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Improving Clinicians' Access to Patient Education and VA Resource Information

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Improving Clinicians' Access to Patient Education and VA Resource Information: A Pilot Study

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Improving Clinicians' Access to Patient Education and VA Resource Information

Abstract

Problem: In a western US Veterans Administration (VA) hospital system, patient education materials are provider-specific, not standardized, and not located in a central, readily available location.

Context: How does a patient education tool affect the clinicians' delivery of health education in increasing health literacy compared to written information alone in the US veteran population? An integrated literature review was performed using Cochrane, Joanna Briggs Institute (JBI), Scopus, CINAHL, and PubMed databases to address the PICOT question above and determine the impact of patient education tools on health literacy and patient engagement. The literature recommended improving patient education for better health outcomes. Individualizing care is one of the most commonly used approaches. The patient education delivery should be standardized but still individualized, per the patient's needs. The analysis of the integrated review of evidence uncovered promising results. Patients have the right to safe healthcare, but with this right comes the responsibility to educate themselves about their medical information. The change in providing health education in structured format could improve the patient's understanding of the care they had in the hospital and their knowledge of the information they need to recover fully at home. Clinicians must have the proper training and knowledge to emphasize patient involvement throughout each step of patient education.

Interventions: Clinicians frequently used electronic charting Computerized Patient Record System (CPRS) for entering patient-related orders and documentation. A linkage in CPRS to a web-based collaboration site, Microsoft SharePoint, was created to directly connect clinicians to

the patient's education and VA resource information. These collected patient education materials came from VA-approved patient education sites and expert clinicians. Due to the COVID 19 pandemic, some VA resources were halted and the resource information in SharePoint underwent several modifications with the corresponding program managers.

Measures: The pre-and post-implementation surveys compared the timeliness and the degree of difficulty in aggregating the health-related information.

Results: The creation of a SharePoint site improved clinicians' timely and easy access to evidence-based, systemwide, and clinician-driven patient education and resource information across the care continuum. The level of difficulty in aggregating patient education decreased with the use of the SharePoint site. Clinicians say it is easier to find information on diagnoses, medication, and resources on the SharePoint site.

Conclusions: The nursing implication in future research is warranted to determine the tangible impact of clinicians' roles in providing patient education and resource information—which, as this project showed, often evolved into the ever-changing healthcare system. Future research should include defining the quality of how clinicians provide this health-related information and how patients benefit from the information.

Improving Clinicians' Access to Patient Education and VA Resource Information: A Pilot Study

Introduction

Like many large health systems, the VA healthcare system exhibits variations in practice among facilities, clinics, and healthcare providers because of diverse expertise and practice styles among clinicians, different clinic organizations, leadership and resources, and influences in community and regional factors (Atkins, Kilbourne, & Shulkin, 2017). This provider-specific approach is contingent on individual providers' expertise, practice location, and time with the healthcare organization impacts healthcare delivery (Spangler et al., 2009). The healthcare planning for the VA is equally complicated because of the possibility that veterans might have more than one possible source of healthcare coverage (Eibner et al., 2016). Like many non-VA users with multiple conditions, veterans often actively seek various prescribers of medications for their chronic diseases to maximize access and convenience and, more importantly, to minimize cost (Voils, Sleath, & Maciejewski, 2014). Veteran patients with multiple chronic conditions account for a disproportionate share of VA healthcare expenditures (Yoon, Zulman, Scott, & Maciejewski, 2014).

The Role of Health Literacy

For this DNP project, the term *clinicians* refer to all healthcare providers including but not limited to physicians, nurses, respiratory therapists, physical therapists, and occupational therapists who provide health education to patients and their families. The Agency for Healthcare Research and Quality's (AHRQ) definition of health literacy will be used: *"when health information and services designed for the public match people's capacity to find, understand and use them"* (AHRQ, n.d.). Health literacy is best applied when a patient is able to understand the

health information and comprehend the consequences presented in order to make an informed healthcare decision. High educational literacy is not necessarily a prediction of proficient health literacy (Clark, 2011); though, health literacy mediates the association between educational attainment and health behavior (Friis, Lasgaard, Rolands, Osborne & Maindal, 2016). A low-literacy-related stigma can genuinely impair a patient's interactions with health professionals and can inhibit the potential to benefit from needed health services (Easton, Entwistle, & Williams, 2013). Having low health literacy predisposes patients to high ER utilization and hospital readmission (Mitchell, Sadikova, Jack, & Paasche-Orlow, 2012) and low treatment adherence (Miller, 2016). These findings were not unexpected because patients with low health literacy (HL) had poorer knowledge and inadequate self-care behavior than those with high HL (Matshuoka et al., 2016).

Among the veteran population, 17.2% are considered to have inadequate or marginal health literacy (Haun et al., 2015). Having limited health literacy may inhibit patients from having adequate skills to perform appropriate self-care needs (Jacobs, Lou, Ownby, & Caballero, 2016). Various approaches have been studied to solve the problem of improving low health literacy and poor self-care behavior. For instance, patients with heart failure (HF) commonly believed that their hospitalizations were caused mainly by lack of knowledge and noncompliance (Gilotra et al., 2017). Interestingly, nurses were uncomfortable with HF teaching regarding medications, low sodium diet, activity, and exercise (Albert et al., 2015).

Society expects doctors and other healthcare professionals to perform their jobs with skillsets that are superior to that of non-professionals. Transitioning a patient from hospital to home with inadequate skills, insufficient resources, and poor health literacy is harmful and burdensome to the patient and that healthcare organization. According to Clark (2011), there are

two ways that health literacy is potentially associated with malpractice liability. The first approach is when the standard of care and health care decisions set by providers are contingent on patients' self-management. As an example, Clark (2011) cited the case of Wickline vs State, wherein a patient sued the State of California for harm. Instead of four additional days of hospitalization to recuperate from the vascular procedure, the patient was discharged. A few days after discharge, the patient was readmitted, and the leg was consequently amputated because of infection. The court stated that the following contributed to the adverse outcome: 1) lack of reference to the patient's health literacy, 2) poor quality of patient-provider communication, and 3) the insufficient obligation of the provider to ensure that the patient understands the responsibility of managing her care. Another way that health literacy can contribute to medical liability is when the patient fails to follow the treatment instructions. To illustrate, Clark (2011) cited the case of Bryant vs Clanatone, wherein a cardiac patient failed to take the necessary antibiotic regimen before a dental procedure. The court found that the patient was aware of his cardiac condition and knowledgeable to know the necessity of taking an antibiotic regimen. What was not clear in this case is how effective was the communication between the dentist, the cardiologist, and the patient.

The patient should be educated and expected to be an integral member of the safety team (Liang, 2001). Patients have the right to safe healthcare, but with this right comes the responsibility to educate themselves about their medical information. Regardless of literacy level, doctors were the most commonly used source of medical information—frequently used by 85% of limited and adequate literacy patients (Duren-Winfield et al., 2015). Citing the case of McGeshick v. Choucair, the providers worry that giving patients too much information will encourage them to second guess the provider's medical judgment (Clark, 2011).

To improve health literacy, without triggering these uncertainties of giving patients too much information, one must consider the implementation of health education tools and their delivery as legally relevant support for healthcare provider defense against failure-to-inform claims. The Foard v. Jarman case is an example wherein a physician was sued for inadequate disclosure of lifestyle change of gastric bypass after discharge (Clark, 2011). After the court decided that the patient was capable of reading and understanding the information booklet titled "What You and Your Family Should Know About Gastric Operations for the Treatment of Obesity" which the organization provides per protocol, the court dismissed the case.

Improving health education delivery is set to become a vital factor in increasing health literacy and improving patient engagement. Discharge planning and pre-discharge education are imperative because low quality of discharge teaching decreases patient's readiness for hospital discharge (Nurhayati, Songwathana, & Vachprasit, 2018) and is associated with both early and late readmissions (Greco et al., 2015). Therefore, clinicians should be armed with an effective teaching tool to help improve the patient's perception of their healthcare needs which includes how to manage the care demands at home. The proposed quality improvement project of creating a central location for frequently used education materials can help clinicians to easily aggregate needed evidence-based information.

The Local Problem

This DNP project's implementation site is a VA teaching hospital located in the western part of the United States. The traditional approach to providing information to veterans, particularly on patient education, is the use of hard copy. For instance, if a patient needs to know about pneumonia, the clinicians may access the information from the hospital's online health library, which is unfortunately embedded among other hospital resources at the main hospital

website. Additionally, not all pieces of information appropriate for patient health and educational literacy are available in the health library. For example, if a patient needs to learn how to insert a Foley catheter, the skillset indicated at the online health library is not appropriate to a patient's level of health literacy. In a similar vein, if a patient needs heart failure (HF) education, a provider's order for HF education triggers a series of actions that include the primary nurse utilizing an HF packet from another source of patient education, the health education repository. If the patient is deemed at high risk for readmission, the Project Re-Engineered Discharge (RED) transition coordinator steps in to provide comprehensive patient education. Even this process is not uniformly carried out in the medical and surgical inpatient setting or the emergency room and same-day surgery/procedure setting. Undeniably, the clinician is relying on these fragmented processes of delivering health information in disparate places throughout the hospital. With this in mind, it is often left to the nurses to aggregate relevant information, but given busy nursing schedules, this is an unrealistic task.

Despite the above shortcomings, the VA generally performed well in mortality ratings compared with non-VA settings (O'Hanlon et al., 2017). Outpatient care was generally strong in VA facilities particularly providing mammography, annual eye examination, colorectal screening and cholesterol testing. In fact, VA users were more likely than veterans receiving care outside the VA to obtain recommended diabetes care, including foot examination, eye examination and two or more A1c tests. VA users received better quality care than non-VA users for nine out of ten measures of inpatient care while 8 of 15 clinical pharmacy services were more commonly provided in VA hospitals than non-VA hospitals including but not limited to in-service education, clinical research, drug protocol management, drug therapy counseling and participation on rounds. Fredericks & Nakazawa (2015) stated that most non-VA providers were

not comfortable speaking about health-related exposures and associated risks that veterans might experience during military service because they are unfamiliar with referral and consultation services for veterans.

The problem is not that there is not any type of patient education content geared toward improving health literacy. The issue is that the contents are provider-specific, not standardized, and not located in a central location. Aside from this variation of health care practice commonly observed in an extensive healthcare system (Atkins, Kilbourne, & Shulkin, 2017), the provider's lack of knowledge and skills and inability to answer different patients' needs were consistent barriers to patient engagement (Liang et al., 2018).

Standardizing patient education content can enhance health literacy and better patient engagement (Jacobs et al, 2016; Watters, Bergstrom, & Sandefer, 2016). Time constraints represent the most pervasive barrier to obtaining information and followed closely with lack of access to the knowledge source (Aakre, Maggio, Fiol, & Cook, 2019; Del Fiol, Workman, & Gorman, 2014). With this in mind, the clinicians should be armed with an effective teaching tool to help improve the patient's perception of their healthcare needs which includes how to manage the care demands at home. This project seeks to create a SharePoint site geared toward all clinicians to improve access to patient education and resource information. Microsoft SharePoint is a website that accumulates information in a database and displays these collected data in the form of well-organized web pages. This method of web-based collaboration allows users to share and collaborate with other fellow users as well as end-users in a protected but easily accessible online environment.

The project's goal is to provide the clinicians with timely and easy access to evidenced-based, systemwide-used, clinician-driven patient education and resource information materials.

In doing so, clinicians will be directly connected to the patient education and VA resources immediately without shifting from one website to another. All things considered; clinicians may potentially increase the health literacy of the veteran population.

The Integrated Review of Evidence

An integrated review of the literature was performed using Cochrane, Joanna Briggs Institute (JBI), Scopus, CINAHL, and PubMed databases to examine the gap in practice. The following key terms were included in the search: *patient education, health literacy, health education delivery, health outcome, and patient engagement.* To obtain the most current review of the evidence, the search was limited to systematic review or meta-analysis, clinical practice guidelines, critically appraised research studies, individual research studies, and peer-reviewed journal articles published between 2015 and 2019 and written in English. The search resulted in 768 articles. Studies on pediatrics, children, neonatal, and newborn populations were excluded from this review of the literature. This undertaking resulted in18 articles after the duplicates and the undefined articles were removed.

Results:

Improved engagement and shared decision-making

Improving patient's health information-seeking self-efficiency and health literacy has the potential to impact healthcare engagement and shared decision-making (SDM) (Wigfall & Tanner, 2018). Information seekers who are confident in seeking the right healthcare information are more likely to be highly involved in SDM. Better healthcare engagement by taking their own health information to their doctor's visits results in a better patient-provider relationship. Consistent with this finding, high health literacy corresponds with higher levels of empowerment, improved decision-making skills, and a more active role in treatment (Visscher et

al., 2018). Providing health education is considered a societal role in supporting and guiding the inactive and non-participatory individuals to become active and productive participants in healthcare decision-making (Gruman et al., 2010). To avoid the risk of preventable illness, suboptimal health outcomes, and wasted resources, the conceptual "Engagement Behavior Framework" (EBF) was utilized. The concept affirms that patients and consumers alike must make informed decisions about insurance and clinicians to work with, coordinate the complex treatments to solve their health concerns and organize the communications among these providers. Delivering health education with patient engagement technology can improve communication between the patients and healthcare providers to configure a personalized, informed decision (Prey et al., 2014). For instance, the eHealth usage in engaging patients in their healthcare broadened this patient engagement relationship in three dimensions, namely, behavioral (what the patient does), cognitive (what the patient believes and knows), and emotional (what the patient feels) (Rathert et al., 2017). In a similar study, the 'edutainment' intervention provided the participants with enough information to help them decide on what therapy is indicated for their respective conditions (Lopez-Olivo et al., 2018).

The effect of patient education delivery increases the level of knowledge and satisfaction with education (Keulers, Welters, Spauwen, & Houpt, 2007). The knowledge scores after computer-based patient education were significantly higher regardless of age, gender, the frequency of computer use, previous CTS operation, previous CTS education, and education level. Along those lines, utilizing tablet computers to engage patients in their care and discharge planning showed improved communication with their nurses (74%) and with their physicians (53%), as well as increased patient understanding of their medications (90%) during their inpatient hospitalization (Winstanley et al., 2017). Additionally, even older participants and

those less experienced in technology such as the Internet were equally capable of using the new health education delivery.

In the era of electronic health records, there are six-essential patient-physician communication functions, namely fostering relationships, pertinent information exchange, responding-to-emotions, managing uncertainty, decision making, and enabling self-management (Rathert, Mittler, Banerjee, & McDaniel, 2017). The patient education portals and secure messaging help patients keep track of their histories, remember what was discussed, and prepare for clinical encounters. This collaborative relationship between the patient and provider empowered the patient to become more involved and engaged in his or her care.

Improved self-management skills

The-passing rate for the post-video knowledge test using an iPad to learn about warfarin was significantly higher than the passing rate for the pre-video knowledge test (Kim, Mohammad, Coley & Donihi, 2015). There was an improvement in patients' differentiating when to call their providers for more significant bleeding problems such as hematuria; however, the most considerable improvement was seen in diet and use of over the counter (OTC) medications. Another electronic tablet-based inhaler education showed an improved technique of inhaler use irrespective of specialty or previous personal or family member inhaler use (Mulhall et al., 2017) The inhaler technique scores improved by 44% in the multimedia group and only 19% in the print-based group. At the same time, even educational material can improve the inhaler technique (Beatty, Flynn, & Costello, 2017).

Low caregiver health literacy was associated with a reduction in care recipient self-management behaviors, increased care recipient usage of healthcare services, and compounded the incidence of caregiver burden (Yuen, Knight, Ricciardelli, & Burney, 2018). Caring for

adult care recipients differs from caregiving in pediatric populations because the adult care recipients participate in healthcare decision-making. For this reason, a tailored intervention to address the patient's health literacy needs will benefit both the care recipients and caregivers by improving individual health outcomes.

Increased adherence to treatment plans

Patients with high health literacy adhered to their treatment plans at nearly twice the rate of patients with low health literacy (Miller, 2016). Patients who received interventions were nearly three times as likely to have high health literacy. In contrast, patients who received no intervention were twice as likely to remain at low health literacy levels. Accordingly, the risk of nonadherence was nearly double in participants with no intervention. The group who participated in the intervention had twice the likelihood to adhere to the treatment plan. This study established that patients who received interventions were able to expand their health literacy and had a 16% higher rate of treatment plan adherence.

Higher patient activation measure level was related to 9 out of 13 better health outcomes, which include but are not limited to improved clinical indicators, better health behaviors, and increased use of women's preventive screening tests (Greene, Hibbard, Sacks, Overton, & Parrotta, 2015). The Patient Activation Measure (PAM) is a 13-item metric scale that quantifies the patients' "engagement," activation, or self-management capabilities. Highly activated patients continued to have normal HDL, serum triglycerides, and PHQ-9 levels as well as undergoing cancer screening tests (Pap smears and mammography).

Supporting people with low health literacy could improve patients' medication knowledge and adherence (Wali et al., 2016). The most efficient interventions are tailored interventions that can manage barriers to health literacy. Consistent with this study that tackles

barriers to health literacy, the hour-long 1:1 educational predischarge session using the health belief model (HBM) session provided patients with the appropriate mechanism to change their old lifestyles, including identifying barriers to achieving their goals (Eshah, 2013). With this application of patient education delivery, it led to a significant improvement in health responsibility, nutrition, and interpersonal relations.

Improved quality of life

Patients with low HL pay little attention to their health status; hence, their unhealthy behavioral habits continue (Zheng et al.,2018). In this study, health skills refer to the ability of an individual to transform health knowledge into healthy behavior. The study concluded that improved health status and quality of life (QOL) comes from excellent health skills. This study has similar findings to those of Eshah (2013) wherein both studies further showed that health skills and quality of life are strongly correlated.

Additionally, poor health literacy is strongly linked to lower QOL in all four domains, namely, physical, psychological, social relationships, and environment, particularly for older people (Panagioti et al., 2018). Not only is this alarming because approximately one in every five patients had health literacy problems; it is also disturbing because having poor health literacy is a significant independent predictor of lower QOL in older patients with long-term conditions.

Rationale

Theoretical Framework: Diffusion of Innovation

The socio-ecological approach to supporting a comprehensive understanding of health literacy aligns with increased patient engagement (McCormack, Thomas, Lewis, & Rudd, 2017), which is consistent with Menichetti, Graffigna & Steinsbekk (2018), who stated that the education dimension was the most frequent focus in a patient-engagement intervention. The

health literacy of the socio-ecological model posits that creating a supportive environment for a better comprehension of health information could lead to a more sustainable change in the interaction with clinicians, the community, and the healthcare system (McCormack et al., 2017). To create this supportive environment, adopting the health belief model (HBM) as the foundation of this project is inevitable. The HBM explains that health-related behavior via the personal assessment of one's vulnerability to health risks (perceived severity and susceptibility to chronic disease) results in the consciousness to better one's health (Ahadzadeh et al., 2015).

Roger's Diffusion of Innovations Theory was used to identify the steps and processes required to achieve pervasive dissemination and the diffusion of community health innovations. There are five established adopter categories: innovators, early adopters, early majority, late majority, and laggards (Glanz et al., 2015). The innovators were the first to develop ideas, while the laggards were bound in tradition and adopted change conservatively. The early majority needed evidence and success stories before adopting change. In contrast, though skeptical of change, the late majority adopted change after being tried by everyone else. Therefore, the project needs to identify and recruit the early adopters of change because this group embraces change opportunities and very comfortable adopting new ideas. The theory had been used for several years. For instance, the theory was used to identify and explore factors that impact adoption, implementation, and continued use of telecare technology (Sugarhood, Wherton, Procter, Hinder, & Greenhalgh, 2014). The diffusion of innovations can also be combined with other theories. For example, the diffusion of innovations and the theory of reasoned action frameworks were used to analyze factors related to the adoption of AIDS prevention in the study carried out by Paulussen, Kok, Schaalma, and Parcel in 1995 (Glanz et al., 2015).

The General Leadership Approach:

VA's Servant Leadership and Kotter's Eight Steps of Change

This DNP student is a hands-on service professional at the frontline of the current pandemic. Health care providers may potentially affect change in health care delivery at a fiercer level than before. Health care's relationship is between health care providers, and patients should be safeguarded against unfounded practices and information. A patient must be able to trust that clinicians are competent, well-informed, and have the patient's best interest at heart. That said, Greenleaf's Servant Leadership is one of the general leadership models implemented for this project because servant leaders encourage high performance and innovation throughout the health care continuum by helping clinicians and other health care providers pursue and accomplish their goals (Trastek, Hamilton, & Niles, 2014). The VA fosters the use of Servant Leadership practice. The VA's Servant Leadership is a philosophy that highlights caring, authenticity, and placing veterans and employees before other goals (US Department of Veterans Affairs, National Center for Organization Development, n.d.).

