Health Literacy Assessment and the Meaningful Use Incentive of Providing Clinical Summaries in an Underserved, Hypertensive Population

Tami Pettenger
Grand Valley State University

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Summaries in an Underserved, Hypertensive Population

Tami Pettenger

Kirkhof College of Nursing

Grand Valley State University

Advisor: Andrea Bostrom PhD, PMHCNS-BC, RN

Advisory team GVSU member: Marie VanderKooi, DNP, MSN, RN-BC

Advisory team community member: Karen Kennedy, M.D.

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Abstract

Hypertension is a common diagnosis in the United States and can lead to health complications if not well managed. However, this condition often has few to no symptoms which may lead patients to modify, disregard, or otherwise be non-adherent to treatment plans. Also a patient’s health literacy level may directly affect his or her ability to understand and act on health information. This may be especially true in vulnerable populations such as older adults and underserved communities. In addition, the education material provided to patients, such as clinical summaries following a health visit, may not be consistent or understandable or help the patient put instructions into action. Therefore this project aimed to assess the health literacy level of a group of patients at an underserved, urban clinic. It also aimed to assess the understandability and actionability of the printed clinical summary for the same group of patients. The convenience sample consisted of adult, English-speaking, primarily African American patients diagnosed with hypertension who were between the ages of 24 and 85 with a mean age of 55 years. It was discovered that patient definitions of hypertension vary widely (some not even related to the condition), though the majority of patients described it accurately. Health literacy scores were found to be higher than anticipated based on literature-based assumptions. Also, clinical summaries were found to have a combination of strengths and weaknesses in regard to both understandability and actionability.

Keywords: health literacy, meaningful use, underserved, patient education, patient adherence, hypertension management, clinical summaries
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Health Literacy Assessment and the Meaningful Use Incentive of Providing Clinical Summaries in an Underserved, Hypertensive Population

Executive Summary

A patient’s ability to understand, process, and act on health information is crucial to maintaining health and following treatment plans. Also, the understandability of education materials presented to patients may impact their ability to comprehend and act on the information. Clinical summary distribution to patients is encouraged by government-funded programs and is meant to reinforce health information for patients and act as a written resource. This can be beneficial to enhance outcomes for chronic conditions such as hypertension. Thankfully, tools currently exist to assess both health literacy level and the adequacy of patient education materials.

Previous studies indicate certain patient populations may have additional barriers to health information, understanding, and action. These social determinants of health include low socioeconomic status, immigrant status, minority status, older age, and having multiple comorbid conditions (Almader-Douglas, 2013). Therefore, an assessment of health literacy and patient education materials in a group of patients in an underserved clinic was used to help direct efforts to increase patient adherence and better health outcomes. This is also important to drive maximum reimbursement from healthcare payers. Further, simply complying with the meaningful use incentive of providing a clinical summary (printed patient plan) following a visit does not ensure that the information is easily understood by patients. Changes to the education process or printed education materials in the outpatient clinical setting may be necessary to improve outcomes.

After analysis, the results of this project indicate that patients may have a higher health literacy level than anticipated. This might be explained by response bias on the self-
report measure used since the DNP student assessments were generally higher than the assessments completed by the case manager who has an established relationship with the patients. The patients may have wanted to appear more understanding to someone new. It could also be considered that the patients who meet with the case manager do so as a result of impaired health literacy and the presence of chronic, comorbid conditions.

The assessment of clinical summaries indicated strength in some areas of understandability and actionability. These characteristics include the document generally making the purpose evident, breaking down information into sections, providing informative headers and visual cues, and addressing the patient directly while identifying at least one action for the patient to take. On the other hand, several areas of improvement were also identified in both areas. These include the need for providers to consistently use an active voice when writing instructions; using common, everyday language as often as possible; and using medical terms primarily to familiarize the patient with terms. Other areas of improvement include presenting information in a logical sequence; providing a summary; attaching simple visual aids to augment education whenever possible; and breaking down actions into specific, manageable steps.
Introduction and Background

Health Literacy

Health literacy is defined by the U.S. Department of Health and Human Services (USDHHS, 2008) as “the ability to obtain, process, and understand basic health information and services to make appropriate health decisions” (para. 1). It also involves more than simply the ability to read (Almader-Douglas, 2013). Health literacy means having the skills to read, listen, and analyze complex data, then apply the information to healthcare and decision-making (Almader-Douglas, 2013). According to the National Assessment of Adult Literacy (USDHHS, 2008), only 12% of American adults had proficient health literacy, measured by the ability to use a table to calculate an employee’s share of health insurance costs for a year. In addition, limited health literacy is not exclusive to certain racial/ethnic groups or adults without a high school education, but can affect even those with a college education (USDHHS, 2008). The most common triggers of low health literacy include unfamiliarity with medical terms or body functions, inability to interpret numbers or risks necessary to make health decisions, fear and confusion caused by a diagnosis of a serious illness, and complex conditions that require sophisticated self-care (USDHHS, 2008).

In the U.S., 90 million or more people have difficulty navigating the healthcare system and, as a result, their own health (Institute of Medicine [IOM], 2004). The most common demographic traits of adults who struggle with health literacy include low income, minority status, immigrant status, older age, and multiple comorbid conditions (Almader-Douglas, 2013). In the selected project setting, basic demographic data support concern for this population. For instance, of the 3592 patients that are seen at the clinic, 79% are minority (60% Black, 19% other) and 27% are over the age of 50 (Megan Williams, personal communication, May 20, 2016). Additionally, the nearest public high school has a graduation rate of 44% which is much
lower than the Michigan state average of 82%, and the student body consists of 92% minority compared to the state percentage of 32% (Public School Review, n.d.). Although not all patients that use the clinic live in the surrounding neighborhood, a majority of them do, and therefore these statistics may help understand education demographics. These factors are important to consider regarding patient education and understanding of the treatment plan in a primary care setting.

**Meaningful Use**

The Centers for Medicare and Medicaid Services created an electronic health record incentive program, meaningful use, to attract healthcare agencies to participate in electronic health information management (HealthIT.gov, 2015). Many practices have attempted to adapt documentation processes and data management resources to comply (HealthIT.gov, 2015). However, current guidelines leave room for broad interpretation and therefore variation may exist. Health organizations may adopt certain incentives but not others or only partially implement an objective.

One of the meaningful use objectives in both Stage I and Stage II is providing clinical summaries to at least 50% of patients following an office visit (HealthIT.gov, 2015). This is meant to help reinforce health teaching and treatment plans. Other benefits of meaningful use adoption include increased patient safety by lowering healthcare costs related to duplicate services and electronic prescriptions use to help ensure safe prescribing and avert drug-drug interactions (Reilly & Poifroni, 2011). Meaningful use objectives also aim to improve care coordination and patient engagement as well as create healthier communities and populations through data collection and analysis capabilities (HealthIT.gov, 2015). However, patient understanding of health information is often limited and therefore may be a disparity of concern in underserved populations (Dhanireddy et al., 2012; Samuel, 2013).
It is important for healthcare professionals to ensure basic patient understanding of diseases, especially complex ailments, to foster adherence to care plans, and subsequently drive desired outcomes. Also, the quality of materials provided for patient reference and health literacy level are imperative to consider. The project setting currently prints a written version of the plan of care, also called a clinical summary, for the patient to take home as a reference following the office visit. This practice qualifies for electronic health record (EHR) compliance related to the meaningful use incentive stage I, objective 8, to “provide clinical summaries for patients for each office visit” (HealthIT.gov, 2014, para 3).

**Problem Statement**

Hypertension, defined as blood pressure above 140/90, is a significant problem in the U.S. health care system (Kaplan, Bakris, & Forman, 2015). Costs for hypertension management in the U.S. are estimated to be $46 billion (Centers for Disease Control and Prevention [CDC], 2015). Additionally, 1 in 3 American adults live with high blood pressure, the majority over 65 years of age (CDC, 2015). One reason for the persistent problem is patient nonadherence with the plan of care (Kaplan et al., 2015). This may be due to patient unawareness of the condition’s significance, the chronic nature of the condition, or being asymptomatic, which can result in ineffective motivation (Kaplan et al., 2015). Additionally, prescribed hypertension management regimens may be complex and confuse or overwhelm the patient leading to nonadherence (Kaplan et al., 2015). Further, patients with hypertension may decide to compromise between the provider plan and what they want to do or are capable of doing (Anthony, Valinsky, Inbar, Gabriel, & Varda, 2012).

Hypertension is also a notable problem at the chosen local, urban, underserved health center. The evidence for this includes patient failure to understand the plan of care despite efforts of the office to engage in meaningful use incentives (paper copy of the clinical summary
provided to each patient before departure from office) and multiple staff interactions aimed at educating the patient (Karen Kennedy, personal communication, May 26, 2015). Clinic staff receives numerous phone calls daily with questions regarding various aspects of the plan of care and frequently deal with nonadherence, which is often discovered indirectly through use of open ended questions (Karen Kennedy, personal communication, May 26, 2015). In addition, supplementary staff members were recently installed to help manage patients with chronic diseases such as hypertension (Megan Williams, personal communication, June 16, 2015). An online registry database was created in 2016 as an effort to better monitor patient status with chronic disease.

