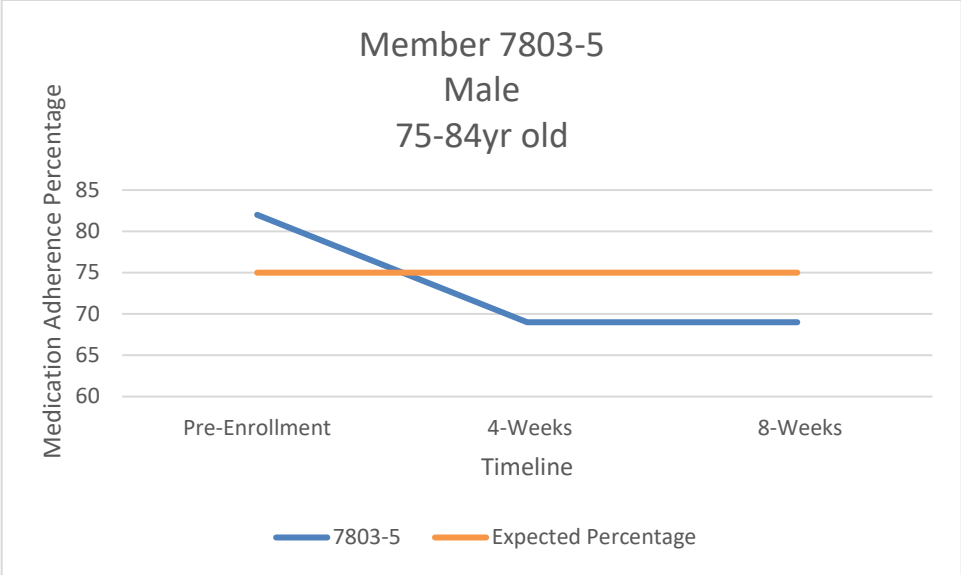
	<p>report to a registered nurse once a week or more depending on the need of each individual patient. The registered nurse will also gather a prior blood pressure to being enrolled in the care management program. These will be graphed to show a continuum over the 12-week timeframe. The medication adherence review will be done prior to enrollment and every four weeks during the 12-week timeframe. These results will also be documented through a graph. The results from blood pressure readings and medication adherence percentage will be compared and followed over the time frame with the graphs. The medication adherence will be done through the pharmacy platform.</p>			
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Appendix P

Medication Adherence Percentages







Appendix Q

Via Email:

You have permission to data or the components of our care management programs below:

External Medication Adherence Reporting Data

Care Management Electronic Medical Record (EMR)