Kotter's Eight Steps of Change will assist in the implementation of the project to provide clinicians timely and easy access to patient education and resource information. Kotter's process was found to be an effective way of managing organizational change when used as a simple set of linear steps (Pollack & Pollack, 2015). The stepwise approach enabled the expansion of this new service support by enhancing the professional visibility of the project on the frontline workflow and helping create a more productive environment in the targeted nursing units. At this Veteran Affairs (VA) teaching facility, the sense of urgency (Step 1) resulted from its least favorable standing in the nationwide ranking in Strategic Analytics for Improvement and Learning (SAIL) in several key domains (U.S. Department of Veterans Affairs, n.d.) and the

result of the Consumer Assessment of Health Providers and Systems (CAHPS) Survey, wherein the two lowest-ranking patient satisfaction measures of this facility were the ones regarding nurses' communication with the patient and patients' understanding of how to manage their health after discharge (U.S. Department of Veterans Affairs, n.d.). One of the problems that could have contributed to this predicament is the disparity within the practice setting of each nursing unit, particularly in providing information and patient education.

Developing a guiding coalition (step 2) requires finding new key staff members who share a sense of urgency regarding improving patient education and who are invested in developing innovative new solutions. Tavares Barbosa et al. (2017) determined that the valorization of people is the theme that provides experienced and seasoned frontline nurses the strength and opportunity for the implementation of a project such as PEP. Utilizing the expertise of these experienced nurses, the project will be able to transform this change in practice into scientific material and future studies.

Developing the change vision (Step 3) entails the involvement of a project sponsor, Evidence-Based Practice (EBP) director, VA health education coordinator, the system-wide Patient Education Committee, and the nurse managers of each nursing unit in the project. Coordinated implementation is vital. Each stakeholder can create a vision that meets the needs of the facility by capitalizing on the strengths of the leadership team.

Communicating the vision (Step 4) by collaborating regularly is essential for the successful implementation of the PEP project. With the endorsement of the nursing leadership and the EBP director, I will work in partnership with the new VA health education coordinator (VHEC), the system-wide Patient Education Committee, and the nurse managers of each nursing unit.

Empowering broad-based action (step 5) by encouraging thoughtful risk-taking strategies to generate short term wins (step 6) are vital steps in propelling the change towards success. That said, the DNP student will team up with the unit's expert clinician to organize and encourage the volunteer project unit champion or liaison. When the project is fully implemented across the facility's healthcare system, the steering, workflow, and integrating unit champions comprise the second step of the project or action phase. The steering unit champion will review the current use of the unit's online materials and modify them if needed. The workflow unit champion will assist the DNP student in incorporating the new process into the old one and formulate an alternative plan as needed. The integration unit champion will use information technology to incorporate an option in the tool portion.

The plan to influence the culture to make the organization more open and receptive to change is embedded in the last two steps of Kotter's model of change. The increased visibility produced by the short-term wins helps with the next step: transforming the culture (Step 7) by challenging and revolutionizing the policies or systems that hamper the PEP project. By anchoring new approaches in the culture (Step 8), many frontline staff will grasp the connection between the new vision, the new workflow, and their newfound success.

Rowe and Hogarth (2005) utilized Kotter's model of change in the implementation team huddles in eight hospitals. In the hospitals that followed Kotter's model, there was an improvement in communication as perceived in the early steps of the model. Facilitating the spread of the team huddle implementation and sustained use of the huddles were also evident in the last phase of Kotter's model of change, which is just as what the model proposes.

Specific Aim

Aim Statement: The DNP student seeks to create a SharePoint site to improve access to patient education and resource information. The project goal is to provide the clinicians with timely and easy access to evidenced-based, systemwide-used, and clinician-driven patient education and resource information.

The Key Stakeholders

Critical Stakeholders: Service-line nurse executives are exceptionally situated to lead care transformation that leverages technology to improve patient engagement, redefine nursing practice, and improve practical outcomes (Clavelle, 2018). The project involved collaboration with the Office of VA Research and Innovation because it continually supports all multidisciplinary committee work related to patient-centered research and evidence-based practice. An alliance with the Patient Experience Director of the Office of Quality, Safety, and Values was instrumental in this project because this office can promote this project and its services for veterans and their families.

The Stakeholders and Resources. The VA health education coordinator (VHEC) is the domain expert in the clinical field. The DNP student assesses the clinicians' work processes, existing issues, and limitations in the clinicians' acquisition of health education information. The stakeholders who played a critical role in this project were nurses working at the pilot unit, also known as the Intermediate Intensive Care Unit (IICU). Actively involving these nurses during the conceptualization and implementation phases yielded a higher chance of better and cohesive collaboration. Cooperation with the VA employee union was also vital in minimizing the needs-assessment survey burden on the employees. The pre and post-implementation of two-minute surveys are exempted from Organizational Assessment Committee (OAC) and National Union

Notification review because they will be distributed to less than 10,000 employees and be entirely completed at the primary facility level (US Department of Veterans Affairs, Office of Research & Development n.d.).

The Office of Information and Technology was instrumental in building SharePoint sites on large scale; however, the local SharePoint representative oversees local sites. In this project, the SharePoint site was created as a sub-page of the Veteran Health Education SharePoint.

Intervention:

The Clinician Patient Education and VA Resource Information SharePoint Site

Since most clinicians at the VA use the CPRS for entering patient-related orders and documentation, the dropdown menu now includes a link to the SharePoint site. Therefore, clinicians are now immediately connected to the patient's education and VA resource information without shifting from one website to another.

To ensure that SharePoint's patient education information adheres to the national Veterans Health Education and Information (VHEI) program and the VHA National Center for Health Promotion and Disease Prevention, the DNP student follows the instructions of the VHEI's director (Shannon Peters, personal correspondence, January 24, 2020). In a letter in which the director addressed patient education materials, she stated that the national VHEI program does not maintain a source of approved patient education materials. She added that the first source of patient education material should always be the VA or other federal government resources, such as the VA webpages, Veterans Health Library, Centers for Disease Control and Prevention, and National Institutes of Health. She also said that the VA National Library has contracts with journal articles and patient education resources. If local facilities have contracts

with outside organizations, such as Krames-on-Demand (KOD) or GetWell Network, they must get approval to use these resources based on local practice.

Correctly delivering a personalized patient education depends on more than the abovementioned methods. This project provided additional strategies for clinicians to cope with daily decision-making impacting their patients' health and facilitates the meaningful exchange of information to improve the quality of care. These additional strategies include effective and judicious utilization of the currently available resources and programs that appropriately benefit patients and caregivers. Some of these programs were abruptly interrupted due to the COVID-19 pandemic; hence, the DNP student needed several modifications with the corresponding program managers. For example, the support group programs, which were personally administered face-to-face pre-pandemic, are now available via Zoom. With this project's implementation, clinicians can now connect the patients to the new way of attending support groups, old or newly implemented, like the COVID Support Group.

To guarantee the project’s sustainability, the DNP student will hand over the contents and management to unit-based contributors from different VA units/sites under the Patient Education Committee’s supervision and direction. In doing so, patient education and resource materials will be standardized across the continuum of care.

Gap Analysis

Current State. This DNP project plays a key part in the gap analysis of the facility’s strategic planning. By looking at the above issues utilizing a gap analysis, this project aligns itself with the facility’s strategic plan which is to be the best in quality and patient experience. This project could improve the facility’s quality measures in the following domains: 1) avoidable adverse events 2) adjusted length of stay and UM reviews, 3) access for the call-center speed in

responding calls and abandonment rate, 4) RN turnover and physician capacity, 5) PCMH care coordination and (6) patient experience. Additionally, this facility's lowest-ranking measure in the CAHPS survey was "communication with nurses" and "discharge plan."

Avoidable Adverse Events. Healthcare providers are the most trusted source of information about diseases such as community acquired- Methicillin-resistant Staphylococcus aureus or commonly known as MRSA (Brinsley-Rainisch, Cochran, Bush-Knapp, & Pearson, 2007). In support of this study, doctors remain the most frequently used source of medical information (Duren-Winfield et al., 2015); however, 7.6% of physicians prefer to inform patients with hospital-acquired infections (HAIs) only if they are at a high risk of infection (Bo, Ampino, Dalmasso, & Zotti, 2017). Consequently, nurses deliver verbal information about hospital-acquired infections. Study showed that almost all (97%) expressed improved perceived confidence in performing nursing care and increased knowledge of where to seek help if necessary, after an organized and systematic patient education program was implemented (DeLa Cruz, Caillouet, & Guerrero, 2012). This DNP's SharePoint project provided the clinicians a way of effective teamwork and communication in providing safe care because the materials are used across the continuum of care.

Adjusted Length of Stay and Utilization Management Reviews. This project provides a solution to the SAIL's adjusted length-of-stay domain. With this in mind, as the length of stay decreases; the chances of the patient feeling well enough to participate in educational sessions diminishes (DeMarco, & Schuster Nystrom, 2009). O'Leary et al. (2015) reported that nearly half (42%) would like to receive health information during hospitalization. To accommodate changes in health care practice, the nursing staff has to

take advantage of “optimal teachable moments,” engage family members as appropriate to the patient's preferences, and adapt their teaching accordingly (DeMarco & Schuster Nystrom, 2009).

Customization of the patient-education content could promote increased health literacy and strengthen the patient's adherence by implementing the appropriate self-care needs (Jacobs, Lou, Ownby, & Caballero, 2016). Identically, a pre-discharge education improves adherence to healthy lifestyle post-discharge for patients with ACS (Esha, 2013). Individualized education was vital because it customized the discharge planning to the patients' needs using a wide range of methods to enable staff in holistically assessing the patient's education needs leading to a smooth discharge (Rushton, Howard, Grant, & Astin, 2017). For individualized education to be successful in reducing anxiety and depression, the information needs to incorporate the patients and or significant others in healthcare decision-making. As a result of clinician’s straightforward access to frequently used health information via the SharePoint site, the utilization management reviews will be able to demonstrate a more efficient consumption of hospital resources and reduced risk to patients.

Access for the Call-center Speed in Responding Calls. Providing effective and applicable health education at the inpatient setting or at the clinic will lessen the use of the advice-nurse line. Study showed that many patients with ongoing needs are often not addressed during ED discharge (Rising, Hudgins, Reigle, Hollander, & Carr, 2016). These healthcare needs include ongoing uncertainty about the cause of their symptoms and what to expect, which triggers the feelings of fear. The advice-nurse line clinicians will have improved access to an interprofessional, systemwide, clinician-driven with the use of the

SharePoint site materials and can answer caller's healthcare and resource inquiry efficiently and timely because the site's materials are used across the continuum of care

RN turnover and physician capacity. The US is projected to experience a nursing shortage to the pre-recession work levels because of the rise in chronic care management, the Affordable Care Act, and the aging baby boomers (Snavely, 2016). To address the staffing shortages in an era of reform, health system leaders should understand that physician and nursing shortages threaten a hospital's ability to offer high-quality care (Sanford, 2013). One solution to keep the mature workers—who are stereotypically known to merely biding their time until retirement—is by engaging them to pass down their skills, experience, and resiliency to younger workers (Cohen-Callow, Hopkins, & Kim, 2009). This project provides an avenue for experienced nurses to slow down the RN turn-over rate by sharing their expertise and knowledge to the ones with less experience.

Care Coordination. This domain is based on the CAHPS survey, which measures patients' perception of providers' use of information to coordinate patient care. Higher activation relates to better health outcomes, which include improved clinical indicators, better health behaviors, and the increased use of preventive screening tests (Greene, Hibbard, Sacks, Overton, & Parrotta, 2015). Low activation levels in the ED population were significantly associated with hospital admission (Sheikh et al., 2016). Low health literacy rates increased with age (Sand-Jecklin, Daniels, & Lucke-Wold, 2017) and increased transitional care needs in hospitalized patients (Boyle et al., 2017). Patients at high risk of low health literacy had a higher number of co-morbid conditions and a significantly higher rate of 30-day re-hospitalizations. This project, which includes health education and resources, will help to tailor clinicians' discharge planning.

Patient Experience. As earlier stated, this domain is also based on the VA's own patient satisfaction survey or SHEP which is an adaptation of HCAHPS Survey, a national, standardized survey of hospitalized patients. This project can increase patient satisfaction. Nurses were able to improve their Hospital Consumer Assessment of Healthcare Providers and System (HCAHPS) score in a quality improvement project involving a consistent structure when conducting patient education (Cartwright, 2017). Similarly, the Engage2 project measured the use of the protocol questions against the HCAHPS scores (Davis, 2017). The project utilized the AHRQ universal precautions that ensure all patients have consistent and easy-to-understand access to information with their healthcare provider. In this project, the PCU nurses added two questions to ask each patient upon admission. These two questions covered the patient's knowledge of their diagnosis (assessing skills) and what they would like to know (assessing motivation). Utilizing this new process, the unit's HCAHPS scores showed a significant rise in the "Communication with Nurses" domain and significant jump in patient-reported satisfaction in the survey.

Prior to this project, the approach to providing information to veterans, particularly on patient education, uses hard copy located in the lobby or the hallway of each nursing unit, or clinicians may go online to find patient education websites embedded in other websites. For instance, if a patient needs to know about chronic obstructive pulmonary disease, the clinician may access the information from the hospital's online health library, which is unfortunately embedded among other hospital resources on the main hospital website. Additionally, not all information appropriate for patient health and educational literacy is available in the online health library. For example, if a patient needs to learn how to insert a Foley catheter, the skill set indicated in the online health library may not be appropriate to their health literacy level.

Similarly, suppose a clinician wants to safely and timely discharge a patient with tracheostomy and mechanical ventilation. In that case, the clinician needs to make his plan using a limited CPRS order set. The clinicians rely on these fragmented processes of providing health information and coordinating services in disparate places throughout the hospital. As a result, the information and resources provided are provider-specific and not standardized across the hospital system.

Steps Taken. To create a central location for the systemwide-used, evidenced-based, and frequently used clinician-driven patient education and resource information, the project plan was divided into three phases: Analyze, Act, and Anchor.

In the first phase, the DNP student needed to submit and complete the facility's VA Capstone Project Proposal (see appendix J). When the Chief Associate of the Office of Research and Development approved the project, the DNP student collaborated with her line-of-service Chief Nurse to select the project's nursing unit. The Intermediate Intensive Care Unit (IICU) was chosen for the project. The DNP student reached out to the unit's leadership and management for approval. The DNP student evaluated the clinicians' needs assessment in the unit by attending shift-change huddles and distributing the pre-implementation survey.

In the Act Phase, the DNP student closely worked with the Office of Information and Technology (OI&T) to create the SharePoint site database and link it to the clinicians' charting site, CPRS. After gathering and posting the information at the SharePoint site, the DNP student returned to the IICU to encourage staff to use the site by attending several shift-change huddles.

In the Anchor Phase, the DNP student distributed the post-implementation survey after 10 days of the SharePoint site going live. With the survey result, she presented it to the Patient Education Committee for system-wide dissemination of the project.

Since the project was implemented, the clinicians now have direct access to system-wide-used, evidence-based, and clinician-driven patient education and resource information that is frequently used. When a patient inquired about a Foley catheter's self-insertion, clinicians from different sites of the facility's healthcare system can now access the information via the patient's chart, linked to the SharePoint's Clinician Patient Education and Resource Information site. Similarly, suppose this patient called the primary care provider's office. In that case, the clinician in this office can provide the patient with the same information that an advice nurse, telehealth nurse, or even a primary nurse in the medical ward provides. Likewise, clinicians from the office or the acute care setting may order supplies and utilize resources effectively and promptly because the SharePoint site features information on coordinating and collaborating with other departments, including pharmacy and prosthetic departments. For instance, the clinicians can utilize the SharePoint site information on discharging a patient with tracheostomy and mechanical ventilation to collaborate with other clinicians efficiently. By knowing each clinician's role and technical expertise, the clinician leading the team can brainstorm barriers, facilitators, and recommendations to safely and effectively discharge the patient home.

Future State. The SharePoint site will continue to collaborate with the Office of Veteran Health Education and Information and the Office of Public Affairs. It will expand its contents by involving other inpatient, outpatient, rehab, and long-term care nursing units. In the future, the facility's documentation of providing patient education will be amended to include the SharePoint site's materials with its corresponding identifiable compilation number and review/renewal dates.

In the future, when the SharePoint site includes all nursing units' patient education and resource information materials, the DNP student would like to evaluate if the project influenced the facility's HCAP and SAIL metrics.

The Timeline

The project had several barriers and derailment. At the project's onset, there was an absence of a DNP practitioner who is a subject matter expert on patient education and VA resource information. In an email from the former Evidence-Based Practice (EBP) Director, she stated that this DNP student should have a corresponding DNP supervising practitioner (Denise Fillipucci, personal correspondence, January 19, 2020). The VA health education coordinator, who has the authority and the executive leadership capacity to pursue the project to its completion, agreed to be the clinical preceptor. It took two months before a DNP practitioner committed to be the clinical adviser. When it was agreed that a DNP practitioner with a different specialty would supervise this student, the COVID-19 pandemic came. All school projects at the VA teaching facility halted for two school semesters. When this project resumed in September, a significant change in EBP leadership with the Offices of Research and Innovation occurred, which derailed this project for another month. When the new EBP director approved the VA Capstone Project Proposal (see appendix B), the project finally started.

The Work Breakdown System

The project was divided into three major phases: the analysis, the act, and the anchor (see Appendix d). In the analysis phase, the DNP student collaborated with the service line chief nurse executive of Nursing and the Office of Patient Experience Director. She presented her project to the AFGE union president and other stakeholders in their field, such as in privacy policy, mental health, and clinic operations.

After all the stakeholders were informed of the project, the DNP student-organized and completed the chosen pilot unit's needs-assessment analysis. The needs-assessment analysis included the submission of pre-implementation surveys and several face-to-face meetings with the IICU nurses. The DNP student also attended daily huddle meetings with staff. She made the implementation survey available via hardcopy, which she posted in the nursing unit's huddle board or via the USF's Qualtrics' reusable link, which she emailed.

The second phase is the act or implementation phase, which resulted from the analysis phase. In this phase, the DNP student and her clinical preceptor reached out to the local SharePoint administrator to procure a dedicated SharePoint site for patient education and resource information for clinician collaboration. After site access was granted, the DNP student formatted and posted the aggregated patient education and resource information materials. She requested the Office of Information and Technology to link the SharePoint to the CPRS. Then, she directed the staff to visit the site either via the direct link in her email or via CPRS's dropdown menu in the Tool-tab. The DNP student discussed the unit's workflow with the assistant nurse to manage for smooth integration of the project with the clinicians.

The anchor phase is the evaluation of the project's sustainability. The DNP student distributed and collected the post-implementation survey via hardcopy or the USF's Qualtrics' reusable link. She achieved improved IICU staff participation when she attended the daily huddle and face-to-face meetings with IICU nurses.

For the project's sustainability, the DNP student will hand over the SharePoint site's contents and management to unit-based contributors from different VA units/sites under the Patient Education Committee's supervision and direction. This will allow the standardization of patient education and resource materials across the care continuum.

The Gantt Chart

The analysis or the assessment phase occurred for over five weeks as the DNP student collaborated with the key stakeholders. The needs-assessment analysis included the submission of pre-implementation surveys, and several face-to-face meetings with the IICU nurses happened daily in one week. That same week, the DNP student assessed and applied for an appropriate web page via the National Your-IT request page.

The second phase is the act or implementation phase, resulting from the analysis phase in the third week. In this phase, requested the Office of Information and Technology to link the SharePoint to the CPRS. Then, she directed the staff to visit the site via the direct link in her email or via CPRS's dropdown menu in the Tool-tab.

The anchor phase is the evaluation of the project's sustainability that occurred in the fourth week. This week, the DNP student distributed and collected the post-implementation survey via hardcopy or the USF's Qualtrics' reusable link.

The fifth and sixth week is for the project's sustainability wherein the DNP student presented the completed project to various leadership meetings and committees. She also endorses the management of the SharePoint site's contents and the management of the VHEC.

The Communication Matrix

To create this central location of frequently used patient education and VA resource information materials, the DNP student will have face-to-face and online meetings with various expert clinicians in the inpatient and outpatient settings. Due to the COVID 19 pandemic restriction, most of the communication happened online via Microsoft Team or email. The survey was completed via hardcopy and online.

The analysis phase had several face-to-face meetings with the IICU staff in order for the DNP student to immerse herself in the unit's workflow. The implementation phase was mainly completed electronically utilizing the Microsoft Team, email, and phone calls, while the anchoring phase was a mixture of online and face-to-face meetings.

The Budget and Funding

The cost is often the primary concern for a new project (DeMarco & Nystrom, 2009). Carefully assessing the justification for the purchase or lease of the web-based platform technology should include full disclosure of expenses. An annual service contract with the vendor is often the best way to stay informed with software updates and guaranteed timely technical support for the optimal performance of Microsoft's SharePoint. However, this project does not need to procure additional licensing as the facility has an existing contract with Microsoft.

Budgetary considerations and funding requirements for this project proved minimal for the following reasons. The VA's Office of Information and Technology (OI&T) department is a service department funded through the overhead dollar; hence, the capital dollars were negligible for this project due to the ability to use the existing OI&T architecture, Microsoft SharePoint, as the portal's platform.

Clinicians were assigned to work on a project in the course of their regular workday in addition to normal duties so they might accomplish better ratings in their annual performance evaluation. The primary cost to this project was in utilizing VHEC's staff time for maintaining the SharePoint site and continued PEP liaison training. However, due to the VA's organizational structure, all members approved to assist on this project were paid out of their home

departmental budgets. Since all labor hours on this project were considered routine work, the hours and associated dollars were not taken into consideration as an expense to the project.