Uncontrolled hypertension may lead to poor outcomes (CDC, 2014). These consequences may include persistent, high blood pressure, measured by systolic/diastolic pressures over 140/90 in patients diagnosed with hypertension; nerve and organ damage; or other life-limiting complications. Hypertension management is difficult due to its multi-faceted causation. It can increase workload for phone nurses and staff members as well as contributes to increased primary care office visits, ER visits, and hospitalizations. Reimbursement from healthcare payers may also be limited due to this.

The questions guiding this project were “How meaningful is the meaningful use incentive of providing patients with a written plan of care in underserved populations?” and more directly “Will conducting a formal assessment of health literacy and clinical summaries offer guidance to address barriers related to patient understanding and adherence to the plan of care in hypertensive patients in an urban, underserved health center?” This project sought to comprehend the apparent misunderstanding of patients through use of a face-to-face health literacy assessment and formal assessment of the printed clinical summary.
Evidence Based Initiative

The Institute of Medicine (2004) and the National Institutes of Health (2016) have identified health literacy and clear communication as national healthcare goals. According to the Agency for Healthcare Research and Quality (2015), health literacy contributes to patient understanding of and adherence to the plan of care. Several patient characteristics may alert the provider or health care worker to impaired health literacy. These include frequent missed appointments, incomplete medical forms, being a poor historian, identifying medications by looking at them rather than reading the label, or nonadherence with medication, referrals and follow-ups (Davis, 2015). Patient triggers, or characteristics that may increase risk for impaired health literacy include low socioeconomic status, immigrant status, minority status, older age, and having multiple comorbid conditions (Almader-Douglas, 2013). Moreover, health literacy was considered an important aspect of patient understanding and adherence based on previous experiences of the medical director and staff.

To better understand this phenomenon, a literature search was completed. First, a search in CINAHL and PubMed was performed using the terms “patient understanding” AND “patient adherence” AND “hypertension” resulting in 13 and 2 articles, respectively. After analysis, 5 articles were used from CINAHL and none from PubMed based on the inclusion criteria of patient adherence AND hypertension. Other inclusion criteria was research articles that used adult populations and were specifically addressing nonadherence in hypertension (or hypertension and other diseases), and studies published within the last 10 years. Exclusion criteria eliminated non-research articles (which may still be used for other elements of this project), and off topic focus such as obstetrics and human immunodeficiency virus (HIV).
Patient Understanding, Adherence, and Hypertension.

After a review of the selected studies, several factors were found to possibly contribute to hypertension treatment plan nonadherence. Many factors revolve around the patient himself or herself. Personal beliefs, perceived benefits, a lack of obvious symptoms, and a misunderstanding about the chronic nature of the condition are most frequently cited (Al-Qasem, Smith, & Clifford, 2011; Chen, Tsai, & Lee, 2008; Hekler et al., 2008; Holt, Rung, Leon, Firestein, & Krousel-Wood, 2014). In general, factors that may lead to patient nonadherence with hypertension treatment include the asymptomatic nature of the disease, a misunderstanding that the condition can lead to complications, cost of medications, pharmacy access, and family/social support (Al-Qasem et al., 2011; Holt et al., 2014; Risso-Gill et al., 2015). Many of these factors can be addressed by providing patients with understandable and meaningful clinical summaries.

In a study of 227 adult patients at a community clinic, it was found that patients are more likely to adhere to treatment regimens when they conclude that doing so will have a benefit to their situation (Chen et al., 2008). Further, illness perception by patients is significantly linked to antihypertensive regimen adherence (Chen et al., 2008). According to Hekler et al. (2008), a medical belief by the patient that poor health is the cause of hypertension is correlated with lower systolic blood pressure and adherence to lifestyle factors such as low salt diet and exercise. On the other hand, the stress belief model, or belief that stress causes hypertension, is associated with adherence to stress management behaviors, but not blood pressure management (Hekler et al., 2008). This was found in a study of 102 African American patients with hypertension, over the age of 45.

Another study included 25 older adult participants and found several factors affect adherence to hypertension treatment plans (Holt et al., 2014). Individual factors such as
forgetfulness, knowledge of hypertension, inconveniences (pill-swallowing difficulty, side effects), and personal attitudes and beliefs strongly affect adherence (Holt et al., 2014). In addition, community and family factors like amount of social support, phone calls from family/friends, and support groups increase adherence (Holt et al., 2014). Finally, health care system factors (relationship/interaction with provider, adherence assessments, frequency of office visits) and environmental/policy factors (cost, pharmacy convenience) influence adherence (Holt et al., 2014).

According to a meta-analysis of 19 articles related to the extent and predictors of nonadherence with various chronic conditions including hypertension, many reasons have been identified for nonadherence including those previously mentioned as well as lack of education, social stigma, complexity of regimen, feeling well, and concerns of dependency or wanting a drug holiday (Al-Qasem et al., 2011). Also, patients with hypertension are more likely than those with diabetes to be non-adherent to treatments, possibly due to the more asymptomatic nature of high blood pressure (Al-Qasem et al., 2011). In addition, it was found in a study of four clinics (two urban, two rural) using 628 adult patients that most subsidized health clinics are overwhelmed, leading to ineffective engagement between staff, providers, and patients (Risso-Gill et al., 2015). This, complicated by the fact that many patients believe hypertension is a transient condition, not a chronic one to be continually managed, fuel patient nonadherence to treatment plans (Risso-Gill et al., 2015).

**Assessment Tools**

Next, a search of the literature provided two evidence-based tools for data collection. One was used to assess health literacy in a group of patients. The other was used to assess the understandability and strength or active voice of the written language of the clinical summary. The project tools were found upon completion of an initial literature search using Google,
CINAHL, PubMed, and the help of the university librarian. The original tool of choice for the assessment of health literacy was the Test of Functional Health Literacy in Adults-Short version (S-TOFHLA), which is the current gold standard (Wolf, Gazmararian, & Baker, 2005). For assessment of clinical summaries, the Patient Education Materials Assessment Tool, or PEMAT was chosen (Appendix A). Next, the databases CINAHL and PubMed were searched using the keywords “S-TOFHLA” and “validity” and then “PEMAT” and “validity. The initial search for health literacy resulted in the discovery of a newer, more comprehensive tool, the Expanded Brief Health Literacy Screen, or EBHLS (Appendix B) for assessing the patient’s health literacy level. This tool was created to be more concise, yet assess a broader range of health literacy facets (unlike the S-TOFHLA that only assesses reading comprehension). Further investigation using the terms “EBHLS” and “validity” and direct communication with the author of the tool resulted in the most up-to-date version called the Expanded Brief Health Literacy Screen (EBHLS). The author also gave consent to use the tool for this project (Appendix C).

The PEMAT is a tool created through grant funding of the Agency for Healthcare Research and Quality to assess the understandability and actionability of either written or audio-visual patient education materials (there are two formats). Understandability is defined by the creators as “when consumers of diverse background and varying levels of health literacy can process and explain key messages” (Shoemaker, Wolf, & Brach, 2014, p. 396). Actionability is defined as “when consumers of diverse backgrounds and varying levels of health literacy can identify what they can do based on the information presented” (Shoemaker et al., 2014, p. 396).

This tool was designed for easy utilization by lay people and healthcare workers. It was meant to be used by “health care providers, health librarians, and others tasked with providing high-quality materials to patients or consumers” (Shoemaker, Wolf, & Brach, 2013, p. 2). Also, upon study with four assessments using 47 participants total, the print version of the PEMAT
demonstrated a strong reliability (Cronbach’s alpha 0.81-0.84) and evidence of construct validity (Shoemaker et al., 2013). However, it is important to keep in mind that high quality of educational materials is not inherent in a high score. This tool was designed to assess the presentation of material, not to assess for accuracy or comprehensiveness, thus these factors should be assessed and commented on separately (Shoemaker et al., 2013).

The original version of the EBHLS, the BHLS (Brief Health Literacy Screen) was a five question tool found to have good internal consistency with a Cronbach’s alpha of 0.79 during initial study (Sand-Jecklin & Coyle, 2014). Additionally, when compared to the S-TOFHLA, the BHLS showed a modest significant correlation of 0.37 with p=.000. The authors expected this since the BHLS covers more aspects of health literacy (verbal, written) than does the S-TOFHLA (Sand-Jecklin & Coyle, 2014). This tool was also tested by a group of nurses after being expanded by the addition of a sixth open-ended question “What would help you best understand and remember the information you are getting about your health?” (Sand-Jecklin, Daniels, & Lucke-Wold, 2016). The EBHLS was found to be useful and easy to administer (Sand-Jecklin et al., 2016). Additionally, it was found that patients are not routinely screened for health literacy, but, when they are, about 20% score low (Sand-Jecklin et al., 2016).