Digital Care Management Platform

Member Survey

Health Risk Assessment

Hypertension Assessment

Hypertension Rehab

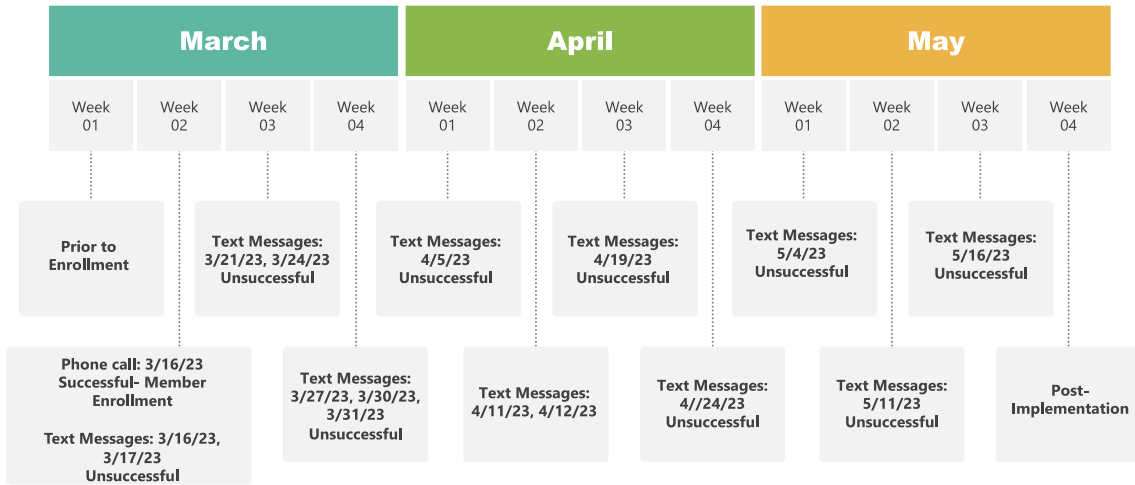
Thank you,

L. Gehrt, Mentor

Appendix R

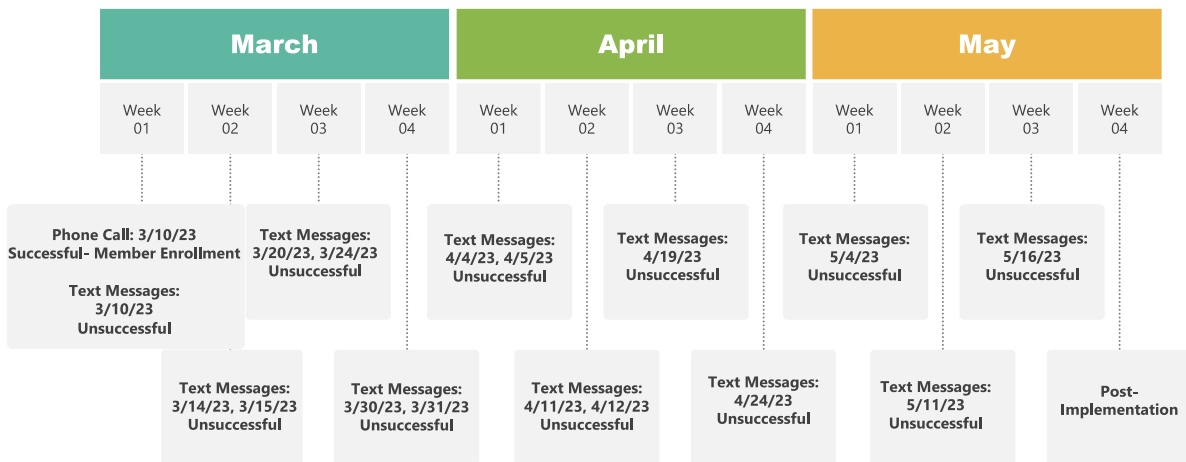
## Outreach, Enrollment, and Engagement Overview

Digital Care Management of Hypertension – Member 7803-1



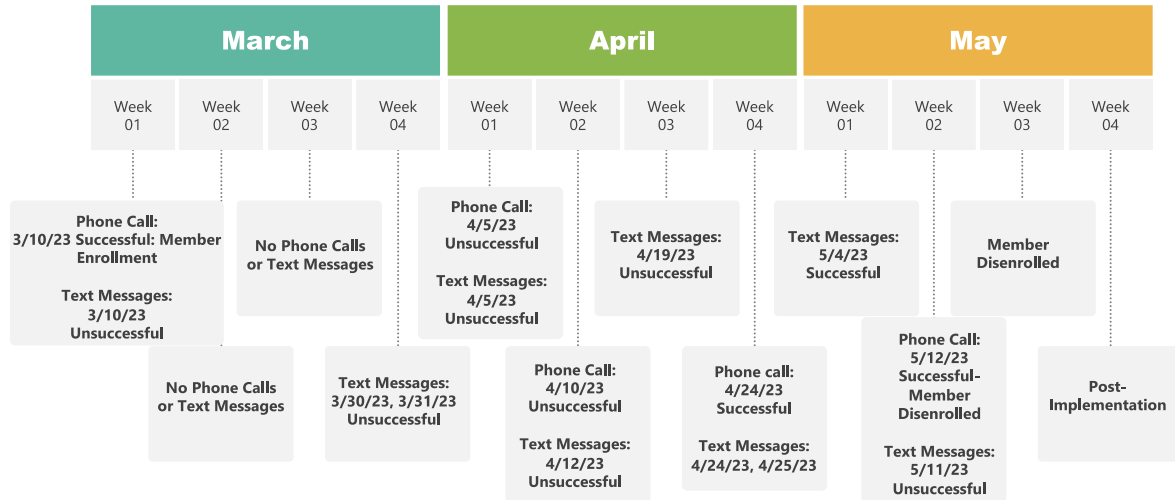
## Outreach, Enrollment, and Engagement Overview

Digital Care Management of Hypertension – Member 7803-2



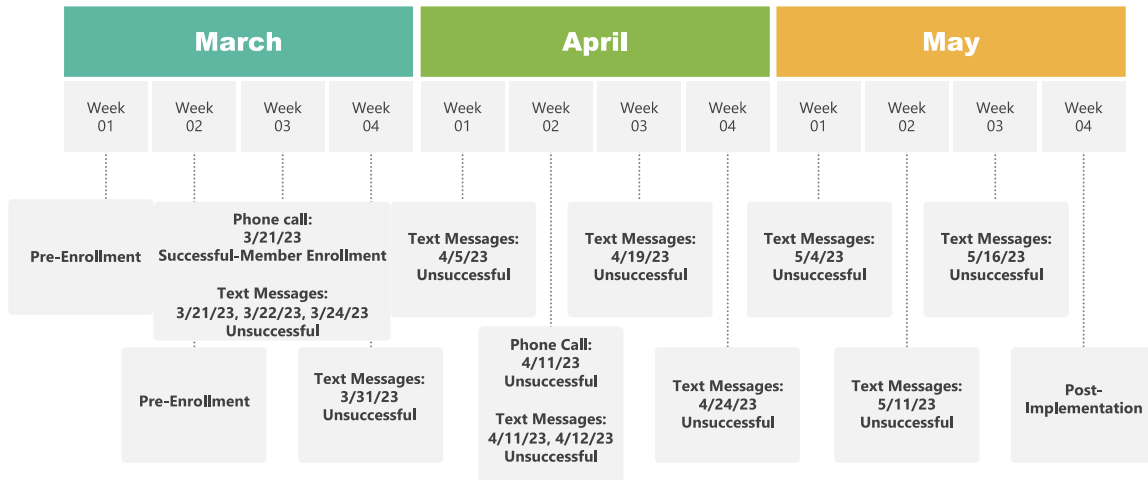
## Outreach, Enrollment, and Engagement Overview

Digital Care Management of Hypertension – 7803-3



## Outreach, Enrollment, and Engagement Overview

Digital Care Management of Hypertension – 7803-4





# Outreach, Enrollment, and Engagement Overview

Digital Care Management of Hypertension – 7803-5