The Cost Avoidance Analysis

As previously discussed, the organization is committed to its strategic plan, adding priority status to this project request. Equally important in the strategic plan is reducing both LOS and readmission rates. The cost-benefit projections were based on reducing both length of stay and readmissions because they increase the unnecessary cost to the local organization and to the taxpayers in general.

Unlike other US health care systems, the VA is different because it operates under a global budget and a low-income patient population that is more chronically ill than non-VA users (Carey & Stefos, 2016). Contrary to the popular belief, the VA is not healthcare insurance but a healthcare provider. It provides healthcare services to almost eight million enrollees. The VA system has 18.3 hospital beds per 10,000 enrollees and an inpatient daily census of 11 patients per 10,000 enrollees for an occupancy rate of 60% (Hussey et al., 2016).

Reducing LOS offers the first opportunity for cost avoidance. The daily cost of an inpatient stay at the VA medical ward costs $3,873 in 2018 (US Department of Veterans Affairs, Health Economics Resource Center (HERC), n.d.). These expenses persist when patients stay in the hospital as long as they continue to meet inpatient criteria. When patients no longer meet inpatient criteria, their stays are considered unpaid days and the expenses incurred to reduce the overall contribution margin. Meeting the inpatient criteria or not, a reduction in LOS by seven inpatient/days per week would determine a cost savings of $1.4 million annually. The facility can save over $4 million for seven preventable inpatient days in three years. In any event, an occupied or filled bed prohibits a new patient from being admitted (see Appendix F).

Reducing the hospital readmission rate presents the second opportunity for cost avoidance. Overall, the VA could save $2,140 for each averted 30-day readmission (Carey & Stefos, 2016). The expected cost of readmission for a patient with heart attack, heart failure and pneumonia are $3,432, $2,488 and $2,278 respectively. Conservatively, if the facility can prevent three preventable readmission inpatient days, the facility can save over $1 million in three years. For seven avoidable readmission inpatient days, the facility can save over $2.3 million in three years. This cost-benefit projection breakdown showed the opportunity for cost savings (see Appendix G).

The SWOT Analysis

Strengths. Autonomy promotes job satisfaction. Advanced practice registered nurses who are in an administrative and clinical position find that autonomy promotes job satisfaction (Han, Carter, & Champion, 2018). These clinical and organization facilitators will be the valor to increase the clinician-user involvement in creating access to an interprofessional, systemwide, clinician-driven education materials. Valorization of people is the theme that provides the strength and opportunity for the implementation of a project (Tavares Barbosa et al., 2017). Utilizing the expertise of experienced nurses, the project will be able to transform this change in practice into scientific material and future studies. Furthermore, these continuing education activities by the staff, in collaboration with the patients, will provide permanent and continuing education for the health professionals (see Appendix E).

Time constraints represent the most pervasive barrier to obtaining information (Aakre, Maggio, Fiol, & Cook, 2019). The strength of the portal is its prime location, which is embedded in the charting system. Because the clinicians already possessed the skills to navigate the CPRS, the time constraint, resource inaccessibility, indifferent personal attitudes and skills, and

unfamiliarity to institutional characteristics are curtailed. CPRS. For instance, since this project constitutes a clinician-driven site implanted inside CPRS, the clinicians do not need to close the CPRS completely to enter a website address of another site.

Weakness. A total of 40% of the federal, state, and local staff are either considering leaving their organizations in the next year or are retiring in 2020 (Leider, Harper, Shon, Sellers, & Castrucci, 2016). That said, the setting of the project, the VA, is not spared because of its fast staff turn-over and its effect on the strength of partisan politics in the interchange of experts in the periods of government exchange (Tavares Barbosa et al., 2017). After studying the Brazilian health system, the authors stated that the discontinuation of service or partisan politics contributes to both the weaknesses and the threats. The lack of continuity, when one does not maintain what was previously started, is both an internal and external factor in the weakness and threat sections of the SWOT matrix (see Appendix E).

Opportunities. This VA healthcare system has expanded facilities to include short- and long-term care facilities. This project has the possibility that this interprofessional collaboration portal will provide the consistency in patient education and resource material content across the continuum of care. McCormack, Thomas, Lewis, and Rudd (2017) support a social-ecological approach with a focus on health literacy and patient engagement. They proposed five levels of influence in which a patient can gather information to make informed decisions, namely individual, interpersonal, organization, community and macro. The researchers pointed out that there are five strategies to disseminate patient education, namely accumulation, amplification, facilitation, cascade and convergence strategy. The most influential is the convergence strategy or reciprocal interdependence which creates the best-informed healthcare consumer by reinforcing or repeating the information from different levels of influence. The healthcare-

assisted teaching tool can disseminate evidence-based patient education in most, if not all, levels of influence for the best possible outcome by utilizing the convergence strategy (see Appendix E).

Threat. There were four main patient education challenges, namely, decreased workflow efficiency, variability in how patients receive educational products, provider frustration, increased risk of not meeting meaningful use (MU) requirements for patient education, and financial impacts (Shipman, Lake, Van Der Volgen, & Doman, 2016). In addition to the aforementioned challenges, information-seeking clinicians at the point-of-care are influence by time, resource accessibility, personal attitudes and skills, institutional characteristics, and specific resource features (Aakre, Maggio, Fiol, & Cook, 2019).-Time spent in seeking clinical information and resources depends on the clinicians' personal skills and attitudes, institutional culture and policies, resource availability, and resource efficiency and familiarity as well as patients' clinical presentation at the point of care (see Appendix E).

The Ethical Consideration

The vision to improve the health literacy of the population stemmed from at least two provisions of care: enhance self-determination and better communication with healthcare providers. The American Nurses Association (ANA) Code of Ethics Provision 1.4 states that the right of self-determination asserts the nurses' responsibility to provide clear and comprehensible information to assist the healthcare consumer or patient to reach an informed decision (ANA, 2015). Furthermore, Provision 2.3 refers to collaboration wherein nurses must liaise with other healthcare members to secure needed information for the patient to make choices. Moreover, the project is also in alignment with the VA's Health Promotion and Disease Prevention Program

(HPDP) which aims to assist veterans to make lifestyle changes live longer and healthier by being actively involved in healthcare (US Department of Veterans Affairs, n.d.)

Equally important, to deter the widening gap between the information-haves and the information have-nots (Hesse et al., 2014), the health communication goal of Healthy People 2020 includes the objectives of encouraging the expanded use of health information technologies to achieve health equity. The project is in alignment with Healthy People 2020, principally, with the Health Communication and Health Information Technology (HC-HIT), which aims to improve population health outcomes and health care quality. With this intention, studies with comparable intervention showed that patients reported a better understanding of their medications (Winstanley et al., 2017) and higher overall satisfaction (Greysen et al., 2014). Together with the objective of Healthy People 2020, the project supports shared decision-making between patients and providers, assists in increasing health literacy skills and provides an evidence-based principle in the design of content that aims to result in healthier behavior. For this reason, the goal of this project is within the provision of HC-HIT, which supports personalized self-management tools and resources.

This project is in alignment with the University of San Francisco's social responsibility in achieving the mission to generate, disseminate and implement knowledge grounded on the Jesuit tradition to follow evidence-based findings to their culmination in application to change the world for the betterment of the future generations. As an agent of change, this project hopes to accomplish the challenge to strive for excellence which is one of the USF's Jesuit values (University of San Francisco, ND).

The project involves no more than minimal risk of harm to participants and does not involve procedures for which written consent is normally required outside the project context.

The US Department of Health and Human Services' Office of Human Research Protection defined minimal risk as *"the probability and magnitude of harm or discomfort anticipated in the research are not greater in and of themselves than those ordinarily encountered in daily life or during the performance of routine physical or psychological examinations or tests"* (45 Code of Federal Regulation [CFR] 46, page 128).

Correspondingly, the surveys will remain anonymous. The demographic traits associated with the anonymous surveys will be used solely to gain additional insight into the data breakouts by categories. The mail-back questionnaires or web-based surveys will have no tracking codes to identify the survey respondents. The survey respondents will not be identified, directly or through identifiers, or linked to this DNP project. Since the survey will possibly involve less than 1,000 VA employees and will involve multiple VA sites within the primary facility level, the DNP author will confer with the Organizational Assessment Sub-Committee (OASC) Review, National Union Notification, and local Human Resources office for screening and approval if needed. Additionally, the DNP student does not have a conflict of interest related to any project-sponsoring company, product or service and, in the case of human research, protection of human subjects. For these reasons, the DNP student will seek expedited appraisal to be exempt from the review of the local Institutional Review Board (IRB).

The Measures

This project was undertaken as an evidence-based change of practice project at a VA hospital and as such was not formally recognized by the Institutional Review Board. The DNP student immersed herself in the IICU setting by attending the unit's report or huddle every change of shift for almost two weeks. This allowed her to gain first-hand experience and assess

the resources clinicians often utilize for their patients' health information needs and the difficulties they face in obtaining appropriate patient education materials.

Surveys are the primary measure for studying the outcomes in the SharePoint site. The pre- and post-implementation surveys compared how frequently clinicians encountered situations in which patients and caregivers needed information and where the clinicians found the information they provided in these encounters. The next section was related to the timeliness and the degree of difficulty in aggregating this information. The third section was only available in the post-implementation survey. It was used to collect feedback because delivering clinicians' needs and priorities were necessary for this project. All surveys were available as hard copies on the unit's huddle board. Anonymous survey links and QR codes via USF's Qualtrics were also emailed and handed to each participant.

The data were analyzed using the Statistical Package for Social Sciences (SPSS, Version 25). The DNP student modified the selected statistical test analysis because the number of participants in the pre-and post-implementation surveys was unequal. Instead of the parametric t-test, the non-parametric Mann-Whitney test was utilized to analyze the project's outcome. This included timeliness and ease in accessing frequently used health information and project acceptance. The statistical significance level was <0.05, and the confidence interval was 95%. To describe the population, a descriptive statistic using mean and standard deviation (SD) was used for the continuous and dichotomous levels of measurements, while absolute (N) and relative (%) measurements were used with categorical variables.

The Analysis

Pre- and post-implementation surveys were deployed to examine the impact of the SharePoint site project and establish whether the observed outcomes were due to the

intervention. All survey participants in this project were IICU nurses. Some participants also acted as charge and/or resource nurses in their unit. However, due to the COVID-19 pandemic, there were drastic changes in staffing as many nurses are floating to other nursing units, such as the MSICU and ER. Thirty-nine participants responded to the pre-implementation survey, and 26 completed the post-implementation survey.

Data analysis was carried out using hardcopies and USF Qualtrics. The surveys were available to staff via hardcopy and used reusable, non-identifiable USF Qualtrics links, as well as QR codes. This author entered the hardcopy to USF Qualtrics. The Descriptive Statistics, using mean and standard deviation (SD), were used for the continuous and dichotomous level of measurements while absolute (N) and relative (%) were used with categorical variables.

Since there was no prior study in the VA with the IICU staff regarding the clinicians' access to patient education and VA resource information, this DNP author designed a pre-and post-implementation survey to assess the gap in practice, the impact of the intervention, and if the observed outcomes were due to the intervention.

The pre-implementation survey included a question on the frequency of encounters and their information source when clinicians were asked about the following patient education themes: diagnosis, nursing tasks, medications, and VA resources. The education theme of diagnosis includes inquiry on illness and disease, while nursing tasks include, but are not limited to, self-insertion of foley catheter and wound/surgical drain care and management. The education theme for medication includes, but is not limited to, the use of inhalers and nebulizers, while VA resources include transportation, community programs, and medication refills. Based on these education themes, the clinicians were further asked about the timeliness and ease of finding information regarding reliable systemwide, evidence-based patient education.

Ten days after the SharePoint site was implemented, the post-implementation survey was initiated. This time, the survey added the participants' perception of information-seeking and information-sharing behaviors.

The Result

There were unequal numbers of participants in the pre-implementation survey and in post-implementation. As part of the project's needs assessment, the survey started with the question of how often the clinicians encountered a patient or caregiver asking about the following education themes: diagnosis, nursing tasks, medication, and resources (see Appendix H.1). The participants were divided into two categories: those who were asked two times a week or less, and those who were asked three times a week or more often. In the group that was never or seldom (less than twice a week) asked about patient education and resource information, the most common (47%–69%) questions were about VA resource information. In contrast, the education theme that was least asked about involved diagnosis, illness, and disease. For the group that was often (three to four times a week) to always (greater than five times a week) asked about patient education and resource information, the most common (62%–72%) questions were about diagnosis, illness, and disease, while the education theme least asked about was the VA resource.

The participants were asked the frequency and source of information used in providing patient education, considering the patient and caregivers' level of understanding (see Appendix H.). In terms of using online sources, most (61.54%) of the participants never used online textbooks to provide patient education and resource information, while 36% to 37% did. The participants seldom used a website to provide patient education and resource information. A little over 46% of the participants never to seldom used the VA online library to provide patient

education and resource information, while the majority (57–76%) of the IICU staff surveyed never used MyhealtheVet to provide patient education and resource information.

In terms of using hardcopy materials, most (57%) of the IICU staff surveyed state that they seldom use nursing or medical books to provide patient education and resource information. In comparison, 44% to 50% of the participants never used non-VA issued journals and brochures to provide patient education and resource information.

In terms of people and relationships, a little over 40% (40-42%) of IICU staff who participated in the survey stated that they often seek information for patient education and resources from their co-workers while 32-38% said that they rely on their own healthcare provider. Most of the participants (55.88% to 68%) do not rely on their family and friends for patient education and resource information.

In the frequency and source of information section, the survey showed that the staff never uses MyhealtheVet and family/friends. They seldom use non-VA academic journals and online books, while they often use coworkers as information sources. Lastly, they always utilize the internet as a source of information.

The length of time it took for clinicians to find information on the four education themes was divided into four categories: less than five minutes, from six minutes to an hour, greater than one hour, and the ones who "never found any" (see Appendix H.3). Results for the ones who could find information in less than five minutes showed that 15% more staff could now find medication information and almost 20% more staff could now find information on VA resources in the SharePoint site. Almost an equal percentage of staff could find the information on nursing tasks in this category, while fewer staff members (from 40% to 29%) found information on the diagnosis.

For the ones who could find information within six minutes to an hour, the result showed that a lower percentage of staff could find information about nursing tasks (from 45.71% to 41.6%), medication (31.43% to 25%), and VA resources (from 64.71% to 62.5%). However, there was an increase in the percentage of staff finding a diagnosis (from 48.5% to 59.33%).

For the ones who can find information in more than 1 hour, the result showed there was less percentage of staff who can find information about the diagnosis (from 11.43% to 8.33%); however, there is remarkably less percentage of staff who can find information about resources (23.53% to 4.17%). There was almost a 7% increase in the percentage of staff who found information on nursing tasks (from 5.71% to 12.5%).

For the ones who cannot find any information, the result was that there was less percentage of staff who can find information about the nursing task (from 5.71% to 4.17%) and medication (from 14.29% to 4.17%). As stated earlier, the ICU staff clamored for a discharge coordination inquiry in the survey that needed timely resolution. This project provided the solution to this complex discharge coordination, which involves discharging a patient with a new tracheostomy and artificial ventilator machine. Based on the DNP student's experience in collaborating with the non-VA respiratory home medical equipment supplier, team pharmacist, respiratory therapist, and nursing, she created a roadmap of the essential requirements for timely and safe patient discharge. During the pandemic, she worked closely with the respiratory therapy educator to ensure the procedure was current.

Regarding the ease or difficulty of finding appropriate patient education and reliable resource information on the education themes mentioned earlier, the selection was divided into four categories: very easy, slightly easy, slightly difficult, and very difficult. These four categories were finally divided into two categories: easy and difficult (see Appendix H.4). The

results showed that a greater percentage of staff members say that it is easier to find information on diagnoses (from 77% to 79%), medication (from 72% to 75%), and resources (from 35% to 54%) in the SharePoint site.

The results also showed that a smaller percentage of staff members say that it is now less difficult to find information on diagnoses (from 23% to 21%), medication (from 28% to 25%), and VA resources (from 59% to 49%) in the SharePoint site.

Overall, the results showed that more staff members say they find it easy now with SharePoint to find systemwide patient education and resource information. However, the results also showed that many staff members still reported that they find it difficult to find systemwide patient education and resource information (see Appendix H.5).

In order of importance, the survey participants list information about diagnosis and nursing tasks as the most important data when using the SharePoint site, followed closely by information about medication. Information about VA resources was ranked as the least important by the survey participants probably because they source out this role to either the charge nurse or the case manager (see Appendix H.6).

As far as the participants' information-sharing behavior is concerned, they will likely use the project. They will very likely share the information regarding diagnosis (76%), nursing tasks (80%), medication (76%), and resources (32%) with patients/caregivers and, if needed, with coworkers (see Appendix H.7).

The Interpretative Analysis

The aim of this study was to create a SharePoint site to improve access to patient education and resource information. The project goal was to provide the clinicians with timely

and easy access to evidenced-based, systemwide-used, and clinician-driven patient education and resource information.

Table 1 displays the Mann-Whitney test comparisons for times per week that patients and caregivers needed information on selected topics based on time period. These ratings were based on a 4-point metric: 1 = *Never* to 4 = *Always*. One of the four topics was significantly different between the pretest and posttest. Specifically, diagnosis/disease/illness was needed less often at posttest than it was at pretest (p = .02; see Table 1).

Table 2 displays the Mann-Whitney test comparisons for the usage of patient education and resource information by time period. These ratings were based on a 4-point metric: 1 = *Never* to 4 = *Always*. Three of the nine resources were used significantly less often at the posttest. Specifically, books (online library) (p = .03), own healthcare providers (p = .006), and non-VA academic journals (p = .009) were used significantly less often (see Table 2).

Table 3 displays the Mann-Whitney test comparisons for the length of time to find appropriate patient education and reliable resources based on time period. Inspection of the table found one of the four comparisons to be significant. Specifically, VA resources were found more quickly at posttest (p = .04; see Table 3).

Table 4 displays the Mann-Whitney test comparisons for the level of the difficulty to find appropriate patient education and reliable resource information based on time period. Inspection of the table found none of the four comparisons to be significantly different at the p <.05 level (see Table 4).

Table 5 displays the chi-square test for difficulty finding systemwide patient education based on time period. The level of difficulty was lower at posttest compared to pretest (p = .02).

Inspection of the table found 27.3% of the posttest nurses to rate the difficulty level as “easy” as compared to 3.1% of the nurses at pretest (see Table 5).

Table 6 displays the descriptive statistics for the importance of SharePoint topic sorted by ascending means. This comparison of this analysis was based on post-test data only. These importance ratings were rated on a 4-point metric: 1 = *Most Important* to 4 = *Least Important*. Most important was the diagnosis, disease, illness (*M* = 1.73) while the least important was VA resources (*M* = 3.36; see Table 6).

Table 7 displays the descriptive statistics for the likelihood of using the SharePoint site sorted by descending means. This comparison of this analysis was based on post-test data only. These likelihood ratings were based on a 4-point metric: 1 = *Very Unlikely* to 4 = *Very Likely*. The highest likelihood was a nursing task (*M* = 2.83) while the least likelihood was medication (*M* = 2.71; see Table 7).

Handling Missing Data. A total of 66 sets of ratings were given between pretest and posttest. Due to anonymity, it is unknown to what extent the posttest ratings were given by nurses who also gave pretest ratings. A number of missing answers were calculated for each set of ratings. The number of missing answers ranged from 0 to 22 missing answers. A decision was made to keep those ratings that had either zero missing (*n* = 39), one missing answer (*n* = 14), or two missing answers (*n* = 4) leaving the final sample to be *N* = 57. Missing answers were estimated/imputed using the median value for the entire sample. The median value was used instead of the grand mean because the rating scales had only four points, so the median was used to provide an estimate that was a whole number rather than a decimal.

Summary

Patient education across the continuum of care is costly because it is labor-intensive and time-consuming. The creation of a SharePoint site improved access to patient education and resource information. The project provided the clinicians with timely and easily accessible evidence-based, system-wide, and clinician-driven patient education and resource information.

With the SharePoint site's existence, the usage of the following resources decreased: online library, own healthcare provider, and non-VA academic journals. VA resources were found more quickly at posttest. The level of difficulty in aggregating information was lower at the posttest. More information on diagnoses, diseases, and illnesses was the participants' top priority in using the SharePoint site. The clinicians were most likely to share the information on the nursing task with patients and co-workers.

The level of difficulty in aggregating patient education decreased with the use of the SharePoint site. Clinicians say it is easier to find information on diagnoses, medication, and resources on the SharePoint site. Having the SharePoint site accessible through the widely used CPRS contributed to the clinicians' timely and easy access to information. Clinicians are now immediately connected to information related to patient education and VA resources without shifting from one website to another.