**Conceptual Models**

**Theory/Conceptual Framework Selected to Frame/Define the Key Concepts**

Key concepts related to the phenomena include a population of underserved, low income, older, minority, and/or immigrant patients with a diagnosis of hypertension. Patient education, clinical summary distribution as a meaningful use incentive, and health literacy are also key elements. Additionally, patient self-care and adherence will be considered.
Orem’s Self-Care

Self-care is a concept explained by Dorothea Orem (1991) as “the practice of activities that individuals initiate and perform on their own behalf in maintaining life, health, and well-being” (p. 117). There are several propositions regarding self-care such as: it is affected by level of maturity, culturally-influenced goals, health knowledge, and family and social relationships (Orem, 1991). Self-care can be affected by states of disease, injury, and mental or physical malfunctioning (Orem, 1991). Additionally, “self-care requires a general knowledge of …goals and practices” (Orem, 1991, p. 120). Patient self-care agency, or the person’s ability to engage in self-care will affect self-care success (Orem, 1991). The pathway to successful self-care is complex and patients, especially vulnerable ones, may struggle to attain a good outcome. This complexity may also help to explain why a notable number of patients misunderstand and/or remain non-adherent to the plan of care.

Knowles Adult Learning

The adult learning model is important to consider as it focuses on the learning style of adults, specifically differentiated from youth. Knowles, Holton, and Swanson (2005) explain andragogy as a way of teaching adults. Importantly, this is a separate idea from pedagogy, which is the method of teaching children and is guided by the teacher taking full responsibility for what is taught/learned. Andragogy on the other hand, indicates an independence of the adult learner. This model is made of six assumptions (Knowles et al., 2005). First is the need for the learner to know why the material is important to know. The second assumption is the self-concept of the learner (autonomous, self-directing) and third is the resources and mental models based on prior experience. The fourth assumption is the learner’s readiness to learn, based on life circumstances and developmental level. The fifth relates to the context and problem focus of the reason for learning and the sixth is the intrinsic, personal reward-based motivation for
learning new information. These assumptions demonstrate the complexity of adult learning and may help to identify barriers to patient understanding of and adherence to a plan of care.

**Implementation Model to Guide Project Methodology**

The Burke-Litwin Model was developed to help guide organizational change (Burke & Litwin, 1992, Appendix D). The elements of concern in this model are how organizations function and how they are deliberately changed (Burke & Litwin, 1992). Organizational climate and culture have been determined to greatly affect the success of change (Burke & Litwin, 1992).

This model is made up of 12 main concepts or dimensions which include external environment, mission and strategy, leadership, organizational culture, structure, systems, management practices, work unit climate, task and individual skills, individual needs and values, motivation, and individual and organizational performance (Burke & Litwin, 1992). Each category consists of 1-3 questions that guide the investigator (Appendix E). All aspects of the model were addressed in the organizational assessment of the chosen clinic; pertinent model concepts to this project are discussed below.

**Mission and strategy, leadership and management practices.** At the clinic and parent company, a national health system, there is a clear mission and vision statement that drives their work. The mission is “We, [at the clinic and health system], serve together in the spirit of the Gospel as a compassionate and healing presence within our communities. It also implies “a special concern for persons who are poor and disadvantaged” (Mercyhealth.org, n.d., para. 1). The vision of the health organization is “We will become the recognized leader in improving the health of our communities and each person we serve. We will be known as the most trusted health partner for life” (Mercyhealth.org, n.d., para. 2).
Further, the philosophy at the clinic is “We share [the organization’s] commitment to provide health care for all persons, regardless of their ability to pay. We believe that no one should go without needed health care because they cannot afford it. We are committed to providing the highest standard of health care with hospitality, respect, and compassion” (Mercyhealthsaintmarys.com, n.d., para. 1). These sentiments support a culture of caring and compassion for people, including those that are financially and otherwise challenged.

The health organization supports the core values of reverence, commitment to those who are poor, justice, stewardship, and integrity (Mercyhealth.org, para. 3). These guiding principles indicate that this organization is committed to serving its patients. Also the strategic placement of the clinic in a low-income, disadvantaged neighborhood supports its mission and values as a community ministry benefit (Rocio Sanchez, personal communication, November 2, 2015). Furthermore, the staff and providers at the clinic choose to work there because they have an interest and passion for the underserved population and support the mission of the company (Rocio Sanchez, personal communication, November 2, 2015).

At the clinic, the medical director is the leader of the organization as well as the three other underserved, or “community benefit” clinics. The director also acts as lead physician and is responsible for the providers (a combination of physicians, nurse practitioners, and physician assistants) and completes their annual evaluations. The director’s role is to support efficient and effective performance, both in terms of operations and fiscal responsibility. Collaboration between the director and the business manager is expected as well as fostering physician and advanced practice provider development and engagement. The current medical director/lead physician is open to input from staff and providers and acts in a provider role in addition to leading, which offers multiple perspectives within the organization.
The business manager of the office is the leader of non-provider staff and is in charge of annual evaluations. The staff includes a Clinical Nurse Leader (CNL), case manager, community health worker, client services coordinator, registered nurses (RNs), licensed practical nurses (LPNs), medical assistants (MAs), and front office staff. The business manager leads in a way that is supportive of staff. For example, while a front office worker was on medical leave, the manager worked in that role in addition to regular managerial responsibilities. The manager also has an “open door policy” that invites any staff members to come speak about problems or concerns. In addition, the manager tries to accentuate staff strengths and create an action plan for struggling staff.

These leaders work to support both the mission of the larger health care organization and the clinic staff. An effort is made to support employees to their “full potential and capacity” (Rocio Sanchez, personal communication, November 2, 2015). There is also a concern for eliminating waste and the CNL has taken ownership of organizing and streamlining projects at the office using Six Sigma and LEAN models. Additionally, leadership has heard and acted on the staff’s concern for work overload by getting more positions approved to hire more staff. They also took the time to apply for and receive the Call to Care grant, which provided additional staff and services including the CNL, Doctor of Nursing Practice (DNP), community health worker, and case manager.

**Organizational culture and work unit climate.** At the clinic, there is a general theme of teamwork. There is also a shared desire to provide care for underserved patients. Providers and staff value the relationships that they make with patients. However, as with any group of people, there are occasional personality and role conflicts among employees. Although nearly all directly observed interactions have been positive.
**External environment, structure and systems.** One of the key external drivers at the clinic is the current state of the health care system in the United States. There have been federal changes to insurance coverage recently through the Affordable Care Act and, in some states, Medicaid (HealthIT.gov, 2015). Also, newer quality measures for providers and health organizations have been implemented through the Centers for Medicare and Medicaid Services (CMS). Additionally, incentivized changes in documentation and data management have been employed through meaningful use of the EHR, another CMS initiative.

This clinic employs seven providers (four physicians, two nurse practitioners, one physician assistant), four RNs (one lead phone nurse, one CNL, one case manager, one business manager), three LPNs, four MAs, one community health worker (helps patients with non-health needs such as housing and job resources), one client services coordinator (helps patients with financial assistance such as Medicaid enrollment), one administrative assistant, and two front desk workers. In addition, many staff members are bilingual, helping to communicate with Spanish speaking patients. The office also has a translator service available by phone for non-bilingual staff and languages other than Spanish. Most of the office-specific decisions are made by the medical director and/or the business manager after getting input from providers and staff. Organization-wide decisions are made by upper management and implemented and enforced by the office leadership. Additionally, monthly provider meetings, staff meetings, and daily huddles are held to enhance communication.

At the clinic, each employee receives an annual evaluation and monetary raise based on it. If an employee is found to be struggling in his or her role, it is addressed throughout the year and is generally not a surprise at the evaluation (Rocio Sanchez, personal communication, November 2, 2015). It is also a goal of leadership to ensure safe reporting of mistakes or near
misses by promoting a “just culture” (Rocio Sanchez, personal communication, November 2, 2015).

**Task and individual skills, individual and organizational performance.** A prospective employee first applies for the position through the online job application process. Then the prospective employee is interviewed by an organizational human resources recruiter. Next, possible matches are sent on to the hiring manager to determine whether a further interview is desired. The prospective employee may meet with the manager alone, or have a separate interview with a few future coworkers as well. Upon hire, the individual must complete an organizational orientation, including general competencies for the organization, followed by more specific training at the clinic.

The leaders receive regular benchmark reports from the quality department. These quality measures consist of disease management such as diabetes, asthma, coronary artery disease, and hypertension, among others. Patient satisfaction is also an indicator of quality. In addition, a quality component is included in each employee’s annual evaluation and linked to provider compensation.

**Individual needs, values, and motivation.** Staff generally enjoys their work and work environment (Rocio Sanchez, personal communication, November 2, 2015). They have a strong drive to work in the underserved community and get along well, overall, as a team. Staff is often sad if they are mandated a low census day because they miss their work “family” (Rocio Sanchez, personal communication, November 2, 2015). The medical director and business manager also work hard to provide positive feedback to providers and staff as well as “regular thank you’s” (Rocio Sanchez, personal communication, November 2, 2015). The biggest motivator for staff appears to be the culture in the office and overall camaraderie.
Need and Feasibility Assessment of the Organization/Population

The problem of patient misunderstanding of the plan of care has been a concern for the medical director of the clinic as well as other providers and staff. This problem affects all staff members due to additional phone calls, extra appointments, potentially unnecessary urgent care or ER visits, and time spent investigating previous office notes, reports, and information to answer questions. However, according to the business manager, staff at the clinic is invested in this particular population and therefore have an interest in any project that will aim to enhance care and improve outcomes.