Using this SharePoint site, IICU nurses could provide patient education and resource information that is evidence-based and used across the care continuum. With this in mind, clinicians may increase patients' understanding of the information provided to them regardless of the latter group's health literacy level and geographical location. New possibilities emerged from this project, including a better communication strategy in streamlining patient education and resource information across the continuum of care. During this COVID-19 pandemic, some

volunteer programs and all support groups were halted. When these programs and support groups restarted through Zoom meetings and video visits, the SharePoint site immediately posted whom the clinicians can contact to rejoin the group or even start going to new ones like the COVID-19 support groups. This project offered an avenue to avoid the pitfall of information silos and reap the benefits of information sharing between inpatient and outpatient settings. The SharePoint site decreases the social and professional isolation for clinicians, especially those working in community-based outpatient clinics.

Interpretation

Compared to another study, this project confirms that even health-literate patients may struggle with locating the health information they need (Miller, Intrator, Gadbois, Gidmark, & Rudolph, 2019). The participants always use an online internet search for patient education, which supports the findings from another study that the hospital clinical staff in a large healthcare organization prefers Google among electronic resources (Hider, Griffin, Walker, & Coughlan, 2009).

The DNP student anticipated that there would be fewer staff members who would continue utilizing Google, but the behavior persisted even with the presence of the SharePoint site. The possible reason could be that there is a limited number of topics posted on the SharePoint site, as it was only newly created. The DNP student anticipated that she would hand over the contents and management to unit-based contributors; however, the VA's Office of Public Affairs, as well as the Office Patient Education and Resource Information, decided that the DNP student should continue to carry out the management of SharePoint contents. In doing so, patient education and resource materials will be current and standardized across the continuum of care.

This project's findings supported the Diffusion of Innovation (DOI) theoretical framework. The charge and resource nurses were the early adopters. Most of the participants are the DOI's early majority and late majority. There should be more involvement of clinical and organizational facilitators to sustain and spread this new level of performance in patient education. However, the unit's structure was drastically changed to accommodate the current pandemic's need.

Several studies have been done on patient portals for patients, but only a few have been studied on the clinicians' side. Future professional and staff development should focus on clinicians' behavior in seeking, finding, and sharing health information with patients and co-workers alike. The nursing implication in future research is warranted to determine the tangible impact of clinicians' roles in providing patient education and resource information—which, as this project showed, often evolved into the ever-changing healthcare system. Future research should include homogenous ways of defining the quality of how clinicians provide this information and how patients benefit from the information. More importantly, the project's sustainability depends on the healthcare system's business model and the leadership's cooperation in adopting the project as an avenue for increasing health literacy and patient engagement. Therefore, the institution's policymakers and healthcare legislators at the national level should prepare the legislative process to support the implementation and cost consideration of a comprehensive patient education and resource information program.

Limitations

This project has several limitations and time constraints that greatly impacted each of them. For instance, the project could not monitor if it affects the facility's strategic plan in terms of quality and patient experience for the Fiscal Year 2020. Because the effect in SAIL and

HCAPS ranking will take months, or probably years of collected data, this project did not evaluate them. Moreover, the project cannot examine the long-term effect of patients' satisfaction scores in HCAPS and the facility's efficiency ratings in SAIL metrics.

Time restriction inhibited the project in acquiring patients' perspectives on the new delivery of health education in three main areas: 1) the place where healthcare is provided, 2) the people who provide health education, and 3) the health information that is consistent across the continuum of care.

Another limitation is the financial and budgetary implications on staffing and technical resources. Resource limitations have a significant consequence because there is no dedicated clinician to consistently oversee and implement the project plan for the entire healthcare system. Thus, time constraints and lack of available clinicians during the implementation phase hindered this project's parallel process in the outpatient department.

Overall, time constraints limited this project from having an in-depth consideration of the complicated relationship between healthcare barriers, social determinants, and patient/caregiver belief. The measurement of whether this project improves engagement, shared decision-making, self-management skills, adherence to treatment plans and quality of life remains to be addressed. It is beyond the scope of this project, but it could be fruitfully examined in the future.

Conclusions

On a small scale, the creation of a SharePoint site addressed clinicians' need for timely and easily accessible evidence-based patient education and resource information across the care continuum. In doing so, clinicians developed the ability to potentially impact patients' understanding of their care at the hospital and of the information they need to fully recover at home. On a larger scale, patients could reap the benefits of enhanced self-management of a

health condition, which may offer improved cost-saving options to the entire healthcare system. Ultimately, this project could reduce healthcare costs by reducing both avoidable hospitalization length of stay and preventable hospital readmission.

References

Aakre, C. A., Maggio, L. A., Fiol, G. D., & Cook, D. A. (2019). Barriers and facilitators to clinical information seeking: a systematic review. *J Am Med Inform Assoc, 26*(10), 1129-1140. Doi:10.1093/jamia/ocz065

Agency for Healthcare Research and Quality (n.d.) *Health literacy measurement tool* (Revised). Fact Sheet. Accessed on July 7, 2018 at https://www.ahrq.gov/professionals/quality-patient-safety/quality-resources/tools/literacy/index.html

Ahmad, F. S., Barg, F. K., Bowles, K. H., Alexander, M., Goldberg, L. R., French, B., … Kimmel, S. E. (2016). Comparing Perspectives of Patients, Caregivers, and Clinicians on Heart Failure Management. *Journal of Cardiac Failure,* 22(3), 210–217. https://doi.org/10.1016/j.cardfail.2015.10.011

Ahadzadeh, A. S., Pahlevan Sharif, S., Ong, F. S., & Khong, K. W. (2015). Integrating health belief model and technology acceptance model: an investigation of health-related internet use. *J Med Internet Res,* 17(2), e45. doi:10.2196/jmir.3564

Albert, N. M., Cohen, B., Liu, X., Best, C. H., Aspinwall, L., & Pratt, L. (2015). Hospital nurses' comfort in and frequency of delivering heart failure self-care education. *European Journal of Cardiovascular Nursing*, 14(5), 431-440. doi:10.1177/1474515114540756

American Nurses Association (2015). *Code of ethics for nurses with interpretive statements.* Washington, DC: Author

Anderson, K. M. (2014). Discharge clinical characteristics and 60-day readmission in patients hospitalized with heart failure. *Journal of Cardiovascular Nursing,* 29(3), 232-241. doi:10.1097/JCN.0b013e31828f0d25

Atkins, D., Kilbourne, A. M., & Shulkin, D. (2017). Moving from discovery to system-wide change: the role of research in a learning health care system: experience from three decades of health systems research in the Veterans Health Administration. *Annual Review of Public Health,* 38467. Doi:10.1146/annurev-publhealth-031816-044255

Beatty, C. R., Flynn, L. A., & Costello, T. J. (2017). The Impact of Health Literacy Level on Inhaler Technique in Patients with Chronic Obstructive Pulmonary Disease. *Journal of Pharmacy Practice,* 30(1), 25-30. doi:10.1177/0897190015585759

Bo, M., Amprino, V., Dalmasso, P., & Zotti, C. M. (2017). Delivery of written and verbal information on healthcare-associated infections to patients: opinions and attitudes of a sample of healthcare workers. *BMC Health Services Research,* 17, 1–7. https://doi.org/10.1186/s12913-017-2021-x

Boyle, J., Speroff, T., Worley, K., Cao, A., Goggins, K., Dittus, R. S., & Kripalani, S. (2017). Low Health Literacy is associated with increased transitional care needs in hospitalized patients. *J Hosp Med*, 12(11), 918-924. doi:10.12788/jhm.2841

Beatty, C. R., Flynn, L. A., & Costello, T. J. (2017). The Impact of Health Literacy Level on Inhaler Technique in Patients With Chronic Obstructive Pulmonary Disease. *Journal of Pharmacy Practice,* 30(1), 25-30. doi:10.1177/0897190015585759

Brinsley-Rainisch KJ, Cochran RL, Bush-Knapp ME, & Pearson ML. (2007). The general public's awareness, knowledge, and perceptions of "staph" – with a focus on community-associated methicillin-resistant Staphylococcus aureus. *American Journal of Infection Control, 35*(6), 425–426. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=106159320&site=ehost-live

Carey, K., & Stefos, T. (2016). The cost of hospital readmissions: evidence from the VA. *Health Care Management Science,* 19(3), 241–248. https://doi.org/10.1007/s10729-014-9316-9

Cartwright, K. (2017). How consistency in practice improved patient and staff satisfaction. *Nursing,* 47(11), 15-18. Doi:10.1097/01.NURSE.0000526002.97473.07

Clark, B. (2011). Using law to fight silent epidemic: The role of healthy literacy in health care access, quality cost. *Annals of Health Law,* 20(2), 253-328.

Cohen-Callow, A., Hopkins, K., & Kim, H. (2009). Retaining workers approaching retirement: why child welfare needs to pay attention to the aging workforce. *Child Welfare,* 88(5), 209-228.

Cox, S. R., Liebl, M. G., McComb, M. N., Chau, J. Q., Wilson, A. A., Achi, M., . . . Wallace, D. (2017). Association between health literacy and 30-day healthcare use after hospital discharge in the heart failure population. *Res Social Adm Pharm,* 13(4), 754-758. doi:10.1016/j.sapharm.2016.09.003

Creber, R. M. M., Grossman, L. V., Ryan, B., Qian, M., Polubriaginof, F. C. G., Restaino, S., . . . Masterson Creber, R. M. (2019). Engaging hospitalized patients with personalized health information: a randomized trial of an inpatient portal. *Journal of the American Medical Informatics Association,* 26(2), 115-123. doi:10.1093/jamia/ocy146

Davis, J. (2017). Engage2: implementing a health literacy protocol for patient assessment and engagement. *Journal of Consumer Health on The Internet,* 21(4), 338-349. Doi:10.1080/15398285.2017.1361278

DeLa Cruz, R. F., Caillouet, B., & Guerrero, S. S. (2012). Strategic patient education program to prevent catheter-related bloodstream infection. *Clin J Oncol Nurs,* 16(1), E12-17. Doi:10.1188/12.CJON.E12-E17

Del Fiol, G., Workman, T. E., & Gorman, P. N. (2014). Clinical questions raised by clinicians at the point of care: a systematic review. *JAMA Intern Med, 174*(5), 710-718. Doi:10.1001/jamainternmed.2014.368

DeMarco, J., & Nystrom, M. S. (2009). Expanding education technology to meet the needs of patients, families, and clinicians. *Health Promotion Practice,* 10(1), 15–23. https://doi.org/10.1177/1524839908329138

Doyle, J. M., & Streeter, R. A. (2017). Veterans' location in health professional shortage areas: implications for access to care and workforce supply. *Health Serv Res,* 52 Suppl 1, 459-480. doi:10.1111/1475-6773.12633

Duren-Winfield, V., Onsomu, E. O., Case, D. L., Pignone, M., Miller Jr, D., & Miller, D., Jr. (2015). Health literacy and computer-assisted instruction: usability and patient preference. *Journal of Health Communication*, 20(4), 491–498. https://doi.org/10.1080/10810730.2014.976322

Eibner, C., Krull, H., Brown, K. M., Cefalu, M., Mulcahy, A. W., Pollard, M., . . . Farmer, C. M. (2016). Current and projected characteristics and unique health care needs of the patient population served by the Department of Veterans Affairs. *Rand Health Quarterly*, 5(4), 13.

Easton, P., Entwistle, V. A., & Williams, B. (2013). How the stigma of low literacy can impair patient-professional spoken interactions and affect health: insights from a qualitative investigation. *BMC Health Services Research,* (1), doi:10.1186/1472-6963-13-319

Eshah, N. F. (2013). Predischarge education improves adherence to a healthy lifestyle among Jordanian patients with acute coronary syndrome. *Nurs Health Sci,* 15(3), 273-279. doi:10.1111/nhs.12018

Friis, K., Lasgaard, M., Rowlands, G., Osborne, R. H., & Maindal, H. T. (2016). Health Literacy Mediates the Relationship Between Educational Attainment and Health Behavior: A Danish Population-Based Study. *Journal of Health Communication, 21*, 54-60. doi:10.1080/10810730.2016.1201175

Gilotra, N. A., Shpigel, A., Okwuosa, I. S., Tamrat, R., Flowers, D., & Russell, S. D. (2017). Patients commonly believe their heart failure hospitalizations are preventable and identify worsening heart failure, nonadherence, and a knowledge gap as reasons for admission. *Journal of Cardiac Failure,* 23(3), 252–256. https://doi.org/10.1016/j.cardfail.2016.09.024

Glanz, K., Rimer, B. K., & Viswanath, K. (2015). *Health behavior: theory, research, and practice* (Fifth edition. ed.). San Francisco, CA: Jossey-Bass.

Greco, A., Steca, P., Pozzi, R., Monzani, D., Malfatto, G., & Parati, G. (2015). The influence of illness severity on health satisfaction in patients with cardiovascular disease: the mediating role of illness perception and self-efficacy beliefs. *Behavioral Medicine*, 41(1), 9-17. Doi:10.1080/08964289.2013.855159

Greene, J., Hibbard, J. H., Sacks, R., Overton, V., & Parrotta, C. D. (2015). When patient activation levels change, health outcomes and costs change, too. *Health Affairs* (Project Hope), (3), 431. https://doi.org/10.1377/hlthaff.2014.0452

Greysen, S.R., Khanna, R.R., Jacolbia, R., Lee, H.M., & Auerbach, A.D. (2014). Tablet computers for hospitalized patients: a pilot study to improve inpatient engagement. *Journal of Hospital Medicine* – Wiley Online Library. Doi:10.1002/jhm.2169

Gruman, J., Rovner, M. H., French, M. E., Jeffress, D., Sofaer, S., Shaller, D., & Prager, D. J. (2010). From patient education to patient engagement: implications for the field of patient education. *Patient Educ Couns, 78*(3), 350-356. doi:10.1016/j.pec.2010.02.002

Han, R. M., Carter, P., & Champion, J. D. (2018). Relationships among factors affecting advanced practice registered nurses' job satisfaction and intent to leave: A systematic review. *Journal Of The American Association Of Nurse Practitioners*, 30(2), 101-113. doi:10.1097/JXX.0000000000000006

Haun, J., Luther, S., Dodd, V., & Donaldson, P. (2012). Measurement variation across health literacy assessments: implications for assessment selection in research and practice. J *Health Community*, 17 Suppl 3, 141-159. Doi:10.1080/10810730.2012.712615

Healthy People 2020. (2018). *Healthy People 2020.* Retrieved from https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=4512

Hesse, B. W., Gaysynsky, A., Ottenbacher, A., Moser, R. P., Blake, K. D., Chou, W.-Y. S., . . . Beckjord, E. (2014). Meeting the healthy people 2020 goals: using the Health Information National Trends Survey to monitor progress on health communication objectives. *Journal of Health Communication, 19*(12), 1497-1509. doi:10.1080/10810730.2014.954084

Hussey, P. S., Ringel, J. S., Ahluwalia, S., Price, R. A., Buttorff, C., Concannon, T. W., ... Farmer, C. M. (2016). Resources and capabilities of the Department of Veterans Affairs to provide timely and accessible care to veterans. *Rand Health Quarterly*, 5(4), 14.

Jacobs, R. J., Lou, J. Q., Ownby, R. L., & Caballero, J. (2016). A systematic review of eHealth interventions to improve health literacy. *Health Informatics Journal*, 22(2), 81-98. Doi:10.1177/1460458214534092

Keulers, B. J., Welters, C. F., Spauwen, P. H., & Houpt, P. (2007). Can face-to-face patient education be replaced by computer-based patient education? A randomized trial. *Patient Educ Couns,* 67(1-2), 176-182. Doi:10.1016/j.pec.2007.03.012

Kim, J. J., Mohammad, R. A., Coley, K. C., & Donihi, A. C. (2015). Use of an iPad to provide warfarin video education to hospitalized patients. *J Patient Saf,* 11(3), 160-165. doi:10.1097/PTS.0000000000000062

Leider, J. P., Harper, E., Shon, J. W., Sellers, K., & Castrucci, B. C. (2016). Job satisfaction and expected turnover among federal, state, and local public health practitioners. American *Journal Of Public Health,* 106(10), 1782-1788.

Liang, B. A. (2001). The adverse event of unaddressed medical error: identifying and filling the holes in the health-care and legal systems. *J Law Med Ethics,* 29(3-4), 346-368.

Liang, C.-Y., Wang, K.-Y., Hwang, S.-J., Lin, K.-C., & Pan, H.-H. (2013). Factors affecting the physician–patient relationship of older veterans with inadequate health literacy: an observational study. *British Journal of General Practice.* doi:10.3399/bjgp13X667222

Lopez-Olivo, M. A., Ingleshwar, A., Volk, R. J., Jibaja-Weiss, M., Barbo, A., Saag, K., . . . Suarez-Almazor, M. E. (2018). Development and pilot testing of multimedia patient education tools for patients with knee osteoarthritis, osteoporosis, and rheumatoid arthritis. *Arthritis Care Res* (Hoboken), 70(2), 213-220. Doi:10.1002/acr.23271

Majid, N., Lee, S., & Plummer, V. (2015). The effectiveness of orthopedic patient education in improving patient outcomes: a systematic review protocol. *JBI Database System Rev Implement Rep,* 13(1), 122-133. Doi:10.11124/jbisrir-2015-1950

Matsuoka, S., Tsuchihashi-Makaya, M., Kayane, T., Yamada, M., Wakabayashi, R., Kato, N. P., & Yazawa, M. (2016). Health literacy is independently associated with self-care behavior

in patients with heart failure. *Patient Education & Counseling,* 99(6), 1026–1032. https://doi.org/10.1016/j.pec.2016.01.003

McCormack, L., Thomas, V., Lewis, M. A., & Rudd, R. (2017). Improving low health literacy and patient engagement: A social ecological approach. *Patient Education and Counseling,* 100(1), 8-13. Doi:10.1016/j.pec.2016.07.007

Menichetti, J., Graffigna, G., & Steinsbekk, A. (2018). What are the contents of patient engagement interventions for older adults? A systematic review of randomized controlled trials. *Patient Educ Couns,* 101(6), 995-1005. doi:10.1016/j.pec.2017.12.009

Miller, E. A., Intrator, O., Gadbois, E., Gidmark, S., & Rudolph, J. L. (2019). VA Staff Perceptions of Barriers and Facilitators to Home-and Community-Based Placement Post-Hospital Discharge. *J Aging Soc Policy,* 31(1), 1-29. doi:10.1080/08959420.2018.1444889

Miller, T. A. (2016). Health literacy and adherence to medical treatment in chronic and acute illness: A meta-analysis. *Patient Educ Couns,* 99(7), 1079-1086. Doi:10.1016/j.pec.2016.01.020

Mitchell, S. E., Sadikova, E., Jack, B. W., & Paasche-Orlow, M. K. (2012). Health literacy and 30-day postdischarge hospital utilization. *Journal of Health Communication,* 17325-338. Doi:10.1080/10810730.2012.715233

Mulhall, A. M., Zafar, M. A., Record, S., Channell, H., & Panos, R. J. (2017). A tablet-based multimedia education tool improves provider and subject knowledge of inhaler use techniques. *Respiratory Care,* 62(2), 163-171. Doi:10.4187/respcare.05008

Nurhayati, N., Songwathana, P., & Vachprasit, R. (2018). Surgical patients' experiences of readiness for hospital discharge and perceived quality of discharge teaching in acute care hospitals. *J Clin Nurs.* Doi:10.1111/jocn.14764

Office of Disease Prevention and Health Promotion. (n.d.) *Healthy People 2020.* Retrieved on July 24, 2018 from https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=4512

O'Hanlon, C., Huang, C., Sloss, E., Anhang Price, R., Hussey, P., Farmer, C., & Gidengil, C. (2017). Comparing VA and Non-VA quality of care: a systematic review. *J Gen Intern Med*, 32(1), 105-121. doi:10.1007/s11606-016-3775-2

O'Leary, K. J., Balabanova, A., Patyk, M., Barnard, C., Liebovitz, D. M., & Williams, M. V. (2015). Medical inpatients' use of information technology: Characterizing the Potential to Share Information Electronically. *J Healthc Qual*, 37(4), 207-220. Doi:10.1111/jhq.12043

Panagioti, M., Skevington, S. M., Hann, M., Howells, K., Blakemore, A., Reeves, D., & Bower, P. (2018). Effect of health literacy on the quality of life of older patients with long-term conditions: a large cohort study in UK general practice. *Quality of Life Research, 27*(5), 1257-1268. doi:10.1007/s11136-017-1775-2

Pirhonen, A., Silvennoinen, M., & Sillence, E. (2014). Patient education as an information system, healthcare tool and interaction. *Journal of Information Systems Education.* Late Fall2014, 25(4), 327. Accessed on July 1, 2018 at EBSCOhost, 0-search.ebscohost.com.ignacio.usfca.edu/login.aspx?direct=true&db=bth&AN=109083789&site=eds- live&scope=site.

Prey, J. E., Woollen, J., Wilcox, L., Sackeim, A. D., Hripcsak, G., Bakken, S., . . . Vawdrey, D. K. (2014). Patient engagement in the inpatient setting: a systematic review. *J Am Med Inform Assoc*, 21(4), 742-750. Doi:10.1136/amiajnl-2013-002141

Rathert, C., Mittler, J. N., Banerjee, S., & McDaniel, J. (2017). Patient-centered communication in the era of electronic health records: What does the evidence say? *Patient Education and Counseling,* 100(1), 50-64. Doi:https://doi.org/10.1016/j.pec.2016.07.031

Rising, K. L., Hudgins, A., Reigle, M., Hollander, J. E., & Carr, B. G. (2016). "I'm just a patient": fear and uncertainty as drivers of emergency department use in patients with chronic disease. *Annals of Emergency Medicine,* 68(5), 536–543. https://doi.org/10.1016/j.annemergmed.2016.03.053

Rowe, A. &Hogarth, A. (2005). Use of complex adaptive systems metaphor to achieve professional and organizational change. *Journal of Advanced Nursing,* 51: 396-405. doi:10.1111/j.1365-2648.2005.03510.x

Rushton, M., Howarth, M., Grant, M. J., & Astin, F. (2017). Person-centred discharge education following coronary artery bypass graft: A critical review. *J Clin Nurs, 26*(23-24), 5206-5215. doi:10.1111/jocn.14071

Sand-Jecklin, K., Daniels, C. S., & Lucke-Wold, N. (2017). Incorporating health literacy screening into patients' health assessment. *Clinical Nursing Research,* 26(2), 176–190. https://doi.org/10.1177/1054773815619592

Sanford, K. D. (2013). Addressing staffing shortages in an era of reform. Hfm (Healthcare Financial Management), 67(12), 42-45. Sharkey, T. (2015). Health literacy tools for the veteran population. *Journal of Consumer Health on The Internet,* 19(1), 52-60. Doi:10.1080/15398285.2014.982052

Shipman, J. P., Lake, E. W., Van Der Volgen, J., & Doman, D. (2016). Provider documentation of patient education: a lean investigation. *J Med Libr Assoc*, 104(2), 154-158. doi:10.3163/1536-5050.104.2.012

Snavely, T. M. (2016). Data Watch. A Brief Economic Analysis of the Looming Nursing Shortage In the United States. *Nursing Economic$*, 34(2), 98-100.

Spangler, L., Reed, S.D., Nekhyludov, L., Grothaus, L.C., LaCroix, A.Z., Newton, K.M., … Newton, K. M. (2009). Provider attributes associated with hormone therapy prescribing frequency. *Menopause* (10723714), 16(4), 810–816. https://doi.org/10.1097/GME.0b013e318198e2fd

Sugarhood, P., Wherton, J., Procter, R., Hinder, S., & Greenhalgh, T. (2014). Technology as system innovation: a key informant interview study of the application of the diffusion of innovation model to telecare. *Disability & Rehabilitation: Assistive Technology, 9*(1), 79-87. doi:10.3109/17483107.2013.823573

Tavares Barbosa, N. C., Cordeiro, B. C., Abrahão, A. L., Xavier, M. L., Silva de Carvalho, R., Carvalho da Silva, R. O., & Ferreira Vieira, M. (2017). Health education: The use of SWOT matrix for project analysis. *Journal of Nursing UFPE* / Revista de Enfermagem UFPE, 11(11), 4298-4304. doi:10.5205/reuol.23542-49901-1-ED.1111201704

Trastek, V. F., Hamilton, N. W., & Niles, E. E. (2014). Leadership models in health care - a case for servant leadership. *Mayo Clinic Proceedings, 89*(3), 374-381. doi:10.1016/j.mayocp.2013.10.012

University of San Francisco (n.d.). *Vision, Mission, and Values Statement.* Retrieved at https://www.usfca.edu/about-usf/who-we-are/vision-mission

US Department of Veterans Affairs (n.d.) *Quality of care. Strategic Analytics for Improvement and Learning (SAIL).* Retrieved at https://www.va.gov/qualityofcare/measure-up/strategic_analytics_for_improvement_and_learning_sail.asp

US Department of Veterans Affairs, Health Economics Resource Center (HERC), n.d. *What are the average daily costs of VA inpatient care?* Retrieved from https://www.herc.research.va.gov/include/page.asp?id=inpatient#mca-ipd

US Department of Veterans Affairs, National Center for Organization Development (n.d.) *Servant Leadership in VA.* Retrieved at https://www.va.gov/NCOD/Servant_Leadership_In_VA.asp

US Department of Veterans Affairs (n.d.) *Quality of care. Strategic Analytics for Improvement and Learning (SAIL).* Retrieved at https://www.va.gov/qualityofcare/measure-up/strategic_analytics_for_improvement_and_learning_sail.asp

Visscher, B. B., Steunenberg, B., Heijmans, M., Hofstede, J. M., Deville, W., van der Heide, I., & Rademakers, J. (2018). Evidence on the effectiveness of health literacy interventions in the EU: a systematic review. *BMC Public Health, 18*(1), 1414. doi:10.1186/s12889-018-6331-7

Voils, C. I., Sleath, B., & Maciejewski, M. L. (2014). Patient perspectives on having multiple versus single prescribers of chronic disease medications: results of a qualitative study in a veteran population. *BMC Health Services Research,* 14, 490. http://doi.org/10.1186/s12913-014-0490-8

Wali, H., Hudani, Z., Wali, S., Mercer, K., & Grindrod, K. (2016). A systematic review of interventions to improve medication information for low health literate populations. *Res Social Adm Pharm,* 12(6), 830-864. doi:10.1016/j.sapharm.2015.12.001

Watters, A., Bergstrom, A., & Sandefer, R. (2016). Patient engagement and meaningful use: assessing the impact of the HER incentive program on cultural competence in healthcare. *Journal Of Cultural Diversity*, 23(3), 114-120.

Wigfall, L. T., & Tanner, A. H. (2018). Health Literacy and Health-Care Engagement as Predictors of Shared Decision-Making Among Adult Information Seekers in the USA: a Secondary Data Analysis of the Health Information National Trends Survey. *J Cancer Educ,* 33(1), 67-73. doi:10.1007/s13187-016-1052-z

Winstanley, E., Zhang, Y., Burtchin, M., Campbell, P., Beck, S., Bohenek, W., & Pahl, J. (2017). Inpatient experiences with MyChart bedside. *Telemedicine And E-Health,* 23(8), 691-693. Doi:10.1089/tmj.2016.0132

Yoon, J., Zulman, D., Scott, J. Y., & Maciejewski, M. L. (2014). Costs Associated With Multimorbidity Among VA Patients. *Med Care, 52,* S31-36. doi:10.1097/MLR.0000000000000061

Yu, W., Ravelo, A., Wagner, T., Phibbs, C., Bhandari, A., Chen, S., & ... Barnett, P. G. (2003). Prevalence and costs of chronic conditions in the VA health care system. *Medical Care Research & Revie*w, 60(3), 146S-67S. https://doi.org/10.1177/1077558703257000

Yuen, E. Y. N., Knight, T., Ricciardelli, L. A., & Burney, S. (2018). Health literacy of caregivers of adult care recipients: A systematic scoping review. *Health Soc Care Community, 26*(2), e191-e206. doi:10.1111/hsc.12368

Zheng, M., Jin, H., Shi, N., Duan, C., Wang, D., Yu, X., & Li, X. (2018). The relationship between health literacy and quality of life: a systematic review and meta-analysis. *Health Qual Life Outcomes,* 16(1), 201. doi:10.1186/s12955-018-1031-7

Appendix A:-IRB and/or Non-Research Approval Documents (Statement of Determination)

DNP Department Policy on IRBPHS
Approval of DNP Practicum or Project Activity

All research projects conducted by faculty or students at USF require prior approval by the IRBPHS Committee. Refer to USF IRB guidelines (USF Connect) for current procedures regarding application for approval of your research. Any research conducted by students must have faculty support and approval prior to submission of the application to the University IRB Committee. Do not proceed with any type of recruitment, data collection or analysis until you receive written approval from the University IRBPHS Committee.

All DNP Projects must receive approval by the Committee Chair and the Department prior to enrollment in N789/795. Approval forms can be downloaded from the DNP Student Portal.

Quality Improvement, Research and IRBPHS

Quality Improvement is defined as "a systematic pattern of actions that is constantly optimizing productivity, communication, and value within an organization in order to achieve the aim of measuring the attributes, properties, and characteristics of a product/service in the context of the expectations and needs of customers and users of that product". *[Source: The Institute of Medicine]*

- QI projects do not require IRB approval

Research is defined as "a systematic investigation, including research development, testing and evaluation, designed to develop or contribute to generalizable knowledge. Activities which meet this definition constitute research for purposes of this policy, whether or not they are conducted or supported under a program which is considered research for other purposes. For example, some demonstration and service programs may include research activities."
http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.html#46.102

- All research involving human subjects requires IRB approval.

DNP Projects might use mixed methods, whereby research activity is combined with QI/ Process improvement. In these cases federal guidelines state "most quality improvement efforts are not research subject to the HHS protection of human subjects regulations. However, in some cases quality improvement activities are designed to accomplish a research purpose as well as the purpose of improving the quality of care and in these cases, the regulations for the protection of subjects in research (45 CFR part 46) may apply. "
http://answers.hhs.gov/ohrp/categories/1569

- QI projects that include research activity or potential research activity must have IRB approval.

Definition of Human Subjects

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The federal regulation used to define human subjects will be used by DNP faculty, Committee Chairs and the DNP Department to determine whether DNP projects involve research and must have IRB approval.

- DHHS definition - a living individual about whom an investigator conducting research obtains (1) data through intervention or interaction with the individual; or (2) identifiable private information.
  - **Intervention** includes both physical procedures by which data are gathered (e.g., venipuncture) and manipulations of the subject or the subject's environment that are performed for research purposes.
  - **Interaction** includes communication or interpersonal contact between investigator and subject.
  - **Private information** includes information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individually identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human subjects.
- FDA definition- an individual who is or becomes a participant in research, either as a recipient of the test article or as a control. A subject may be either a healthy human or a patient.

The following examples are NOT human subjects research and therefore do not normally require IRB approval:

- **Quality Improvement** – Projects aimed at improving local systems of care. The intent is to promote *"betterment"* of a process of care, clinical outcome within the institution.
- **Quality Assessment** – activities that determine whether aspects of medical practice conform to established standards.
- **Quality Assurance** – Process of reviewing, analyzing or evaluating patient or provider specific data that may indicate (the need for) changes in systems or procedures that improve quality of care. The knowledge generated is typically for local, immediate application within the institution.
- **Outcome analysis**: Projects in which medical records are reviewed to evaluate the outcome of medical treatment or the course of patients with a specific medical condition. Results are not compared to an established standard.
- **Resource utilization review**: Medical record review conducted to evaluate the

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use of resources in a specific health care activity.

- **Public health practice**: e.g., surveillance (monitoring of diseases) and program evaluation (immunization coverage, or clinical preventive services such as mammography).

- **Education**: transferring information from one group of people to another – i.e., teaching somebody something.

- **Evidence-based nursing practice change**: designed to enhance the well-being of a patient or patient population.

IRB Approval Necessary to Publish

IRB approval is not necessary to publish or present QI projects and findings as long as the publication or presentation does not refer to the project as research and makes it clear that the publication is the result of a quality / process improvement activity. The following federal guideline makes this clear and can be disseminated to journals that question this determination.

> • *"**the intent to publish is an insufficient criterion for determining whether a quality improvement activity involves research.** Planning to publish an account of a quality improvement project does not necessarily mean that the project fits the definition of research; people seek to publish descriptions of non-research activities for a variety of reasons, if they believe others may be interested in learning about those activities. Conversely, a quality improvement project may involve research even if there is no intent to publish the results."* http://answers.hhs.gov/ohrp/categories/1569

IRB Exempt categories:

The following types of research are exempt from IRB approval. ***45 CFR 46.101(b)***

1. Research conducted in established or commonly accepted **educational settings**, involving normal educational practices, such as (i) research on regular and special education instructional strategies, or (ii) research on the effectiveness of or the comparison among instructional techniques, curricula, or classroom management methods.

2. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, **unless**:

> (i) information obtained is recorded in such a manner that **human subjects can be identified**, directly or through identifiers linked to the subjects; and (ii) any disclosure of the

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human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

3. Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures, or observation of public behavior that is not exempt under paragraph (b)(2) of this section, if:
(i) the human subjects are elected or appointed public officials or candidates for public office; or
(ii) Federal statute(s) require(s) without exception that the confidentiality of the personally identifiable information will be maintained throughout the research and thereafter.

4.Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens, if these sources are publicly available or if the information is recorded by the investigator in such a manner that subjects cannot be identified, directly or through identifiers linked to the subjects.

5. Research and demonstration projects which are conducted by or subject to the approval of Department or Agency heads, and which are designed to study, evaluate, or otherwise examine: (i) Public benefit or service programs; (ii) procedures for obtaining benefits or services under those programs; (iii) possible changes in or alternatives to those programs or procedures; or (iv) possible changes in methods or levels of payment for benefits or services under those programs.

6. Taste and food quality evaluation and consumer acceptance studies, (i) if wholesome foods without additives are consumed or (ii) if a food is consumed that contains a food ingredient at or below the level and for a use found to be safe, or agricultural chemical or environmental contaminant at or below the level found to be safe, by the Food and Drug Administration or approved by the Environmental Protection Agency or the Food Safety and Inspection Service of the U.S. Department of Agriculture.

Please ensure that you have completed the Statement of Non-research Determination and provided that document to your Chair/Advisor. The document can be found on the DNP portal

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DNP Statement of Non-Research Determination Form

Student Name: Ella S. Bermudez

Title of Project: Changing Health Education Delivery

Brief Description of Project: This quality improvement DNP project involves the development and management of a central location for electronically storing educational materials, that can be retrieved more efficiently and conveniently by the frontline staff. The available information includes but not limited to the patient's diagnosis on admission, specialty consults (i.e. home skilled services, telehealth, etc.), radiologic imaging, invasive procedures, medications, diet, activity level, nursing task (i.e. self-insertion of urinary catheter etc.), pre-procedure and after-hospital care instruction. The online central location will be updated quarterly and as needed by the unit-based champion or liaison.

A) Aim Statement: By May 2020, the DNP student will develop, implement and evaluate the use of a central location for all frequently-used health education materials resulting in increased frequency of patient education by frontline staff and decreased amount of time that the frontline staff spends in gathering the latest evidence-based information, thereby, increasing health literacy and promoting patient engagement.

B) Description of Intervention: The frequently used health education materials of one nursing unit will now be shared by other units. The frontline staff will open the CPRS and select the tool tab to access the online central location of all frequently used health education materials. For example, if a patient needs a cardiac catheterization, the frontline staff in the nursing unit or in the community-based outpatient clinic (CBOC) can provide the pre-procedural health education to the patient before the patient is sent to the interventional radiology (IR) area. That said, the health education materials can also be a refresher for frontline staff for any changes and updates in the IR department.

C) How will this intervention change practice?

The RAND report predicts that VA patients who rely on the VA for healthcare needs will continue to be less socioeconomically able and older (Eibner et al., 2016). Low health literacy rates increased with age (Sand-Jecklin, Daniels, & Lucke-Wold, 2017) and older patients with inadequate health literacy had difficulty becoming involved in health care (Liang, Wang, Hwang, Lin, & Pan, 2013). Pirhonen et al. (2014) recommended that the foundation of the healthcare system should be patient-education (PE)-centric. They identified that better communication could reap benefits in the recovery of a patient or in the enhanced self-management of a health condition, offering cost-saving options and improving the well-being of the caregivers.

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Having low health literacy predisposes patients to high ER utilization and hospital readmission (Mitchell et al., 2012; Creber et al., 2019) and low treatment adherence (Miller, 2016). Changing the delivery of patient education had been proven effective in improving patient's health outcomes in COPD (Mulhall et al., 2017), carpal tunnel syndrome (Keulers, Welters, Spauwen, & Houpt, 2007), knee osteoarthritis, osteoporosis, and rheumatoid arthritis (Lopez, et al., 2018), and acute coronary syndrome (Eshah, 2013). Comparatively, it improves warfarin use (Kim, Mohammad, Coley, & Donihi, 2015) and right technique of inhaler use (Mulhall et al., 2017) in the same way that it increases overall satisfaction scores (Greysen et al., 2014) and improves communication with health care providers (Winstanley et al., 2017). Likewise, it promotes patient engagement and treatment adherence (Rathert et al., 2017; Prey et al., 2014; Miller, 2016). All things considered, if poor health literacy is not timely addressed, the medical expenditures per veteran will continue at 65% higher for VA users than non-VA users (Machlin & Muhuri, 2018) and cost $143 million more than it would with adequate health literacy (Haun et al., 2015), partly because of high ER utilization and hospital readmission (Mitchell et al., 2012).

Muhlbacher, Bethge, Reed, and Schulman (2016) found out that shared-decision making is the second discrete choice that patients would most highly value and be willing to pay for its transformation. With knowledge, the patient can be empowered regarding patient's health problems and managements, thus enabling them to participate in healthcare associated decisions (Mulhall et al., 2017; Keulers et al., 2007; Lopez, et al., 2018; Eshah, 2013) increase overall satisfaction score (Greysen et al., 2014), and improve communication with health care providers (Winstanley et al., 2017). A patient can be supported by patient education methods and, in this way, patient's health literacy promotes patient engagement and treatment adherence (Rathert et al., 2017; Prey et al., 2014; Miller, 2016).

The gap in the literature regarding how patient education plays a vital role in health literacy and patient engagement represents a crucial aspect of patient care that should be considered, particularly regarding goals of care, treatment, and outcomes. To help in the allocation of resources for improvement by VA stakeholders and better health care utilization by the veteran to produce low-cost, high-quality care, a review of literature was completed to focus on whether or not a standardized patient education delivery improves health literacy and promotes patient engagement among veterans.

This quality improvement project will show that the centralized location of frequently-used patient education materials helps frontline staff to engage patients with more evidence-based practices. The shift to providing health education in a structured format could change the paradigm of a patient's understanding of the care they had in the hospital and of the information they need to recover at home fully. Correctly providing a personalized patient education depends on more than just the technology. The healthcare organization must prepare the budget for the infrastructure change and for regulatory changes to educate the frontline staff. Consequently, staff must have the proper training and knowledge to emphasize patient involvement throughout each step of patient education.

The dissemination strategy ensures that the project results are relevant for future projects and research includes raising awareness about the importance of patient

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EVIDENCE-BASED CHANGE OF PRACTICE PROJECT CHECKLIST *

Instructions: Answer YES or NO to each of the following statements:

Project Title:	**YES**	**NO**
The aim of the project is to improve the process or delivery of care with established/ accepted standards, or to implement evidence-based change. There is no intention of using the data for research purposes.	**Yes**	
The specific aim is to improve performance on a specific service or program and **is a part of usual care**. ALL participants will receive standard of care.	**Yes**	
The project is **NOT** designed to follow a research design, e.g., hypothesis testing or group comparison, randomization, control groups, prospective comparison groups, cross-sectional, case control). The project does **NOT** follow a protocol that overrides clinical decision-making.	**Yes**	
The project involves implementation of established and tested quality standards and/or systematic monitoring, assessment or evaluation of the organization to ensure that existing quality standards are being met. The project does **NOT** develop paradigms or untested methods or new untested standards.	**Yes**	
The project involves implementation of care practices and interventions that are consensus-based or evidence-based. The project does **NOT** seek to test an intervention that is beyond current science and experience.	**Yes**	
The project is conducted by staff where the project will take place and involves staff who are working at an agency that has an agreement with USF SONHP.	**Yes**	
The project has **NO** funding from federal agencies or research-focused organizations and is not receiving funding for implementation research.	**Yes**	
The agency or clinical practice unit agrees that this is a project that will be implemented to improve the process or delivery of care, i.e., **not** a personal research project that is dependent upon the voluntary participation of colleagues, students and/ or patients.	**Yes**	
If there is an intent to, or possibility of publishing your work, you and supervising faculty and the agency oversight committee are comfortable with the following statement in your methods section: *"This project was undertaken as an Evidence-based change of practice project at X hospital or agency and as such was not formally supervised by the Institutional Review Board."*	**Yes**	

ANSWER KEY: If the answer to **ALL** of these items is yes, the project can be considered an Evidence-based activity that does NOT meet the definition of research. **IRB review is not required. Keep a copy of this checklist in your files.** If the answer to ANY of these questions is **NO**, you must submit for IRB approval.

*Adapted with permission of Elizabeth L. Hohmann, MD, Director and Chair, Partners Human Research Committee, Partners Health System, Boston, MA.

STUDENT NAME (Please print): Ella S. Bermudez

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Signature of Student:

_____DATE_____

SUPERVISING FACULTY MEMBER (CHAIR) NAME (Please print):
Dr. Jo Loomis_____
Signature of Supervising Faculty Member (Chair):

_____DATE_____

Appendix B: VA Capstone Project Proposal

Guidance for Completing Capstone Projects at VAPAHCS
10/13/2020

Things to consider prior to conducting a capstone Project at VAPA HCS:

1. **Obtain Capstone Project form and review criteria and instructions.**
2. **Discuss your idea with your academic advisor/mentor/instructor to develop your thoughts and get feedback. Begin to develop your PICOT question.**
3. **Discuss your idea with the appropriate nurse manager to obtain feedback and approval.**
4. **Review the facility and nursing strategic plan and identify how your project contributes to the goals. (ask your nurse manager for assistance on this).**
5. **Discuss your idea with the VAPA HCS EBP Program Director and/or ACNS/Education.**
6. **Review this form and complete per instructions.**
7. **An important consideration for approval is how your project contributes to the facility or nursing service strategic plan. (your nurse manager may have some ideas to assist with this).**
8. **Assemble your team (discuss with your nurse manger).**
9. **Set up a time to meet with the appropriate Chief Nurse to discuss your idea and obtain approval and signature.**
10. **Complete the form and obtain feedback from your team.**
11. **Make sure that you get feedback on your idea and your draft of this form.**
12. **Once you have completed the form submit to EBP Program Director for review.**
13. **If you have questions, please contact the EBP Program Director to set up appointment.**
14. **Do not start your project until you receive approval.**
15. **Allow at least 4-6 weeks to obtain approvals.**

Guidance for Completing Capstone Projects at VAPAHCS
10/13/2020

Adapted with permission from the VA Pittsburg Nursing Research. For questions and assistance in completing the checklist and approval process, please contact EBP Program Director or Associate Chief Nursing Services/Education.