Additionally, as a faith-based organization, the mission to provide care regardless of ability to pay and improve the health of communities offers support to this project. However, one barrier to success of this project is the fact that a new electronic health record was introduced in January 2016. Due to this, it is possible that staff may still be learning new technology and unable to incorporate other changes. Also, there are other quality improvement measures constantly bombarding the staff and providers, potentially creating fatigue related to practice change. However, since this project was focused more on assessment and evaluation with the intent of providing baseline data, guidance, and recommendations, it is possible that implementation of recommendations will be successful through future DNP students or clinic staff.

Project Implementation

Purpose of Project with Objectives

This project was directed by two guiding questions. The first being “How meaningful is the meaningful use incentive of providing patients with a written plan of care in underserved populations?” Secondly, “Will conducting a formal assessment of health literacy and clinical
summaries offer guidance to address barriers related to patient understanding and adherence to the plan of care in hypertensive patients in an urban, underserved health center?"

The first objective was to assess the health literacy level of a sample of adult, English-speaking patients with a diagnosis of hypertension. These patients receive primary care services at the clinic and were asked the questions on the EBHLS while the interviewer recorded the answers. The second was to assess the adequacy of printed clinical summaries for this same group of patients by looking at an image of the printed clinical summary in the electronic record after the patient left the office. The DNP student then completed the PEMAT on each clinical summary as objectively as possible. The third was to develop a plan to optimize current processes and enhance patient understanding of and subsequent adherence to plans of care. The fourth objective was to inform staff and providers at the clinic as well as the affiliated hospital’s quality team about health literacy status and its impact on patient understanding of the plan of care. Finally, the fifth objective is to build a plan for sustainability either through clinic staff or a future DNP student.

**Type of Project**

The main characteristics of quality improvement projects are to focus on systems and processes, patients, team membership, and data usage (Health Resources and Services Administration [HRSA], 2011). The focus of this project was assessing health literacy level, clinical summary adequacy, and optimizing current practice and informatics capabilities. This project, therefore, follows a plan that is “systematic and continuous” with the goal of leading to “measureable improvement” within the clinical system (HRSA, 2011, para. 2). This designation was important to help drive proper implementation and mindset. The main reason for this designation was the plan to use previously validated tools for data collection rather than for purposes of creating new knowledge or testing theories/tools as research does. This project was
deemed quality improvement by both the Grand Valley State University Human Research Review Committee (HRRC, Appendix F) and the hospital Institutional Review Board (IRB, Appendix G).

**Setting and Resources Utilized**

The setting for this project is an urban health center in a Midwestern city whose primary focus is providing healthcare for underserved populations. This primary care office is part of a larger local health system which, in turn, is a member of a national health organization. This project required face-to-face health literacy assessments, access to electronic health record to view patient clinical summaries, and coordination with the provider office schedule. Cooperation from staff was also necessary and utilized. Additionally, a private space was needed to conduct the private and anonymous interviews. Finally, funds were obtained from an internal Kirkhof College of Nursing grant to purchase bus passes for participation incentive.

**Participants and Recruitment Strategies**

This convenience sample of patients was adult, English-speaking patients with a diagnosis of hypertension, cognitively intact, and able to answer questions verbally. The recruitment of participants was initially conducted by the medical assistant who checked patients out after appointments using a script (Appendix H). After a four hour shift at the clinic resulted in only two patients, the recruiting strategy was modified by using the rooming (intake) medical assistant for recruiting instead. This tactic resulted in more successful participation. Originally, when a patient agreed to participate, the DNP student greeted him or her and escorted him or her to a private office down the hall, closing the door for privacy. However, when the recruitment strategy was changed, the private setting also changed. The DNP student entered the exam room between when the patient was roomed (checked in) by the medical assistant and seen by the
provider. The student also followed a script (Appendix I) for this interaction and also used a self-made tool to collect demographic data (Appendix J).

The PEMAT was completed after the patient’s appointment using computer access to the EHR. All data were collected on paper and kept in a locked file box in the medical director’s office. In addition, the student provided each patient with 2 all-day bus passes for participation at the conclusion of the assessment. However, a few patients declined the gift and asked for them to be used on someone else that needed them. Additionally, after one day of assessments, the case manager approached the DNP student and offered to complete four of the EBHLS tools on four patients she was seeing and she knew needed bus passes. This was allowed.

**Measurement: Sources of Data and Tools**

Data for the health literacy assessments of patients was collected using the EBHLS which includes six questions, five of which are rated on a 1 to 5 scale and the sixth is open-ended. A score of 3 or below on an individual item indicates an area of attention/assistance, while a total score of less than 19 indicates probable health literacy limitation (Sand-Jecklin et al., 2016). This information was collected directly from the face-to-face patient interview.

Additionally, the printed clinical summary was accessed on the computer and assessed using the PEMAT (intended for use by healthcare workers) by the DNP student after the patient’s office visit note was complete. This was done to expedite interviews and allow for maximized patient participation. Each item on the PEMAT is scored by an agree (1) or disagree (0). When completed, the number of “1’s” are divided by the total possible points to determine a percentage. There are two parts to the tool and therefore two scores, one for understandability and the other for actionability.

Additionally, the demographic tool (Appendix J) was created by the DNP student. Items included age (specific number), race (Caucasian, African American, Hispanic, Asian, Other,
Mixed race), education level (less than high school, some high school, graduated high school or GED, some college/trade school, graduated college/trade school). The final measure was the open-ended question “What does hypertension mean to you?” to elicit the patient’s definition of the word. This measure was important as the medical director has heard many definitions, some of which are not even related to high blood pressure.

**Steps for Implementation of Project, including Timeline**

The defense of the project proposal occurred on April 20, 2016 with subsequent submission to the GVSU HRRC and hospital IRB by April 22 and May 2, respectively. Following HRRC and IRB quality improvement designation, data collection began on May 11 and concluded May 17 yielding a total of 32 participants. Data analysis and writing of the final report began May 22 and concluded after revisions from the advisory team completed August 14, 2016. A public defense will occurred on July 27, 2016 to disseminate results to a public forum at the university. Table 1 provides a visual timeline to support this plan.

**Table 1**

*Project timeline*

<table>
<thead>
<tr>
<th>Completion Date</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>April 20</td>
<td>Proposal defense</td>
</tr>
<tr>
<td>April 22</td>
<td>GVSU HRRC submission</td>
</tr>
<tr>
<td>May 2</td>
<td>IRB submission to hospital</td>
</tr>
<tr>
<td>May 11</td>
<td>Begin data collection</td>
</tr>
<tr>
<td>May 17</td>
<td>Conclude data collection</td>
</tr>
<tr>
<td>June 22</td>
<td>Conclude data entry, analysis, and advisory team edits</td>
</tr>
<tr>
<td>July 27</td>
<td>Disseminate findings</td>
</tr>
<tr>
<td>August 14</td>
<td>Edits complete, submit to ScholarWorks</td>
</tr>
</tbody>
</table>
**Budget Reconciliation**

A grant was funded through Kirkhof College of Nursing’s Centers of Distinction. This grant supplied funds for the purchase of 60 all-day bus tickets ($210), 2 per participant, as an offer of gratitude for completing the health literacy assessment and allowing access to the clinical summary. No other funding was required.

**Ethics and Human Subjects Protection**

This project was in a setting for underserved patients, a potentially vulnerable population. The risks of involvement were identified as frustration with assessment questions or lack of complete understanding of the project. Before participation, patients were given an overview of the project, and an opportunity to ask questions and either accept or decline involvement without penalty. Verbal consent was obtained by the MA before participation. This procedure was developed to ensure voluntary participation in the project. Project data were kept anonymous, confidential, and secure throughout this process.

**Project Outcomes (Results)**

The final project resulted in participation of 32 patients. No missing data were identified. The data, which consisted of individual scores and total scores for both the EBHLS and PEMAT were entered into a Microsoft Excel spreadsheet and then transferred to SPSS for analysis. Demographic information was also entered.

The primary race of this convenience sample was African American, education level was high school graduation or Graduate Education Development/GED, and mean age was 55 years old. Table 2 displays the participant demographics collected including age, race, and education levels by percent. Age was relatively representative of the clinic primary demographic. Although the clinic has a primary age range of 20-30 years old (23%), its second and third most common age ranges are 50-60 years old (17%) and 40-50 years old (15%) which is similar to the
Table 2.

Sample Characteristics

<table>
<thead>
<tr>
<th>Demographic</th>
<th>Frequency</th>
<th>Percent</th>
<th>Range</th>
<th>Median</th>
<th>Mean</th>
<th>Mode</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>24-85</td>
<td>56</td>
<td>55</td>
<td>49</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>3</td>
<td>9.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>24</td>
<td>75</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>2</td>
<td>6.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mixed race</td>
<td>3</td>
<td>9.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Education Level</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some high school</td>
<td>7</td>
<td>21.9</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduated high school/GED</td>
<td>14</td>
<td>43.8</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Some college/trade school</td>
<td>9</td>
<td>28.1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Graduated college/trade school</td>
<td>2</td>
<td>6.3</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

modal age of 49 years old and median of 56 years old of participants (Megan Williams, personal communication, May 24, 2016). The most common race of patients at the clinic is African American (67%) and the participant representation of 75% is similar to this (Megan Williams, personal communication, May 24, 2016). The participant education level may or may not be representative of probable education level of clinic patients as a whole as this was an assumption based on local public high school graduation rates because the clinic does not keep this specific information.
Reliability was calculated in this sample for both of the tools used. The first five questions of the EBHLS, which were scored on a 5-point scale, were found to be reliable for this group with a Cronbach’s alpha 0.8 which is similar to published reliability information. The PEMAT, on the other hand was found to have moderate reliability for each section (understandability and actionability) individually (Cronbach’s alpha 0.65, 0.64 respectively) which is lower than published data. The total PEMAT scores (understandability and actionability together) for this sample was found to have a Cronbach’s alpha 0.88.

The scores of the EBHLS were higher than expected with the majority of scores (n=30) being high levels of health literacy, or a score of 20-25 points. Scores can range from 5 to 25, with a score of less than 19 indicating a probable limitation in patient literacy (Sand-Jecklin et al., 2016). Although scores ranged from 12 to 25, the mode was 24 with 9 participants (28%) achieving this score. The vast majority of patients had high health literacy scores with 93%, or 30 participants, scoring 19 or above. Interestingly, three of the four lowest scores were health literacy assessments completed by the case manager.

The PEMAT consists of two sections, one that assesses understandability and the other actionability of the education materials, therefore the scores were calculated separately. The understandability portion (PEMAT-U) scores ranged from 27% to 73% understandable. The modal score for understandability of clinical summaries was 55%, which represented 22 cases or 69% of the total clinical summaries assessed. The actionability portion (PEMAT-A) scores ranged from 0-100% with the mode being 60% or 22 cases (69%).

Table 3 displays the answer frequencies for EBHLS scores. This illustrates that a majority of patients scored moderate to high. In addition, the few “often” and “sometimes”
Table 3

*EBHLS answer frequencies (n=32)*

<table>
<thead>
<tr>
<th>Item</th>
<th>(1) not at all confident</th>
<th>(2) a little confident</th>
<th>(3) somewhat confident</th>
<th>(4) quite confident</th>
<th>(5) extremely confident</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. If you need to go to the doctor, clinic, or hospital, how confident are you in filling out medical forms by yourself?</td>
<td>1</td>
<td>1</td>
<td>12</td>
<td>18</td>
<td>1</td>
</tr>
<tr>
<td>2. How often do you have someone (family member or staff at the clinic or hospital) help you to read health or medical forms?</td>
<td>2</td>
<td>15</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. How often do you have problems learning about your health because of trouble understanding written health information?</td>
<td>1</td>
<td>15</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. How often do you have trouble understanding what your doctor, nurse, or pharmacist (druggist) tells you about your health or about treatments?</td>
<td>3</td>
<td>10</td>
<td>19</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. How often do you have trouble remembering instructions from the doctor, nurse, or pharmacist (druggist) after you get home?</td>
<td>1</td>
<td>2</td>
<td>15</td>
<td>14</td>
<td></td>
</tr>
</tbody>
</table>
responses may offer information about which areas of health literacy are most challenging for some. When addressing health literacy barriers, it may be beneficial to start by using easy to understand medical forms and having help readily available for patients with deficits. Also, ensuring patient understanding of health material and providing helpful resources for patients to use after the appointment to help remember information would be helpful for patients. Although this self-rating of patient health literacy suggests an element of self confidence, this assessment tool did not test actual literacy skills.

Next, the sixth question, which was open-ended asked “What would help you best understand and remember the information you are getting about your health?” These answers varied from “nothing” to “I don’t know” to the most common “no changes needed” and “Ask questions when needed.” The primary answer to this question by a majority of patients (n=23) was simply the ability to ask the provider questions when they have them. The rest of the patients (n=9) stated that current health information exchange practices are sufficient or need no improvement. This self rating of patients’ ability to understand health materials indicates a high level of confidence, if not actual literacy.

Table 4 displays results for the understandability portion of the PEMAT. Strengths and weaknesses appeared through this assessment. Current strengths include the document making its purpose evident, using informative headers and visual cues (such as font changes) to break information into sections. The current clinical summary does not expect the user to perform any calculations. Weaknesses of the current clinical summary appear to include a lack of simple visual aids to reinforce learning, no chart, graph, or table use, and a lack of primarily common, everyday language. The material also did not often use an active voice for treatment plan instructions and may include extraneous information that distracts from its purpose. In
**Table 4**

*PEMAT Understandability Frequencies (n=32)*

<table>
<thead>
<tr>
<th>Item</th>
<th>Agree n(%)</th>
<th>Disagree n(%)</th>
<th>NA n(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The material makes its purpose completely evident</td>
<td>29(90.6)</td>
<td>3(9.4)</td>
<td></td>
</tr>
<tr>
<td>2. The material does not include information or content that distracts from its purpose.</td>
<td>2(6.3)</td>
<td>30(93.8)</td>
<td></td>
</tr>
<tr>
<td>3. The material uses common, everyday language.</td>
<td>1(3.1)</td>
<td>31(96.9)</td>
<td></td>
</tr>
<tr>
<td>4. Medical terms are used only to familiarize audience with the terms. When used, medical terms are defined.</td>
<td></td>
<td>32(100)</td>
<td></td>
</tr>
<tr>
<td>5. The material used the active voice.</td>
<td>4(12.5)</td>
<td>28(87.5)</td>
<td></td>
</tr>
<tr>
<td>6. Numbers appearing in the material are clear and easy to understand.</td>
<td>1(3.1)</td>
<td>3(9.4)</td>
<td>28(87.5)</td>
</tr>
<tr>
<td>7. The material does not expect the user to perform calculations.</td>
<td>31(96.9)</td>
<td>1(3.1)</td>
<td></td>
</tr>
<tr>
<td>8. The material breaks or “chunks” information into short sections.</td>
<td>32(100)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. The material’s sections have informative headers.</td>
<td>30(93.8)</td>
<td>2(6.3)</td>
<td></td>
</tr>
<tr>
<td>10. The material presents information in a logical sequence.</td>
<td>7(21.9)</td>
<td>25(78.1)</td>
<td></td>
</tr>
<tr>
<td>11. The material provides a summary.</td>
<td>1(3.1)</td>
<td>23(71.9)</td>
<td>8(25)</td>
</tr>
<tr>
<td>12. The material uses visual cues (e.g., arrows, boxes, bullets, bold, larger font, highlighting) to draw attention to key points.</td>
<td>32(100)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. The material uses visual aids whenever they could make content more easily understood (e.g., illustration of healthy portion size).</td>
<td>32(100)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
14. The material’s visual aids reinforce rather than distract from the content.

15. The material’s visual aids have clear titles or captions.

16. The material uses illustrations and photographs that are clear and uncluttered.

17. The material uses simple tables with short and clear row and column headings.

addition, it may not be graphically organized in the most logical sequence and often did not include a summary. Numbers were not generally included in the instructions.

Table 5 displays the results for the actionability portion of the PEMAT. A majority of the clinical summaries included at least one specific action for the patient to take and addressed the patient directly. The information was, more often than not, broken down into manageable, explicit steps or actions. However, the clinical summaries did not typically include tangible tools (e.g., menu planners, checklists) or visual aids for clarification. Since the clinical summary generally did not contain calculations or charts, graphs, or tables, it was not applicable to score these items as clear and easily understood.

Correlations were run between the EBHLS and both the PEMAT-U and PEMAT-A. This was to determine any possible relationship among these scores for this group. Neither Pearson’s nor Spearman’s showed any significant correlation. Pearson’s and Spearman’s for EBHLS and PEMAT-U were .051 and .021 respectively. The EBHLS and PEMAT-A showed a Pearson’s and Spearman’s of .102 and .075 respectively. These indicate no relationship between the assessment of patient level of health literacy in this project and PEMAT scores.