Please identify the individuals and obtain signatures.

Project Title	**Improving Access to Patient Education and VA Resources Information**
Name	**Ella Bermudez RN, MSN, CCRN, CCM**
Position	**Community Health Nurse Coordinator**
Academic Affiliate	**University of San Francisco**
Academic Faculty/advisor/mentors	**Dr. Jo Loomis DNP, FNP-C, CHSE, CLC, ANLC, NCMP, CNL** **Dr. Elena Capella EDD, MSN/MPA, RN, CNL, CPHQ, LNCC**
Unit/Service Line	**Nursing (Case Management)**
VAPAHCS Mentor/Advisor	**Janice Berti-Bacon MPH, MHA, BSN (Preceptor)** **Cynthia Shum, DNP (Advisor)**
Nurse Manager/Immediate Supervisor	**Sharisse Cabatic RN, MSN (Acting Nurse Manager)**
Chief Nurse for Service	**Aileen Naungayan**
EBP Program Director	**Dr. Satish Mahajan**

I am interested in conducting a Capstone project

When do you plan to conduct your project? From 8/18/2020 To 5/7/2021

VAPAHCS

Guidance for Completing Capstone Projects at VAPAHCS
10/13/2020

Key Stakeholders: Please provide units/care areas where you plan to conduct the project. Please obtain signatures of the individuals named below

Name	Job Title	Signature	Date
1. Dr. Satish M. Mahajan PHD, MStat, MEng, RN	Associate Chief Nurse for Research		
2. Linda Frommer. MPH	Director of Patient Experience Office of Quality, Safety, and Value (QSV)	Linda Frommer	10/16/20
3. Janice Berti-Bacon MPH, MHA, BSN	Veteran Health Education & Information Coordinator, Clinical Preceptor	Janice Berti-Bacon	10/16/20
4. Dr. Cynthia Shum DNP, Med, RN, CHSE-A	Director of Education & Operations, Simulation, Clinical Adviser	Cynthia Shum	10/21/20
5. Aileen Naungayan RN	Chief of Specialty & Hospital-Based Services (SHBS)	A. Naungayan	10/22/2020
6. Heidy Garcia BSN, RN, WCC	Assistant Chief of Specialty & Hospital-Based Services (SHBS) Nurse Manager, Case Management and Utilization Review,	Heidy Garcia	10/14/20
7. Sharisse Cabatic RN, MSN	Acting Nurse Manager, Case Management		10/14/2020
8. Elizabeth McLean RN, MSN	Sonora PACT Clinic, POC	Elizabeth MacLean	10/19/2020
9. Rose Pinckney RN	Privacy Information, POC	Rose Pinckney	10/15/20
10. Leonor Lopez RN	Wound Care Team, POC	Lopez	
11. Leslie Aquino RN	Mental Health and ATS, POC	Leslie Aquino	
12. Corazon Callanta, RN, CRRN	President, AFGE Local 2110	see Attachment I	

Guidance for Completing Capstone Projects at VAPAHCS
10/13/2020

Capstone Project Proposal Information

Instructions:

1. **All staff conducting a capstone project at VAPAHCS will be required to complete a Project Proposal (see Attachment A)**
2. **If your project involves data collection & analysis, include a detailed description of your data collection and security plan in your Project Proposal.**
3. **Submit your Project Proposal to the EBP Program Director and key stakeholders listed in the table on the first page.**
4. **Contact other stakeholders and include additional information as specified in the instructions below.**
5. **Discuss project plan with your nurse manager, nursing service chief, stakeholders. Obtain their signatures next to their name on table on page 1.**

No	YES	Project Plan	Instructions
☒	☐	**a. Will you be utilizing the VAPAHCS library services for this project?**	If yes, contact Medical Center Librarian for more information.
☐	☒	**b. Does your project involve education for staff? If yes, does your project involve a pre-test/post-test component? YES**	If yes, include a detailed **Staff Teaching Plan** (Attachment B) and the pre/posttest (if applicable) with your project proposal
☒	☐	**c. Does your project involve education for patients?**	If yes, contact the Veteran Health Education Coordinator (VHEC) to discuss the approval process for implementing patient education. You will need to meet VAPAHCS patient education criteria and standards. Include a detailed **Patient Teaching Plan** (Attachment C) with your proposal.
☐	☒	**d. Does your project involve a nursing practice or process change?**	If yes, attach relevant policies and/or procedures to your project proposal.
☐	☒	**e. Does your project involve an administrative practice or process change?**	If yes, attach relevant policies or procedures to your proposal.

☒	☐	**f. Does your project involve a secondary analysis of current practice or processes?**	If yes, provide a complete description of the secondary analysis plan in your project proposal. Include the databases you will be accessing.
☐	☒	**g. Does your project involve conducting a staff survey?**	If yes, provide a copy of the survey and a description of your plan to conduct the survey (see attachment F). You will require AFGE approval prior to conducting the survey. Please see Item 'h' below. (see attachment G)
☐	☒	**h. Does your project require AFGE notification?**	Contact your immediate supervisor to determine if AFGE notification is necessary. If yes, provide verification of notification with your proposal.
☐	☒	**i. Does your project involve the presentation or collection of any data (patient, staff, or organization level data)?**	If yes, a formal VAPAHCS IRB QA/QI determination is **required prior** to starting the project. Refer to the **QA/QI Determination Submission Instructions** (Attachment D). **The QA/QI determination (checklist)** (Attachment D) will establish if your project is QA/QI or research. If research is determined, the IRB Chair, or designee, will notify you of your project status determination. Please allow 4-6 weeks for a QA/QI determination. See the QA/QI Determination Flowchart below. 1. <u>If your project is determined to be QA/QI</u>, you will need approval to conduct the project from key VAPAHCS

			stakeholders, including the unit/care area Nurse Manager(s), Associate Chief Nurse(s), and Service Line Chief(s) listed in the table on the first page. Other approvals may be required based on the scope of the project. Submit a copy of the **Clinical Project Determined to be QA/QI Project Agreement Statement** (Attachment E) to the EBP Program Director or ACNS/E prior to starting the project. 2. If the project is determined to be research, IRB and R&D approval are required before you can conduct the project. You must have PI status at VAPAHCS to submit a Stanford IRB approval or conduct research at VAPAHCS. You must contact the EBP Program Director or ACNS/E to discuss eligibility. Do not start the study until you receive a letter from the ACOS R&D indicating that you have permission to conduct the study. This letter is required before you can conduct an academic project within VAPAHCS that is determined to be research.

☐	☒	**j. Permission to disseminate project results outside VAPHS has been obtained from 1) your immediate supervisor; 2) Service Line Chief Nurse; 3) ACN-R; 4) Associate Director for Patient Care Services, Nursing; and 5) Director's Office.**	**NOTE:** Permission to disseminate project results outside VAPHS is required through the Director's Office as outlined in VAPAHCS Handbook 1058. (Complete Attachment F) This includes dissemination in the form of oral presentations and/or manuscripts submitted to your academic institution. Please allow 3-4 weeks to obtain the necessary signatures required for dissemination.

VAPAHCS

Guidance for Completing Capstone Projects at VAPAHCS
10/13/2020

Attachment A: Project Proposal format

Headings:

***Project TITLE: Improving Access to Patient Education and VA Resources Information**

*Background and Significance of this project:

One in every five veterans in the US VA healthcare system has poor or marginal health literacy (Haun, Patel, French, Campbell, & Lapcevic, 2015). Limited health literacy may inhibit patients from having adequate skills to perform appropriate self-care needs (Jacobs, Lou, Ownby, & Caballero, 2016) and from efficiently navigating the VA pharmacy system, obtaining appointments, refilling medications, or contacting their VA prescribers between appointments (Voils, Sleath, & Maciejewski, 2014). A low-literacy-related stigma can genuinely impair a patient's interactions with health professionals and can inhibit their potential to benefit from needed health services (Easton, Entwistle, & Williams, 2013). Having low health literacy predisposes patients to high emergency room (ER) utilization and hospital readmission (Mitchell, Sadikova, Jack, & Paasche-Orlow, 2012) and low treatment adherence (Miller, 2016). These findings were not unexpected because patients with low health literacy (HL) had poorer knowledge and inadequate self-care behavior than those with high HL (Matshuoka et al., 2016).

High educational literacy is not necessarily a prediction of proficient health literacy (Clark, 2011; Blakely, 2018); however, health literacy mediates the association between educational attainment and health behavior (Friis, Lasgaard, Rolands, Osborne & Maindal, 2016). Patient should be educated and expected to be the integral members of the safety team (Liang, 2001). Patients have the right to safe healthcare but with this right comes the responsibility to the education about their own medical information. The traditional approach to providing information to veterans, particularly on patient education, is the use of hard copy. For instance, if a patient needs to know about pneumonia, the clinicians may access the information from the hospital's online health library, which is unfortunately embedded among other hospital resources (see attachment H) or at the main hospital website (see attachment 1). Additionally, not all pieces of information appropriate for patient health and educational literacy are available in the health library. For example, if a patient needs to learn how to insert a Foley catheter, the skillset indicated at the online health library is not appropriate to a patient's level of health literacy and cannot be found in both CPRS tool and main hospital website (see attachments G1 and G2).

In a similar vein, if a patient needs heart failure (HF) education, a provider's order for HF education triggers a series of actions that include the primary nurse utilizing an HF packet from another source of patient education, the health education repository. If the patient is deemed at high risk for readmission, the Project Re-Engineered Discharge (RED) transition coordinator steps in to provide comprehensive patient education and offer community resources. Even this process is not uniformly carried out in the medical and surgical inpatient setting or the emergency room and same-day surgery/procedure setting. Undeniably, the clinicians are relying on these fragmented processes of delivering health information in disparate places throughout the hospital. With this in mind, it is often left to the nurses to aggregate relevant information, but given busy nursing schedules, this is an unrealistic task. The problem is not that there is not any type of patient education content geared toward

improving health literacy and patient engagement. The issue is that the contents are provider-specific, not standardized, and not located in a central location.

The dilemma of having inconsistency in providing health education is not new, even to a large healthcare system such as the Veteran Affairs healthcare system. Like many large health systems, the VA healthcare system exhibits variations in practice among facilities, clinics, and healthcare providers because of diverse expertise and practice styles among clinicians, different clinic organizations, variations in leadership and resources, and the various influences of community and regional factors (Atkins, Kilbourne, & Shulkin, 2017). The impact of this provider-specific approach is contingent on individual providers' expertise, their practice location, and their length of service within the healthcare organization impacts healthcare delivery (Spangler et al., 2009) and care outcomes (Watters, Bergstrom, & Sandefer, 2016).

Project Goal/ Key Practice Question/ PICO-T State the practice/research or process question. State the project goal/purpose or aim.

Aim Statement: This project seeks to design and implement a SharePoint site for PACT Clinic to improve access to patient education and resource information by May 7, 2021. The project goal is to provide the clinicians with a timely and easy access to evidenced-based, systemwide-used, and clinician-driven patient education and resource information.
The SharePoint: Since the CPRS is what most clinicians use at the VA, the CPRS' tool menu will include the dropdown menu, which will be linked to this project's SharePoint site (see attachment B). In doing so, clinicians will be directly connected to the patient education and VA resources immediately without shifting from one website to another (see attachment B). In the SharePoint site, the contents will be updated and managed by unit-based contributors from different VA units/sites under the Patient Education Committee's supervision and direction. In doing so, the patient education and resource materials will be standardized across the continuum of care.

Description of the Project or Practice Change:

Describe how the project addresses VAPA strategic plan (Facility and Nursing Service)

The facility's strategic plan for the Fiscal Year 2021 aims to be the best in quality and patient experience. This DNP project is in alignment with the strategic plan. This project could improve the facility's quality measures in the following domains: 1) avoidable adverse events, 2) adjusted length of stay, 3) access for the call center, 4) RN turnover, 5) care coordination, and (6) patient experience. Additionally, this facility's lowest-ranking measures in the CAHPS survey were "communication with nurses" and "discharge plan." Focusing on these quality measures, the facility could earn its three-star rating in the future.

Avoidable Adverse Events and Healthcare Associated Infection. Healthcare providers are the most trusted source of information on diseases, such as community-acquired Methicillin-resistant Staphylococcus aureus, commonly known as MRSA (Brinsley-Rainisch, Cochran, Bush-Knapp, & Pearson, 2007). In support of this study, doctors remain the most frequently used source of medical information (Duren-Winfield et al., 2015); however, 7.6% of physicians prefer to inform patients about hospital-acquired infections (HAIs) only if they are at a high risk of infection (Bo, Ampino, Dalmasso, & Zotti, 2017). Consequently, nurses

deliver verbal information about hospital-acquired infections. With this project, the clinicians will have access to an organized and systematic patient education program, which could potentially prevent avoidable adverse events, such as a worsening of the infection or its spread to other people.

Adjusted Length of Stay. As the length of stay decreases, the patient's chances of feeling well enough to participate in educational sessions diminishes (DeMarco & Schuster Nystrom, 2009). To accommodate changes in healthcare practice, the nursing staff has to take advantage of "optimal teachable moments," engage family members as appropriate to the patient's preferences, and adapt their teaching accordingly (DeMarco & Schuster Nystrom, 2009). This project is a potential solution to the SAIL's adjusted length-of-stay domain and optimal teachable moments because clinicians will have a timely and easily accessible collaborative portal for all frequently used educational materials.

Access to a Call Center or Nurse-Advise Line. Providing effective and applicable health education in the inpatient setting or at the clinic will lessen the use of the nurse-advise line. For instance, many patients who present to the ED with ongoing needs in terms of their health education often do not have these addressed before their ED discharge (Rising, Hudgins, Reigle, Hollander, & Carr, 2016). These needs include ongoing uncertainty about the cause of their symptoms and what to expect, which triggers feelings of fear. This project can potentially alleviate the use of the nurse-advise line because clinicians will have a timely and easily accessible communication exchange regarding all frequently used patient education and resource materials. In turn, clinicians will have more time in providing patient education and more patience in answering patient's question. This is also an avenue for the Advice Nurse. When clinicians repeat and reinforce the same information to patients across the continuum of care, patients understand it better and trust the information more than when different information is given to them.

RN Turnover. Our country is projected to experience a nursing shortage that matches the pre-recession work levels because of the rise in chronic care management, the Affordable Care Act, and aging baby boomers (Snavely, 2016). One solution to keep the mature workers—who are stereotypically known to merely bide their time until retirement—is to engage them to pass down their skills, experience, and resiliency to younger workers (Cohen-Callow, Hopkins, & Kim, 2009). Since this project is also a collaborative portal of knowledge sharing, it can potentially be a source of practice-transfer strategy from one clinician to another. In the long run, this longitudinal, interprofessional, clinician-to-clinician communication will benefit the patient in any point-of-care.

Care Coordination. Predischarge education helps motivate acute coronary syndrome patients to adhere to a healthy lifestyle post-discharge (Eshah, 2013). Additionally, discharge planning that involves patient education, pre-operative education, and discharge education helps reduce the length of stay (Majid, Lee, & Plummer, 2015). That said, higher activation in patient engagement in self-care relates to better health outcomes, which include improved clinical indicators, better health behaviors, and the increased use of preventive screening tests (Greene, Hibbard, Sacks, Overton, & Parrotta, 2015). The SharePoint will feature steps on how the clinician can order a consult, supplies, and durable medical equipment. For example, when a clinician is faced with newly diagnosed diabetes needing insulin, the SharePoint site will feature programs that patient might be interested in like Diabetes Class 101. It will also address consult that the clinician might order to support the patient, say, a diabetic teaching in San Jose VA Clinic. The SharePoint site will feature the keyword to order insulin syringe.

Patient Experience and HCAHPS Survey. Nurses improved their Hospital Consumer Assessment of Healthcare Providers and System (HCAHPS) survey score with a consistent structure for conducting patient education (Cartwright, 2017). Similarly, the Engage2 project measured the use of the protocol questions against the HCAHPS scores (Davis, 2017). When the unit utilized a new patient education process, its HCAHPS scores showed significant rises both in the "Communication with Nurses" domain and in patient-reported satisfaction. This project has the potential to improve patient experience and improve HCAPHS survey scores because the portal links clinicians to a timely, systemwide, and consistent patient education materials and resources.

Re-admission. Low-quality discharge teaching decreases a patient's readiness for hospital discharge (Nurhayati, Songwathana, & Vachprasit, 2018) and is associated with both early and late readmissions (Greco et al., 2015). This could be due to differences between the giver and receiver of patient education. For instance, clinicians provide patient education that focuses on clinical management tasks. In contrast, patients and caregivers would like patient education to incorporate these tasks into their daily living activities (Ahmad et al., 2016). This project has the potential to improve effective teamwork with patients and make them full healthcare partners because the SharePoint will also feature VA and local community-based resources.

Description of the project in detail. What steps will you take to conduct the project? Create a timeline of the project Implementation plan laying out milestones and completion dates

The creation of Patient Education Portal (PEP) will be divided into three major phases: the analysis, the act, and the anchor (see Appendix G). The analysis phase will occur in one month, in order for the DNP student to organize and complete the need-assessment through several face-to-face meetings with each nursing unit. During these meetings, the DNP student will recruit unit-based champions for the following committees: Integration, Workflow, and Steering.

The second phase is the act or the implementation phase. This phase will occur as a result of the analysis phase, wherein the newly recruited unit-based champions will independently work with their respective nursing units to review the current use of online materials (integration liaison) and workflow on delivering patient education (workflow champions). In the weeks ahead, there will be an introductory online meeting with each nursing unit's respective steering, workflow, and integration of unit-based champions. With the approval of this project, the DNP student will enter a request to the VA's Office of Information and Technology (OI&T). The OI &T will, then, appoint a local technical support in Palo Alto VA with whom the DNP student will closely work with. The DNP student will utilize the VA central location site, SharePoint. This information-sharing portal will feature the frequently requested patient education materials. To enhance its accessibility, this portal will be integrated in the dropdown menu of the tool section in the computerized patient record system (CPRS). Then, the DNP student will have online meetings with the unit-based champions to finalize the accumulated unit-based patient education materials. The local kick-off after the online roll-out meetings with the unit-based champion will occur before the go-live event.

The anchor phase, or the evaluation of the project for sustainability, includes the distribution and collection of the post-implementation survey. The integration unit-based

liaison will assist the DNP student in collecting the post-implementation survey forms that were not previously completed. While the workflow unit-based champion will report any needed modification in the new health education delivery practice, the steering unit-based champion will report any updates on the aggregated patient education materials. For sustainability of this project, these steering unit-based PEP champions and the DNP student will keep the information-sharing portal appropriate, relevant, and timely.

Evaluation of the Project or Practice Change

Describe how you will evaluate the success of project implementation and how you intend to sustain this change or new practice.

This project's pre implementation surveys examine the clinician's information-seeking behavior, particularly, in determining the source of patient education that clinicians frequently used for commonly asked questions and if the clinicians have a timely and easy access to patient education and resource information materials. In addition to the pre implementation surveys' objectives, the post implementation surveys intend to find out the clinicians' perception on whether the process is working and what changes should occur to make it work more smoothly

The University of San Francisco's Qualtrics will be utilized to analyze the outcomes of the project which includes ease in accessing frequently used health information and program acceptance. In general, this project will demonstrate its impact on patient education encounters and on the clinicians' confidence in providing patient education by utilizing this timely, easily accessible, trustworthy and reliable patient education portal.

Data Collection and Security Procedures

How are you managing and protecting the data? How will you keep your project work safe from loss or theft?

All hardcopy survey data will be kept in a secured VA desktop in VA Health Education Coordinator's office. Electronically entered survey completed via USF's Qualtrics will be transferred to

Collected patient education and resource information materials will be stored in the SQL Server Content Database associated with the assigned VA site collection.

Practice Implications

What are the implications of this change to your population, your team or unit, the institution, specialty, your profession?

Time constraints represent the most pervasive barrier to obtaining information and followed closely with lack of access to the knowledge source (Aakre, Maggio, Fiol, & Cook, 2019; Del Fiol, Workman, & Gorman, 2014). By providing the clinicians with a timely and easy access to patient education and resource information, this project has the potential to meet the veteran population's need for increased empowerment in managing their health problems, thus enabling them to participate in healthcare-associated decisions (Mulhall et al., 2017; Keulers et al., 2007; Lopez et al., 2018; Eshah, 2013), improve communication with healthcare providers (Winstanley et al., 2017), and increase overall satisfaction scores (Greysen et al., 2014). A patient can be supported by patient education methods, and this empowerment promotes patient engagement and adherence to treatment (Rathert et al., 2017; Prey et al., 2014; Miller, 2016).