Finally, answers to the question “What does hypertension mean to you?” were compiled. This question was included in the assessment because the medical director has found many patients that have not understood the term and used words not related to the condition to
Table 5

**PEMAT Actionability frequencies (n=32)**

<table>
<thead>
<tr>
<th>Item</th>
<th>Agree n(%)</th>
<th>Disagree n(%)</th>
<th>NA n(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. The material clearly identifies at least one action the user can take.</td>
<td>30(93.8)</td>
<td>2(6.3)</td>
<td></td>
</tr>
<tr>
<td>2. The material addresses the user directly when describing actions.</td>
<td>27(84.4)</td>
<td>5(15.6)</td>
<td></td>
</tr>
<tr>
<td>3. The material breaks down any action into manageable, explicit steps.</td>
<td>25(78.1)</td>
<td>6(18.8)</td>
<td>1(3.1)</td>
</tr>
<tr>
<td>4. The material provides a tangible tool (e.g., menu planners, checklists) whenever it could help the user take action.</td>
<td>1(3.1)</td>
<td>30(93.8)</td>
<td>1(3.1)</td>
</tr>
<tr>
<td>5. The material provides simple instructions or example of how to perform calculations</td>
<td></td>
<td></td>
<td>32(100)</td>
</tr>
<tr>
<td>6. The material explains how to use the charts, graphs, tables, or diagrams to take actions.</td>
<td></td>
<td></td>
<td>32(100)</td>
</tr>
<tr>
<td>7. The material uses visual aids whenever they could make it easier to act on the instructions.</td>
<td>30(93.8)</td>
<td>2(6.3)</td>
<td></td>
</tr>
</tbody>
</table>

describe it. Interestingly, most (n=23) of the participants knew both precisely and quickly that hypertension is related to blood pressure. Other definitions supplied by patients included increased pulse (n=2), hyperactive (n=1), heart attack (n=1), stress (n=2), hydrated (n=1), anxiety (n=1), and increased blood sugar (n=1).

**Implications for Practice Discussion**

The first guiding question for this project asked about the meaningfulness of the written plans for this patient population, as a part of meaningful use incentives. The clinical summary was found to be somewhat meaningful for patient use, but could be improved. Based on the
PEMAT assessment, some recommendations are listed below. The second guiding question, formally assessing health literacy and clinical summaries, yielded recommendations as well.

These results may indicate that although the EBHLS showed high self-rated scores of health literacy, it may not be the most appropriate tool for this population or setting because of its lack of actual literacy assessment. It may, however, be more successful and insightful in conjunction with another tool such as the Test of Functional Health Literacy, Short Version (S-TOFHLA) which was originally considered and does assess reading specifically. The PEMAT may be useful for assessing printed clinical summaries. The chosen tools do appear to be reliable for this convenience sample.

The discovery of EBHLS scores higher than anticipated may indicate the biggest barrier to patient understanding and adherence is not health literacy or it is at least not perceived by patients as a barrier. It may simply be an indication of self report being a less valid method of assessing health literacy. Although this finding is not a specified outcome measure, it is interesting to consider. The results of the EBHLS do suggest some areas for this clinic to improve in patient understanding and adherence. These include efforts by healthcare workers to ensure that health forms are easy to read (large, clear font), understand (written to a 6th grade or less reading level), and fill out (obvious spaces and ample room to write) are important (Safeer & Keenan, 2005). In the future, it may be beneficial to complete another health literacy assessment using the EBHLS together with the S-TOFHLA or even the full version (TOFHLA).

Other recommendations for improvement include using information gained through the PEMAT to improve the clinical summary appearance and use. Provider education regarding use of an active voice in care plans rather than creating lists can help. Consciously creating breaks in typed provider notes and including a summary if possible may also increase patient understanding. Creating a way to include visual aids either to the clinical summary itself or
printing in addition may also help improve patient understanding and subsequent adherence. It is also important for the provider to use an active voice when writing instructions and discharge information for the patient. An example of this would be instead of writing “This medication should be taken with water,” the provider would write “You need to take this medication with a full glass of water.” An example of a revised clinical summary for hypertension based on the project findings is supplied in Appendix K.

Further assessment of a larger group of patients may provide more detailed information to drive change. Eventually, it may be advantageous to include a health literacy assessment in each patient’s initial visit to the clinic. It will first be necessary to determine the most appropriate tool to use. Another improvement may be to provide health literacy classes for those patients that may have difficulty. This is currently under consideration by the community health worker.

It is also important to keep in mind the guiding theories and main concepts for this project. According to Orem’s self care model, a patient must be capable of engaging in self care tasks to be successful. Also, a person’s actions will be dependent on knowledge of health problems and are influenced by socio-cultural factors. Here, patients tended to rate themselves highly on the EBHLS, which may indicate a good self concept, but may or may not directly correlate with sufficient self-care agency.

The self-care agency concept from Orem’s theory may coincide with the self-concept principle of Knowles Adult Learning Theory. Patients must understand the reasons behind learning and have the capacity and focus to learn the information. They must be ready to learn and feel that the information is pertinent and worthwhile. These characteristics were also found in the hypertension and patient adherence literature, which indicates the need for relevance. This can be helpful for providers and other health care workers to consider when aiming to
successfully establish and support patient understanding and adherence to health maintenance and treatment plans.

Continuation of the Call to Care grant will also be valuable in keeping additional staff at the clinic to help manage patients that require more comprehensive support. Finally, the results of this project may inspire and instruct a future DNP student to continue health literacy inquiry and implementation of evidence-based support to improve both patient understanding and adherence and clinical summaries.

Summary of Important Successes/Difficulties Encountered

Successes in this project include having a mentor who is dedicated to this topic and a site in need of the assessment. Additionally, having supportive guidance from the graduate faculty and university librarian at Grand Valley State University has been helpful. Successfully applying for and being awarded a grant to help cover expenses is also a positive. In terms of difficulties, there were so many possible ways to look at the issues around health literacy and this created multiple dilemmas early in the planning process. Several viable project foci were considered. This was viewed as both an opportunity and challenge.

Project Strengths/Weaknesses/Sustainability

This project does have strength in that it utilized assessment tools that have been found to be valid and reliable. Also, a grant was approved to allow the DNP student to offer an incentive for participation. A comprehensive and formal organization assessment completed prior to planning and implementation provided guidance as well. Finally, data analysis offered suggestions to the organization for improvement related to further study of health literacy, clinical summary utilization, health form use, and patient understanding and adherence to hypertension management plans.
In terms of weakness, this project was, at times, overwhelming and difficult to navigate. Also, this is the DNP student’s first attempt at leading a quality improvement project which may have contributed to a slow-moving process. Coordinating multiple people’s busy schedules was another challenge. Additionally, implementation of this project caused a minor disruption in the regular flow of patients and providers. Finally, although the EBHLS rated patient self appraisal of health literacy level, it did not assess actual literacy skills and therefore may not have been the most appropriate choice to direct recommendations for change.

**Relation to Other Evidence/Healthcare Trends**

Although the provider is charged with giving health and treatment information to the patient, the patient must then be able to understand, remember, and act on the information (Davis, 2014). Evidence of low health literacy, apart from formal assessment with a valid and reliable tool, include frequently missed appointments, incomplete registration forms, medication nonadherence, and identifying pills by looking at them and not reading the label (Davis, 2014). A patient that is unable to articulate the purpose or accurate dosage of a medication, very seldom asks questions, is a poor historian, or is non-adherent with referrals and follow-ups may struggle with low health literacy (Davis, 2014). Provider and staff education of these trends may be useful in identifying patients with health literacy deficits in lieu of formal assessment.

Process change related to improving patient understanding of the plan can help. One way is by making the patient an active member of the team (Hummel & Evans, 2012). This can encourage the patient to ask questions when unsure about a treatment. Another change is to have the provider be the person to go over the clinical summary with the patient (Hummel & Evans, 2012). This can, again, help encourage the patient to ask questions in the moment, in a safe environment, to the provider directly, as requested by some participants. However, this would be a major practice change at the clinic and may not be viable at this time.
Limitations

This project does have some limitations that must be acknowledged. First, this project used a convenience sample without an element of random sampling, and these results may not be generalizable even to the population at the clinic used for this project. The small size of the sample is also a limitation.

In addition, the unpredicted higher health literacy scores may be related to response bias since this was the first meeting between patient and DNP student. Patients may have responded in a way to appear more competent; the student may have asked the questions in a gentle manner. The fact that the case manager’s scores were lower (three out of four were the lowest scores) could also be due to the fact that patients with multiple chronic conditions and impaired health literacy skills frequently get referred for one on one appointments. Her knowledge of the patients may have affected her interview method. No review of her interview methods or inter-rater reliability was done prior to accepting her offer to assess four patients.

The fact the EBHLS did not directly assess literacy skills may also be a limitation in this project. The PEMAT, on the other hand, did assess what it was meant to. However, even though it is designed to be used by health care workers, scoring by the DNP student and not the patient may have influenced results through personal bias.

Due to unforeseen circumstances, the primary physician was out of town. As a result, patients assigned to two alternative providers (one physician, one physician assistant) were used. These assistants and participants may not have entirely understood the goals of the project. In addition, it will be difficult for the DNP student to personally ensure the sustainability of this project following graduation, although an effort will be made through dissemination of results to the clinic.
Reflection on Enactment of DNP Essentials Competencies

The goal of the DNP scholarly project is to enhance the student’s knowledge and capacity to execute the eight DNP essentials (American Association of Colleges of Nursing [AACN], 2008) and act in the various roles of the DNP (Chism, 2016). This work facilitates thorough understanding of essentials and role development. Often, several of the DNP roles and essentials materialize through project work.

The role of DNP as a scholar incorporates aspects of theory and research (Chism, 2016). Through this project the role of scholar was expanded through completion of a methodical literature review and planning of the evidence-based project. This also encompassed the DNP essentials of scientific underpinnings (Essential I) and clinical scholarship (Essential III).

The role of the DNP as expert clinician involves both clinical knowledge and actively participating in and supporting evidence-based practice initiatives (Chism, 2016). Through development of this role the DNP essentials of population health (Essential VII) and advanced practice nursing (Essential VIII) were employed. This project focused on a specific population of patients and relied on advanced practice nursing knowledge of hypertension, its pathophysiology, diagnosis, and treatment. This role also entails the principle of interprofessional collaboration which demonstrated the DNP essential of the same name (Essential VI) and was employed throughout the project. This includes continuous collaboration with the lead physician/medical director, contact with the information technology department, and the professional interaction with staff and providers that engaged in data collection.

The DNP role of information specialist was fostered through the interaction with the information technology department in terms of obtaining electronic health record access to perform the PEMAT. The DNP student also had the opportunity to observe and interact at a
training session for the newly installed electronic health record. This enacted the DNP essential of information technology and systems (Essential IV).

Health policy advocate is another DNP role. This role entails understanding of health policy and initiative to influence positive and successful change (Chism, 2016). The DNP essential of health care policy for advocacy (Essential V) is also incorporated into this role. This area was moderately included in this project as the meaningful use incentives of the federal government were explored in terms of how they were implemented within this clinic. As a result, practice procedures may be changed to more fully impact patient outcomes.

Finally, the role of the DNP as an educator was included in this project. The DNP student incorporated the essential of healthcare and systems leadership (Essential II) with dissemination of results. The DNP student also spoke of the project with peers and other scholars. These experiences may support a future role in education in a university setting.

Dissemination of Outcomes

The results of this project were disseminated primarily through the public oral project defense. Secondarily, the results was communicated to key stakeholders at the clinic. The written work will be available through ScholarWorks for viewing by GVSU students, faculty, and others. In addition, the results may be prepared for submission to publication in a nursing, medical, or other health journal. The potential also exists for poster or podium presentation at a local or national annual conference such as Michigan Council of Nurse Practitioners or the Doctors of Nursing Practice Conference.
References


*Health literacy universal precautions toolkit* (2nd Ed.). Retrieved from

http://nnlm.gov/outreach/consumer/hlthlit.html


http://www.cdc.gov/bloodpressure/facts.htm


## Appendix A

### Patient Education Material Assessment Tool

#### Understandability

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item</th>
<th>Response Options</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Topic: <strong>Content</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>The material makes its purpose completely evident.</td>
<td>Disagree=0, Agree=1</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>The material does not include information or content that distracts from its purpose.</td>
<td>Disagree=0, Agree=1</td>
<td></td>
</tr>
<tr>
<td>Topic: <strong>Word Choice &amp; Style</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>The material uses common, everyday language.</td>
<td>Disagree=0, Agree=1</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Medical terms are used only to familiarize audience with the terms. When used, medical terms are defined.</td>
<td>Disagree=0, Agree=1</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>The material uses the active voice.</td>
<td>Disagree=0, Agree=1</td>
<td></td>
</tr>
<tr>
<td>Topic: <strong>Use of Numbers</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Numbers appearing in the material are clear and easy to understand.</td>
<td>Disagree=0, Agree=1, No numbers=N/A</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>The material does not expect the user to perform calculations.</td>
<td>Disagree=0, Agree=1</td>
<td></td>
</tr>
</tbody>
</table>
### Topic: **Organization**

<table>
<thead>
<tr>
<th>8</th>
<th>The material breaks or &quot;chunks&quot; information into short sections.</th>
<th>Disagree=0, Agree=1, Very short material=N/A</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>The material's sections have informative headers.</td>
<td>Disagree=0, Agree=1, Very short material=N/A</td>
</tr>
<tr>
<td>10</td>
<td>The material presents information in a logical sequence.</td>
<td>Disagree=0, Agree=1</td>
</tr>
<tr>
<td>11</td>
<td>The material provides a summary.</td>
<td>Disagree=0, Agree=1, Very short material=N/A</td>
</tr>
</tbody>
</table>

### Topic: **Layout & Design**

| 12 | The material uses visual cues (e.g., arrows, boxes, bullets, bold, larger font, highlighting) to draw attention to key points. | Disagree=0, Agree=1, Video=N/A |

### Topic: **Use of Visual Aids**

<p>| 15 | The material uses visual aids whenever they could make content more easily understood (e.g., illustration of healthy portion size). | Disagree=0, Agree=1 |
| 16 | The material's visual aids reinforce rather than distract from the content. | Disagree=0, Agree=1, No visual aids=N/A |</p>
<table>
<thead>
<tr>
<th>Item #</th>
<th>Item</th>
<th>Response Options</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>17</td>
<td>The material’s visual aids have clear titles or captions.</td>
<td>Disagree=0,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Agree=1,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No visual aids=N/A</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>The material uses illustrations and photographs that are clear and</td>
<td>Disagree=0,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>uncluttered.</td>
<td>Agree=1,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No visual aids=N/A</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>The material uses simple tables with short and clear row and column</td>
<td>Disagree=0,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>headings.</td>
<td>Agree=1,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>No tables=N/A</td>
<td></td>
</tr>
</tbody>
</table>

**Total Points:** ____________

**Total Possible Points:** ____________

**Understandability Score (%):** ____________

(Total Points / Total Possible Points x 100)

**Actionability**

<table>
<thead>
<tr>
<th>Item #</th>
<th>Item</th>
<th>Response Options</th>
<th>Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>20</td>
<td>The material clearly identifies at least one action the user can</td>
<td>Disagree=0, Agree=1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>take.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>21</td>
<td>The material addresses the user directly when describing actions.</td>
<td>Disagree=0, Agree=1</td>
<td></td>
</tr>
<tr>
<td>22</td>
<td>The material breaks down any action into manageable, explicit steps.</td>
<td>Disagree=0, Agree=1</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Statement</td>
<td>Rating</td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>--------------------------------------------------------------------------</td>
<td>-------------------------------------</td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>The material provides a tangible tool (e.g., menu planners, checklists) whenever it could help the user take action.</td>
<td>Disagree=0, Agree=1</td>
<td></td>
</tr>
<tr>
<td>24</td>
<td>The material provides simple instructions or examples of how to perform calculations.</td>
<td>Disagree=0, Agree=1, No calculations=NA</td>
<td></td>
</tr>
<tr>
<td>25</td>
<td>The material explains how to use the charts, graphs, tables, or diagrams to take actions.</td>
<td>Disagree=0, Agree=1, No charts, graphs, tables, or diagrams=N/A</td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>The material uses visual aids whenever they could make it easier to act on the instructions.</td>
<td>Disagree=0, Agree=1</td>
<td></td>
</tr>
</tbody>
</table>

**Total Points:** ____________

**Total Possible Points:** ____________

**Actionability Score (%):** ____________

(Total Points / Total Possible Points x 100)
### Appendix B

**Expanded Brief Patient Health Literacy Screen (EBHLS)**

1. **If you need to go to the doctor, clinic or hospital, how confident are you in filling out the medical forms by yourself?**

   | __ not at all confident (1) | ____ a little confident (2) |
   | ____ somewhat confident (3) | ____ quite confident (4) |
   | ____ extremely confident (5) |

2. **How often do you have someone (family member or staff at the clinic or hospital) help you to read health or medical forms?**

   | ____ always (1) | ____ often (2) | ____ sometimes (3) |
   | ____ occasionally (4) | ____ never (5) |

3. **How often do you have problems learning about your health because of trouble understanding written health information?**

   | ____ always (1) | ____ often (2) | ____ sometimes (3) |
   | ____ occasionally (4) | ____ never (5) |

4. **How often do you have trouble understanding what your doctor, nurse, or pharmacist (druggist) tells you about your health or about treatments?**

   | ____ always (1) | ____ often (2) | ____ sometimes (3) |
   | ____ occasionally (4) | ____ never (5) |

5. **How often do you have trouble remembering instructions from the doctor, nurse or pharmacist (druggist) after you get home?**

<p>| ____ always (1) | ____ often (2) | ____ sometimes (3) |
| ____ occasionally (4) | ____ never (5) |</p>
<table>
<thead>
<tr>
<th>Score &lt; 19 indicates probable limitation in patient health literacy</th>
<th>Total Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Score of 3 or &lt; on an individual item indicates an area of attention/assistance needed to assure patient ability to understand health information/materials.</td>
<td></td>
</tr>
</tbody>
</table>

What would help you best understand and remember the information you are getting about your health?

_________________________________________________________________________
_________________________________________________________________________
_________________________________________________________________________
Appendix C

Letter of Approval from author of the EBHLS

<table>
<thead>
<tr>
<th>Sand-Jecklin, Kari</th>
<th>Feb 24</th>
</tr>
</thead>
<tbody>
<tr>
<td><a href="mailto:ksandjecklin@hsc.wvu.edu">ksandjecklin@hsc.wvu.edu</a></td>
<td></td>
</tr>
</tbody>
</table>

To me

Hello Tami,

You have my permission to use the instrument. I have attached it as it has a just slightly revised name. Also have attached the most recent article describing incorporation of the assessment into a hospital admission database. Best wishes in your project. I’d be interested to find out how it goes.

Kari S-J

Kari Sand-Jecklin, EdD, MSN, RN, AHN-BC

Director of BSN Programs and Interim Assoc. Dean

West Virginia University School of Nursing

Confidentiality Notice: This e-mail message, including any attachments, is for the sole use of the intended recipient(s) and may contain confidential and/or privileged information. Any unauthorized review, use, disclosure or distribution by anyone other than the intended recipient(s) is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy all copies of the original message.
Appendix D

Burke-Litwin Model Concept Map

Figure. Burke-Litwin Model. Retrieved from Google Images. Used with permission (Appendix L).
**Appendix E**

**Burke-Litwin Model Questionnaire**

<table>
<thead>
<tr>
<th>Dimensions of Model</th>
<th>Key Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. External Environment</td>
<td>What are the key external drivers? How are these likely to impact on the organization? Does the organization recognize these?</td>
</tr>
<tr>
<td>2. Mission and Strategy</td>
<td>What does top management see as the organization’s mission and strategy? Is there a clear vision and mission statement? What are employees’ perceptions of these?</td>
</tr>
<tr>
<td>3. Leadership</td>
<td>Who are the role models? What is the style of leadership? What are the perspectives of employees?</td>
</tr>
<tr>
<td>4. Organizational Culture</td>
<td>What are the overt and covert rules, values, customs, and principles that guide organizational behavior?</td>
</tr>
<tr>
<td>5. Structure</td>
<td>How are functions and people arranged in specific areas and levels of responsibility? What are the key decision-making, communication, and control relationships?</td>
</tr>
<tr>
<td>6. Systems</td>
<td>What are the organization’s policies and procedures, including systems for reward and performance appraisal, management of information, HR and resource planning, etc?</td>
</tr>
<tr>
<td>7. Management Practices</td>
<td>How do managers use human and material resources to carry out the organization’s strategy? What is their style of management and how do they relate to subordinates?</td>
</tr>
<tr>
<td>8. Work Unit Climate</td>
<td>What are the collective impressions, expectations, and feelings of staff? What is the nature of relationships with work unit colleagues and those in other work units?</td>
</tr>
<tr>
<td>9. Task and Individual Skills</td>
<td>What are the task requirements and individual skills/abilities/knowledge needed for task effectiveness? How appropriate is the organization’s “job-person” match?</td>
</tr>
<tr>
<td>10. Individual Needs and Values</td>
<td>What do staff value in their work? What are the psychological factors that would enrich their jobs and</td>
</tr>
</tbody>
</table>

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
</table>
| **11. Motivation** | Increase job satisfaction?
|   | Does staff feel motivated to take the action necessary to achieve the organization’s strategy? Of factors 1-10, which seems to most impact motivation? |
| **12. Individual and Organizational Performance** | What is the level of performance in terms of productivity, customer satisfaction, quality, etc? Which factors are critical for the motivation and therefore performance? |

Appendix F

Grand Valley State University HRRC Determination Letter

DATE: April 25, 2016

TO: Tami Pettenger, RN, BSN
FROM: Grand Valley State University Human Research Review Committee

STUDY TITLE: [900044-1] Health Literacy Assessment and Clinical Summary Distribution as a Meaningful Use Incentive

SUBMISSION TYPE: New Project
ACTION: NOT RESEARCH
EFFECTIVE DATE: April 25, 2016

REVIEW TYPE: Administrative Review

Thank you for your submission of materials for your planned research study. It has been determined that this project:

**DOES NOT** meet the definition of covered human subjects research* according to current federal regulations. The project, therefore, **DOES NOT** require further review and approval by the HRRC.

If you have any questions, please contact the Research Protections Program at (616) 331-3197 or rpp@gvsu.edu. The office observes all university holidays, and does not process applications during exam week or between academic terms. Please include your study title and reference number in all correspondence with our office.

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

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

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

Hospital IRB Determination Letter


NOTICE OF CLINICAL QUALITY IMPROVEMENT MEASUREMENT DESIGNATION

To: Tami Pettenger, RN, BSN, DNP-s
2323 Rosewood St.
Jenison, MI 49428

Re: IRB# 16-0502-3 Health Literacy Assessment and Clinical Summary Distribution as a Meaningful Use Incentive

Date: May 6, 2016

This is to inform you that the Mercy Health Regional Institutional Review Board (IRB) has reviewed your proposed research project entitled "Health Literacy Assessment and Clinical Summary Distribution as a Meaningful Use Incentive. The IRB has determined that your proposed project is not considered human subjects research. The purpose and objective of the proposed project meets the definition of a clinical quality improvement measurement.

All publications referring to the proposed project should include the following statement:
"This project was undertaken as a Clinical Quality Improvement Initiative at Mercy Health and, as such, was not formally supervised by the Mercy Health Regional Institutional Review Board per their policies."

The IRB requests careful consideration of all future activities using the data that has been proposed to be collected and used "in order to assess quality and outcomes of care for patients being seen as a part of the improve patient understanding of their plan for care of high blood pressure and subsequent adherence."

The IRB requests resubmission of the proposed project if there is a change in the current clinical quality improvement measurement design that includes testing hypothesis, asking a research question, following a research design or involves overriding standard clinical decision making and care.

Please feel free to contact me if you have any questions regarding this matter.

Brenda Hoffman
IRB Chairperson

Copy: File
Appendix H

Script for Medical Assistant

We are doing a survey about the printed plan that we hand out after your visit. A graduate student nurse is helping us with this. We would like your help if you have time. You do not have to do this. If you choose to or not, there will be no effect on your care here at the clinic. If you start the meeting with the student and change your mind, you can stop at any time.

If you are willing to talk to the student, she will meet with you to ask you a few questions. She will also make a copy of your printed paperwork. Your answers to the questions will be kept private and will not have your name on it. This should take about 5 to 10 minutes and you will receive a small gift for your time.
Appendix I

Script for DNP Student

“Hi, my name is Tami Pettenger and I am a nursing student at Grand Valley State University. We are looking at the plan of care that we give to you at the end of your time with the doctor. We want to make sure the paper is easy to read and understand. We are asking you to help today because you just met with the doctor and received a plan of care. Answering a few questions for us will help.

I am going to ask you 10 questions. I will write down the answers to these questions on a piece of paper. I will also make a copy of your plan of care. I will not put your name on these papers. I will do everything possible to make sure your answers and plan are kept private. This interview should take only 5 to 10 minutes. You may stop at any time if you do not want to continue. This will not affect your care at the clinic, whether you answer all my questions or stop. If you stop, I will destroy your papers. If you agree, we can begin. I will consider your agreement with this to be answering all the questions.”

At the end of the survey: “Thank you so much for working with me today. If you have any questions you can call me here at the clinic and I will return your call. You may also call my project advisor, Dr. Andrea Bostrom, at 616-331-7172. As a thank you for your time, I have 2 bus passes for you.”
Appendix J

Demographic Data Collection Tool

1. Age _________________

2. Race/ethnicity
   a. Caucasian
   b. African American
   c. Hispanic
   d. Asian
   e. Other
   f. Mixed race

3. Education level
   a. Less than high school
   b. Some high school
   c. Graduated high school or GED
   d. Some college/trade school
   e. Graduated college/trade school

4. What does hypertension mean to you?

____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
Appendix K

Sample PEMAT-Guided Clinical Summary


July 27, 2016

*This document has important information related to your health*

**Diagnosis:** Hypertension (high blood pressure or a higher amount of pressure in your blood vessels when your heart pumps blood through the body).

**Plan:**
1. You need to pick up your medication, Hydrochlorothiazide (HCTZ) 12.5mg, from the pharmacy. You will take this medication once in the morning, everyday.

2. You also need to start checking your blood pressure at home, everyday. You need to keep a notebook with these numbers and bring it to your next appointment.

3. You need to continue using your Flonase nasal spray 2 sprays in each nostril 2 times a day to control your nasal allergies.

4. You can call the office (616)-789-1234 if you have questions or symptoms get worse.

**Current Medications:**

1. HCTZ 12.5mg one time daily, in the morning

2. Flonase 2 sprays each nostril 2 times a day

3. Multivitamin every day
Most recent vital signs:

Blood pressure: 142/88
Heart rate: 88
Respiratory rate: 12
Temperature: 37°C
Height: 70 inches
Weight: 184 pounds

Problem List:

1. Hypertension, controlled
2. Chronic sinusitis

Immunization History:

1. Up to date on all childhood vaccines
2. Td 8/12/2008
3. Recommend flu shot this fall

Summary:

Today you came to the office for a routine wellness visit and to monitor your blood pressure. We talked about continuing your regular medication and checking your blood pressure everyday at home. You may start these treatments today. Please call the office (616)-789-1234 with any questions.

Next appointment:

Adult wellness visit, 11/18/2016

Lab results:

None today
Appendix L Burke-Litwin Permission

Dear Ms Pettenger:

You have my permission to reprint the Burke-Litwin Model and questions in the Appendices of your final paper.

W. Warner Burke