Using this SharePoint, clinicians will be able to provide patient education and resource information that are evidence-based and used across the continuum of care. With this in mind, clinicians may possibly increase patients' understanding on the information provided to them regardless of the patients' health literacy level and geographical location. For instance, a Sonora community-based clinician located 50 miles away from Palo Alto's interventional radiology (IR) suite will be able to offer the same information regarding cardiac catheterization that the IR clinician usually provides. The portal emulates the convergence or reciprocal interdependence strategy, wherein clinicians repeat and reinforce the same information to patients across the continuum of care and, in this example, from the outpatient to the inpatient setting (McCormack, Thomas, Lewis, & Rudd, 2017). The study showed that the convergence strategy is the most influential and produces the best outcome because patient information is reinforced from different clinicians across the continuum of care.

Besides the potential to empower patients to manage their own healthcare needs, this project may pave the way for reducing healthcare costs. Equally important in the strategic plan is reducing both avoidable length of stay (LOS) and preventable readmissions. For instance, patient with heart failure admitted in the hospital for one month to lose the 50-pound water-weight gain; with this portal, the clinicians can use the system-wide patient education materials during hospitalization. As a result of this project, the same materials will be reinforced by a different clinician after hospitalization in the outpatient setting, even if the patient misplaced his own materials. Fruitful outcome of this patient education encounter is for patient not getting readmitted to the hospital. When readmission is inevitable, the clinicians will be able to help him recognize the signs and symptoms early so that he would not need to spend a longer time in the hospital.

All things considered, reducing LOS offers the first opportunity for cost avoidance. The daily inpatient-stay cost at the VA medical ward was $3,873 in 2018 (US Department of Veterans Affairs, Health Economics Resource Center, n.d.). These expenses increase when patients stay in the hospital if they continue to meet inpatient criteria. When patients no longer meet inpatient criteria, their stays are considered unpaid, and the expenses incurred will reduce the overall contribution margin. Whether the inpatient criteria are met or not, a reduction in LOS by seven inpatient days per week would determine an annual $1.4-million cost savings. In any event, an occupied or filled bed prohibits a new patient from being admitted. Reducing the hospital readmission rate presents the second cost-avoidance opportunity. The VA could save $2,140 for each averted 30-day readmission (Carey & Stefos, 2016). The expected costs of readmission for a patient with heart attack, heart failure, and pneumonia are $3,432, $2,488, and $2,278, respectively. Reducing readmissions by seven patients per week would determine a cost savings of $778,960 annually.

Initially, this project will address the clinicians' need for timely and easily accessible evidence-based patient education and resource information across the continuum of care. In doing so, clinicians may develop the advantage to potentially impact the patients' understanding of the care they had in the hospital and of the information they need to fully recover at home. Ultimately, patients could then reap the benefits with enhanced self-management of a health condition, which may potentially offer improved cost-saving options to the entire healthcare system. Eventually, this project could reduce healthcare costs by reducing both the avoidable LOS and preventable hospital readmission.

Reference:

Aakre, C. A., Maggio, L. A., Fiol, G. D., & Cook, D. A. (2019). Barriers and facilitators to clinical information seeking: a systematic review. *J Am Med Inform Assoc, 26*(10), 1129-1140. Doi:10.1093/jamia/ocz065

Atkins, D., Kilbourne, A. M., & Shulkin, D. (2017). Moving from discovery to system-wide change: the role of research in a learning health care system: experience from three decades of health systems research in the Veterans Health Administration. *Annual Review of Public Health,* 38467. Doi:10.1146/annurev-publhealth-031816-044255

Ahmad, F. S., Barg, F. K., Bowles, K. H., Alexander, M., Goldberg, L. R., French, B., … Kimmel, S. E. (2016). Comparing Perspectives of Patients, Caregivers, and Clinicians on Heart Failure Management. *Journal of Cardiac Failure,* 22(3), 210–217. https://doi.org/10.1016/j.cardfail.2015.10.011

Atkins, D., Kilbourne, A. M., & Shulkin, D. (2017). Moving from discovery to system-wide change: the role of research in a learning health care system: experience from three decades of health systems research in the Veterans Health Administration. *Annual Review of Public Health,* 38467. Doi:10.1146/annurev-publhealth-031816-044255

Beatty, C. R., Flynn, L. A., & Costello, T. J. (2017). The Impact of Health Literacy Level on Inhaler Technique in Patients With Chronic Obstructive Pulmonary Disease. *Journal of Pharmacy Practice,* 30(1), 25-30. doi:10.1177/0897190015585759

Beatty, C. R., Flynn, L. A., & Costello, T. J. (2017). The Impact of Health Literacy Level on Inhaler Technique in Patients With Chronic Obstructive Pulmonary Disease. *Journal of Pharmacy Practice*, 30(1), 25-30. doi:10.1177/0897190015585759

Bo, M., Amprino, V., Dalmasso, P., & Zotti, C. M. (2017). Delivery of written and verbal information on healthcare-associated infections to patients: opinions and attitudes of a sample of healthcare workers. *BMC Health Services Research,* 17, 1–7. https://doi.org/10.1186/s12913-017-2021-x

Beatty, C. R., Flynn, L. A., & Costello, T. J. (2017). The Impact of Health Literacy Level on Inhaler Technique in Patients With Chronic Obstructive Pulmonary Disease. Journal of Pharmacy Practice, 30(1), 25-30. doi:10.1177/0897190015585759

Brinsley-Rainisch KJ, Cochran RL, Bush-Knapp ME, & Pearson ML. (2007). The general public's awareness, knowledge, and perceptions of "staph" – with a focus on community-associated methicillin-resistant Staphylococcus aureus. *American Journal of Infection Control, 35*(6), 425–426. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=rzh&AN=106159320&site=ehost-live

Carey, K., & Stefos, T. (2016). The cost of hospital readmissions: evidence from the VA. *Health Care Management Science,* 19(3), 241–248. https://doi.org/10.1007/s10729-014-9316-9

Cartwright, K. (2017). How consistency in practice improved patient and staff satisfaction. *Nursing,* 47(11), 15-18. Doi:10.1097/01.NURSE.0000526002.97473.07

Clark, B. (2011). Using law to fight silent epidemic: The role of healthy literacy in health care access, quality cost. *Annals of Health Law,* 20(2), 253-328.

Cohen-Callow, A., Hopkins, K., & Kim, H. (2009). Retaining workers approaching retirement: why child welfare needs to pay attention to the aging workforce. *Child Welfare,* 88(5), 209-228.

Creber, R. M. M., Grossman, L. V., Ryan, B., Qian, M., Polubriaginof, F. C. G., Restaino, S., . . . Masterson Creber, R. M. (2019). Engaging hospitalized patients with personalized health information: a randomized trial of an inpatient portal. *Journal of the American Medical Informatics Association*, 26(2), 115-123. doi:10.1093/jamia/ocy146

Davis, J. (2017). Engage2: implementing a health literacy protocol for patient assessment and engagement. *Journal of Consumer Health on The Internet,* 21(4), 338-349. Doi:10.1080/15398285.2017.1361278

DeLa Cruz, R. F., Caillouet, B., & Guerrero, S. S. (2012). Strategic patient education program to prevent catheter-related bloodstream infection. *Clin J Oncol Nurs,* 16(1), E12-17. Doi:10.1188/12.CJON.E12-E17

Del Fiol, G., Workman, T. E., & Gorman, P. N. (2014). Clinical questions raised by clinicians at the point of care: a systematic review. *JAMA Intern Med, 174*(5), 710-718. Doi:10.1001/jamainternmed.2014.368

DeMarco, J., & Nystrom, M. S. (2009). Expanding education technology to meet the needs of patients, families, and clinicians. *Health Promotion Practice*, 10(1), 15–23. https://doi.org/10.1177/1524839908329138

Duren-Winfield, V., Onsomu, E. O., Case, D. L., Pignone, M., Miller Jr, D., & Miller, D., Jr. (2015). Health literacy and computer-assisted instruction: usability and patient preference. *Journal of Health Communication*, 20(4), 491–498. https://doi.org/10.1080/10810730.2014.976322

Easton, P., Entwistle, V. A., & Williams, B. (2013). How the stigma of low literacy can impair patient-professional spoken interactions and affect health: insights from a qualitative investigation. *BMC Health Services Research,* (1), doi:10.1186/1472-6963-13-319

Eshah, N. F. (2013). Predischarge education improves adherence to a healthy lifestyle among Jordanian patients with acute coronary syndrome. *Nurs Health Sci,* 15(3), 273-279. doi:10.1111/nhs.12018

Friis, K., Lasgaard, M., Rowlands, G., Osborne, R. H., & Maindal, H. T. (2016). Health Literacy Mediates the Relationship Between Educational Attainment and Health Behavior: A Danish Population-Based Study. *Journal of Health Communication, 21*, 54-60. doi:10.1080/10810730.2016.1201175

Greco, A., Steca, P., Pozzi, R., Monzani, D., Malfatto, G., & Parati, G. (2015). The influence of illness severity on health satisfaction in patients with cardiovascular disease: the mediating role of illness perception and self-efficacy beliefs. *Behavioral Medicine,* 41(1), 9-17. Doi:10.1080/08964289.2013.855159

Greene, J., Hibbard, J. H., Sacks, R., Overton, V., & Parrotta, C. D. (2015). When patient activation levels change, health outcomes and costs change, too. *Health Affairs* (Project Hope), (3), 431. https://doi.org/10.1377/hlthaff.2014.0452

Greysen, S.R., Khanna, R.R., Jacolbia, R., Lee, H.M., & Auerbach, A.D. (2014). Tablet computers for hospitalized patients: a pilot study to improve inpatient engagement. *Journal of Hospital Medicine* – Wiley Online Library. Doi:10.1002/jhm.2169

Gruman, J., Rovner, M. H., French, M. E., Jeffress, D., Sofaer, S., Shaller, D., & Prager, D. J. (2010). From patient education to patient engagement: implications for the field of patient education. *Patient Educ Couns, 78*(3), 350-356. doi:10.1016/j.pec.2010.02.002

Haun, J., Luther, S., Dodd, V., & Donaldson, P. (2012). Measurement variation across health literacy assessments: implications for assessment selection in research and practice. J *Health Community,* 17 Suppl 3, 141-159. Doi:10.1080/10810730.2012.712615

Jacobs, R. J., Lou, J. Q., Ownby, R. L., & Caballero, J. (2016). A systematic review of eHealth interventions to improve health literacy. *Health Informatics Journal,* 22(2), 81-98. Doi:10.1177/1460458214534092

Keulers, B. J., Welters, C. F., Spauwen, P. H., & Houpt, P. (2007). Can face-to-face patient education be replaced by computer-based patient education? A 16andomized trial. *Patient Educ Couns,* 67(1-2), 176-182. Doi:10.1016/j.pec.2007.03.012

Kim, J. J., Mohammad, R. A., Coley, K. C., & Donihi, A. C. (2015). Use of an iPad to provide warfarin video education to hospitalized patients. *J Patient Saf,* 11(3), 160-165. doi:10.1097/PTS.0000000000000062

Liang, B. A. (2001). The adverse event of unaddressed medical error: identifying and filling the holes in the health-care and legal systems. *J Law Med Ethics,* 29(3-4), 346-368.

Lopez-Olivo, M. A., Ingleshwar, A., Volk, R. J., Jibaja-Weiss, M., Barbo, A., Saag, K., . . . Suarez-Almazor, M. E. (2018). Development and pilot testing of multimedia patient education tools for patients with knee osteoarthritis, osteoporosis, and rheumatoid arthritis. *Arthritis Care Res* (Hoboken), 70(2), 213-220. Doi:10.1002/acr.23271

Majid, N., Lee, S., & Plummer, V. (2015). The effectiveness of orthopedic patient education in improving patient outcomes: a systematic review protocol. *JBI Database System Rev Implement Rep*, 13(1), 122-133. Doi:10.11124/jbisrir-2015-1950

Matsuoka, S., Tsuchihashi-Makaya, M., Kayane, T., Yamada, M., Wakabayashi, R., Kato, N. P., & Yazawa, M. (2016). Health literacy is independently associated with self-care behavior in patients with heart failure. *Patient Education & Counseling,* 99(6), 1026–1032. https://doi.org/10.1016/j.pec.2016.01.003

McCormack, L., Thomas, V., Lewis, M. A., & Rudd, R. (2017). Improving low health literacy and patient engagement: A social ecological approach. *Patient Education and Counseling,* 100(1), 8-13. Doi:10.1016/j.pec.2016.07.007

Miller, T. A. (2016). Health literacy and adherence to medical treatment in chronic and acute illness: A meta-analysis. *Patient Educ Couns,* 99(7), 1079-1086. Doi:10.1016/j.pec.2016.01.020

Mitchell, S. E., Sadikova, E., Jack, B. W., & Paasche-Orlow, M. K. (2012). Health literacy and 30-day postdischarge hospital utilization. *Journal of Health Communication,* 17325-338. Doi:10.1080/10810730.2012.715233

Mulhall, A. M., Zafar, M. A., Record, S., Channell, H., & Panos, R. J. (2017). A tablet-based multimedia education tool improves provider and subject knowledge of inhaler use techniques. *Respiratory Care,* 62(2), 163-171. Doi:10.4187/respcare.05008

Nurhayati, N., Songwathana, P., & Vachprasit, R. (2018). Surgical patients' experiences of readiness for hospital discharge and perceived quality of discharge teaching in acute care hospitals. *J Clin Nurs*. Doi:10.1111/jocn.14764

O'Leary, K. J., Balabanova, A., Patyk, M., Barnard, C., Liebovitz, D. M., & Williams, M. V. (2015). Medical inpatients' use of information technology: Characterizing the Potential to Share Information Electronically. *J Healthc Qual,* 37(4), 207-220. Doi:10.1111/jhq.12043

Panagioti, M., Skevington, S. M., Hann, M., Howells, K., Blakemore, A., Reeves, D., & Bower, P. (2018). Effect of health literacy on the quality of life of older patients with long-term conditions: a large cohort study in UK general practice. *Quality of Life Research, 27*(5), 1257-1268. doi:10.1007/s11136-017-1775-2

Prey, J. E., Woollen, J., Wilcox, L., Sackeim, A. D., Hripcsak, G., Bakken, S., . . . Vawdrey, D. K. (2014). Patient engagement in the inpatient setting: a systematic review. *J Am Med Inform Assoc*, 21(4), 742-750. Doi:10.1136/amiajnl-2013-002141

Rathert, C., Mittler, J. N., Banerjee, S., & McDaniel, J. (2017). Patient-centered communication in the era of electronic health records: What does the evidence say? *Patient Education and Counseling,* 100(1), 50-64. Doi:https://doi.org/10.1016/j.pec.2016.07.031

Rising, K. L., Hudgins, A., Reigle, M., Hollander, J. E., & Carr, B. G. (2016). "I'm just a patient": fear and uncertainty as drivers of emergency department use in patients with chronic disease. *Annals of Emergency Medicine,* 68(5), 536–543. https://doi.org/10.1016/j.annemergmed.2016.03.053

Sanford, K. D. (2013). Addressing staffing shortages in an era of reform. Hfm (Healthcare Financial Management), 67(12), 42-45. Sharkey, T. (2015). Health literacy tools for the veteran population. *Journal of Consumer Health on The Internet,* 19(1), 52-60. Doi:10.1080/15398285.2014.982052

Snavely, T. M. (2016). Data Watch. A Brief Economic Analysis of the Looming Nursing Shortage In the United States. *Nursing Economic$,* 34(2), 98-100.

Spangler L, Reed SD, Nekhyludov L, Grothaus LC, LaCroix AZ, Newton KM, … Newton, K. M. (2009). Provider attributes associated with hormone therapy prescribing frequency. *Menopause* (10723714), 16(4), 810–816. https://doi.org/10.1097/GME.0b013e318198e2fd

US Department of Veterans Affairs, Health Economics Resource Center (HERC), n.d. *What are the average daily costs of VA inpatient care?* Retrieved from https://www.herc.research.va.gov/include/page.asp?id=inpatient#mca-ipd

US Department of Veterans Affairs (n.d.) *Quality of care. Strategic Analytics for Improvement and Learning (SAIL).* Retrieved at https://www.va.gov/qualityofcare/measure-up/strategic_analytics_for_improvement_and_learning_sail.asp

Visscher, B. B., Steunenberg, B., Heijmans, M., Hofstede, J. M., Deville, W., van der Heide, I., & Rademakers, J. (2018). Evidence on the effectiveness of health literacy interventions in the EU: a systematic review. *BMC Public Health, 18*(1), 1414. doi:10.1186/s12889-018-6331-7

Voils, C. I., Sleath, B., & Maciejewski, M. L. (2014). Patient perspectives on having multiple versus single prescribers of chronic disease medications: results of a qualitative study in a veteran population. *BMC Health Services Research,* 14, 490. http://doi.org/10.1186/s12913-014-0490-8

Wali, H., Hudani, Z., Wali, S., Mercer, K., & Grindrod, K. (2016). A systematic review of interventions to improve medication information for low health literate populations. *Res Social Adm Pharm,* 12(6), 830-864. doi:10.1016/j.sapharm.2015.12.001

Watters, A., Bergstrom, A., & Sandefer, R. (2016). Patient engagement and meaningful use: assessing the impact of the HER incentive program on cultural competence in healthcare. *Journal Of Cultural Diversity*, 23(3), 114-120.

Wigfall, L. T., & Tanner, A. H. (2018). Health Literacy and Health-Care Engagement as Predictors of Shared Decision-Making Among Adult Information Seekers in the USA: a Secondary Data Analysis of the Health Information National Trends Survey. *J Cancer Educ,* 33(1), 67-73. doi:10.1007/s13187-016-1052-z

Winstanley, E., Zhang, Y., Burtchin, M., Campbell, P. , Beck, S., Bohenek, W., & Pahl, J. (2017). Inpatient experiences with MyChart bedside. *Telemedicine And E-Health,* 23(8), 691-693. Doi:10.1089/tmj.2016.0132

Yuen, E. Y. N., Knight, T., Ricciardelli, L. A., & Burney, S. (2018). Health literacy of caregivers of adult care recipients: A systematic scoping review. *Health Soc Care Community, 26*(2), e191-e206. doi:10.1111/hsc.12368

Zheng, M., Jin, H., Shi, N., Duan, C., Wang, D., Yu, X., & Li, X. (2018). The relationship between health literacy and quality of life: a systematic review and meta-analysis. *Health Qual Life Outcomes,* 16(1), 201. doi:10.1186/s12955-018-1031-7

VAPAHCS

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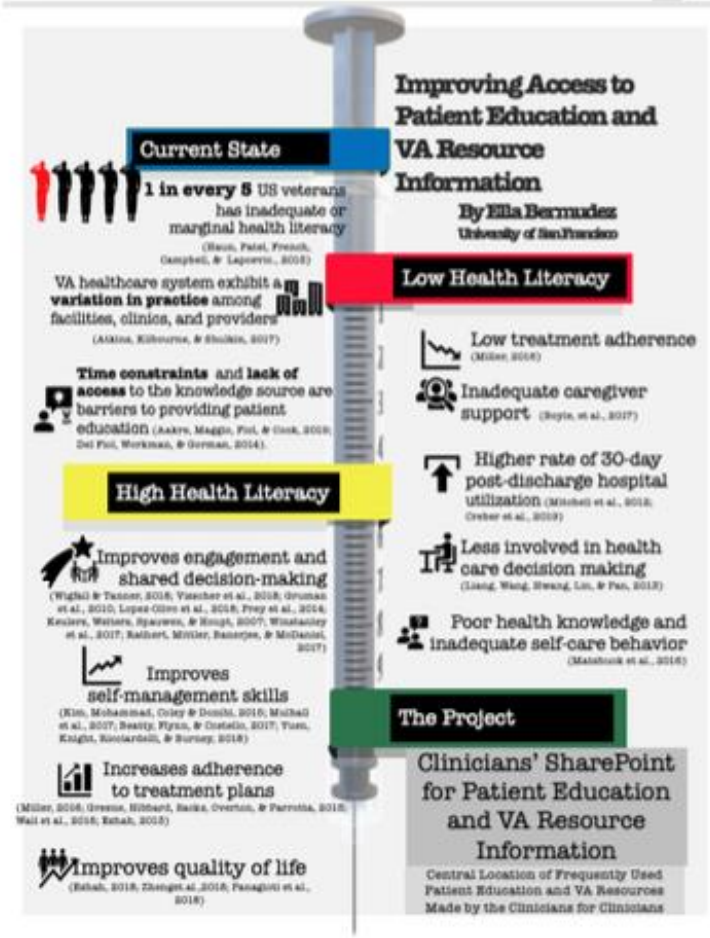
Attachment B: Staff Teaching Plan

Presentation Title: Improving Access to Patient Education and VA Resource Information
Intended Audience: Clinicians
Timeframe: 10 minutes
Learner's Objectives:
Content Outline: Current state, low health literacy vs high health literacy, the current sites of patient education materials, the SharePoint
Teaching Methods: Infographic
Evaluation Plan:



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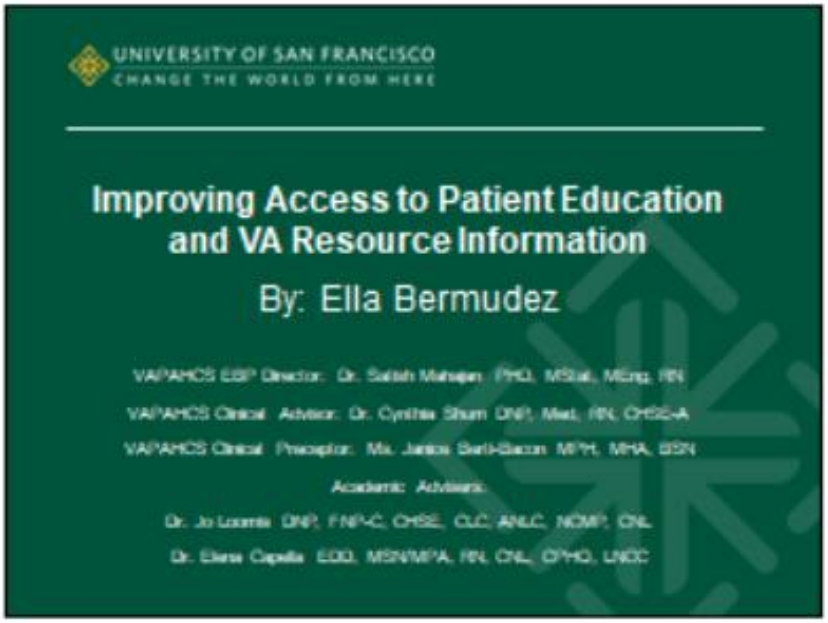

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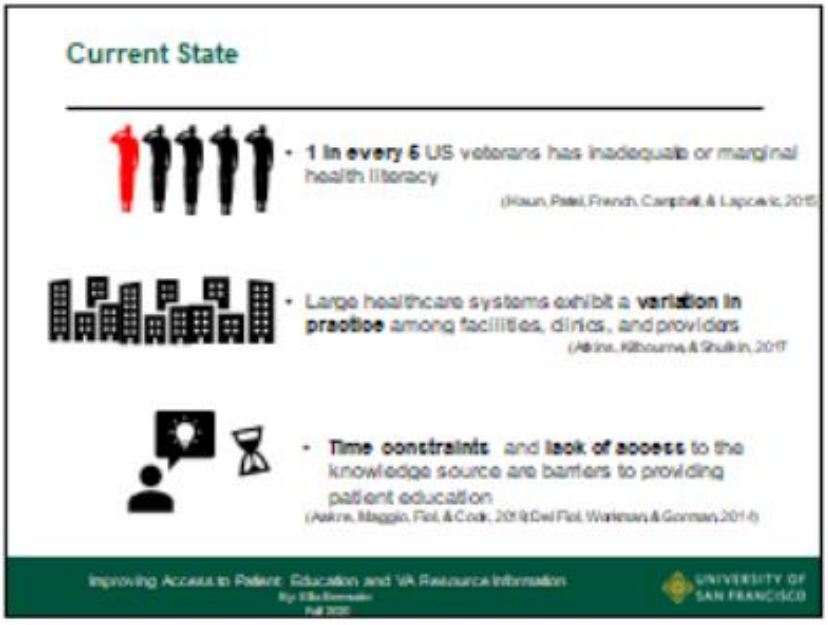

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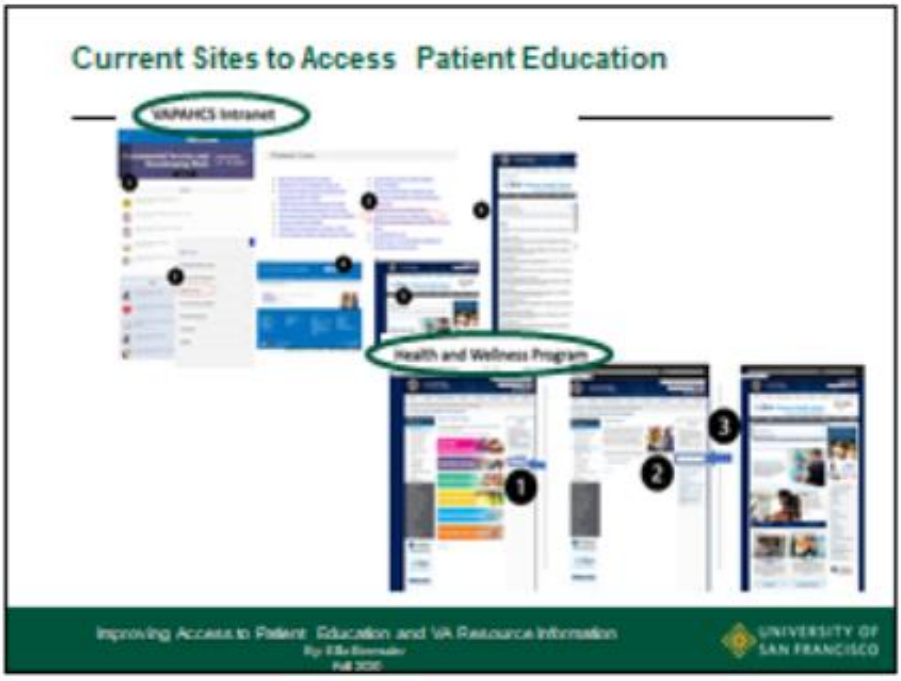

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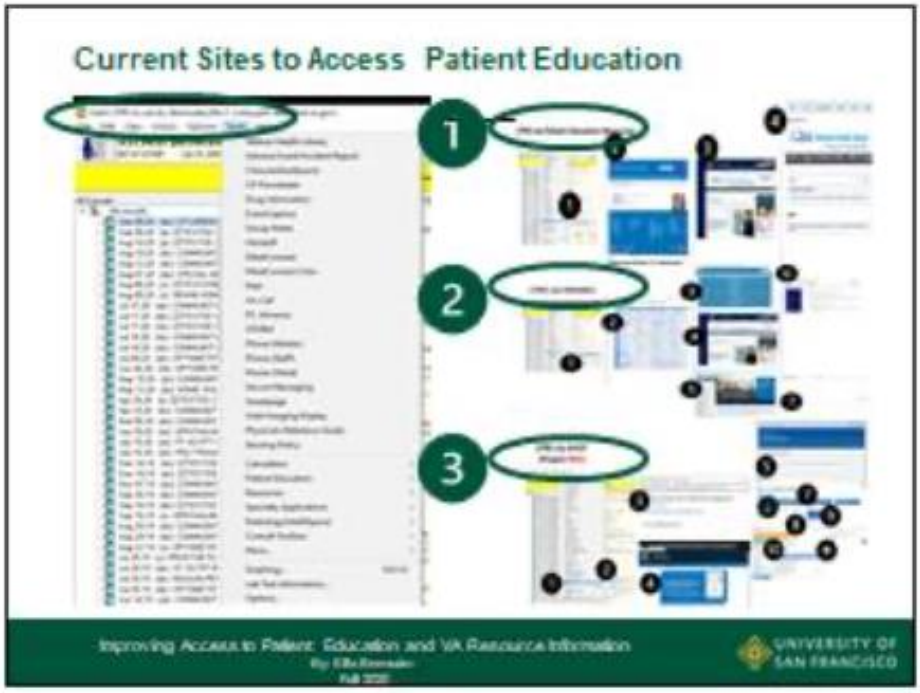

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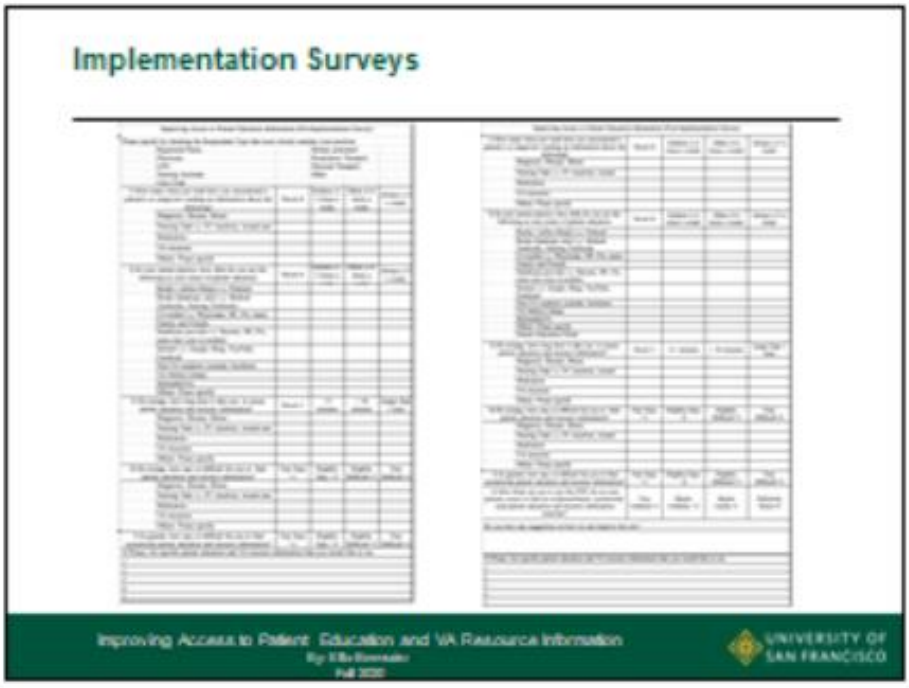

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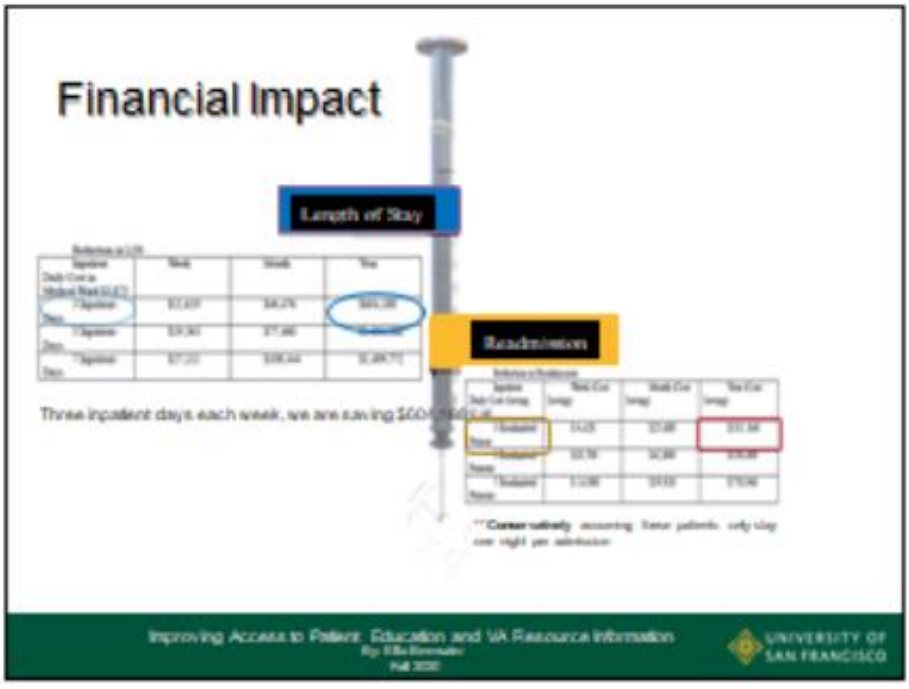

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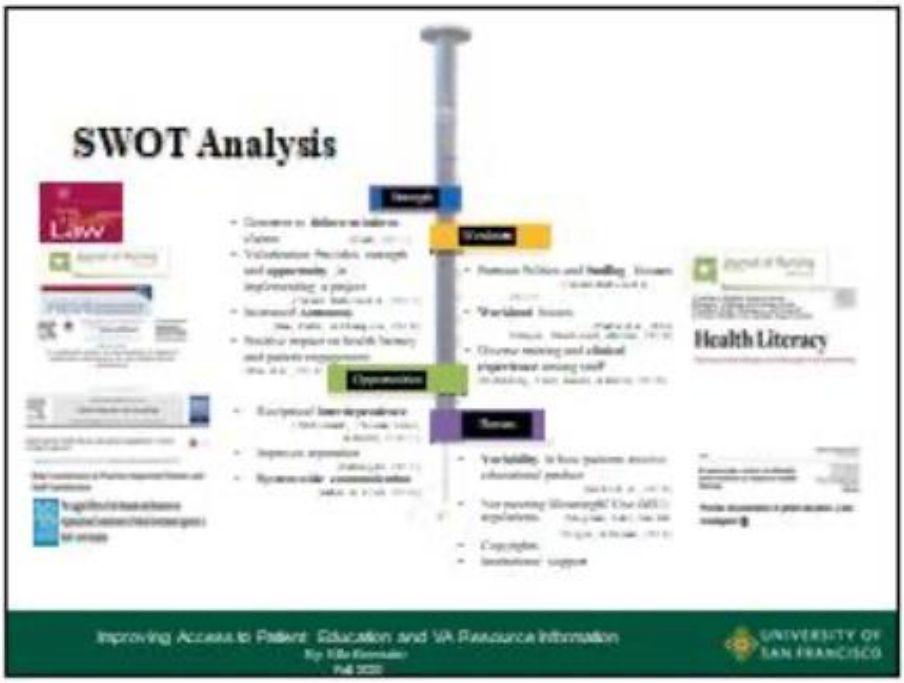

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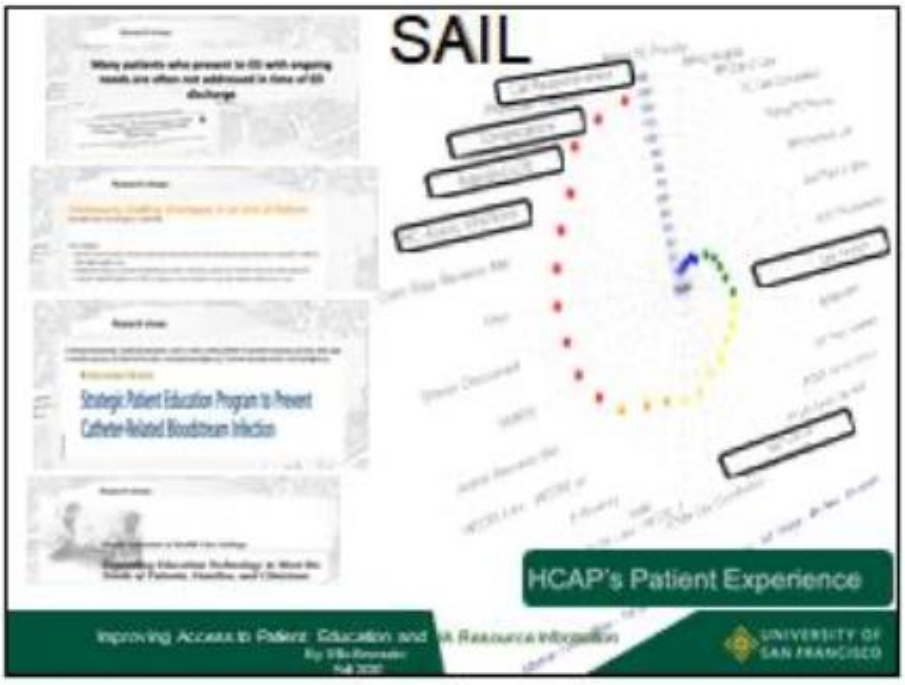

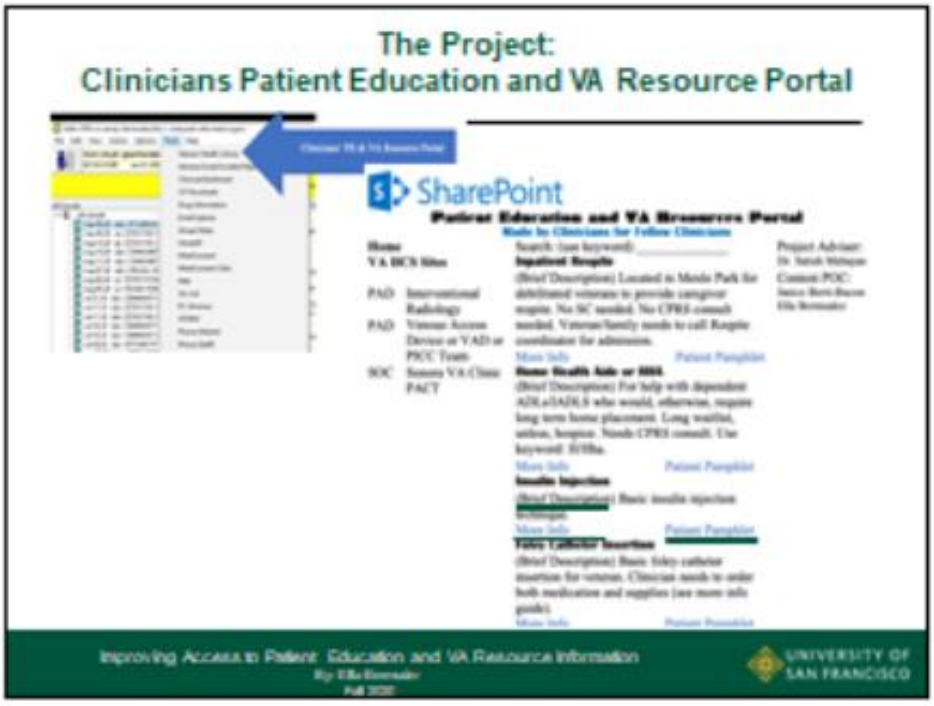
The Project:
Clinicians Patient Education and VA Resource Portal
SharePoint
Improving Access to Patient Education and VA Resource Information
UNIVERSITY OF SAN FRANCISCO

11

Reference
Improving Access to Patient Education and VA Resource Information
UNIVERSITY OF SAN FRANCISCO

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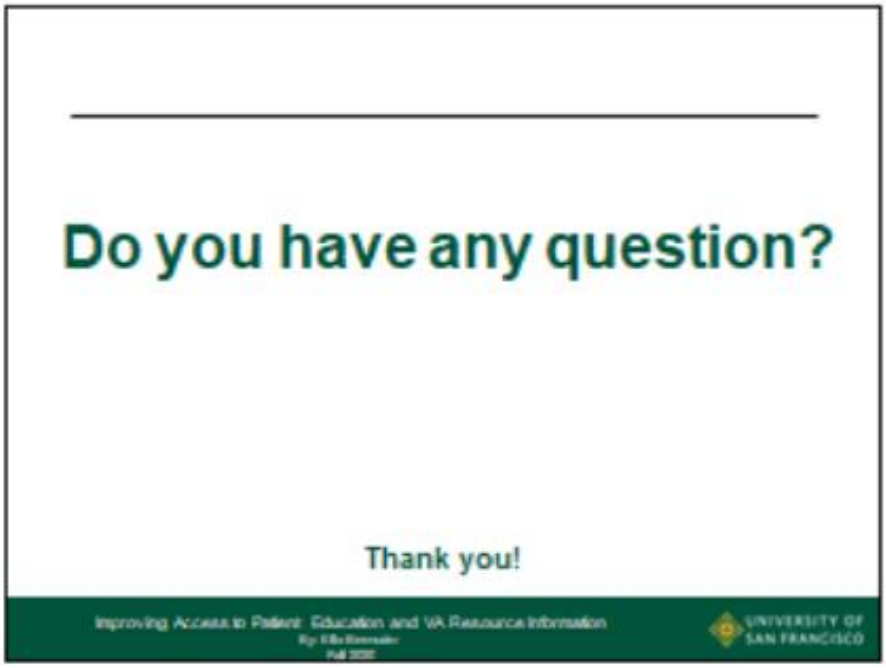

Attachment C: Patient Teaching Plan

Presentation Title:
Intended Audience:
Who will conduct the teaching?
Learner's Objectives:
Content Outline:
Teaching Methods:
Evaluation Plan:
Will the teaching be recorded in the patient's record? If so, who is responsible for documentation?

VAPAHCS

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Attachment D: QA/QI Determination Submission Instructions

1. All QA/QI determination submissions will be electronic (through email). Contact EBP Program Director or ACNS/E for information on who to include on the email submission.
2. Include in the email subject line: ***Project QA/QI Determination Request***
3. Include the following language in the body of your email (cut and paste)

I am submitting the following project **Improving Access to Patient Education and Resources Information** *for QA/QI determination.*

This project is being completed in partial fulfillment of a Doctor of Nursing Practice at the University of San Francisco.

I have informed my Nurse Manager (or immediate supervisor), Service Line Associate Chief Nurse, and the Associate Chief Nurse for Research (ACN-R) of my proposed plan to conduct this project. They are included on this email.

I have read the QA/QI policy and understand that my project may meet the definition of research as specified in VHA Handbook 1058.05. If my project is determined to be research, I will submit my project for review to the appropriate VAPAHCS review committees. I will not initiate any work on the project until I have received notification from the Associate Chief of Staff for Research and Development (ACOS/R&D) that my project has received all required approvals.

Project Implementation: Please check one:

__√__ *The project has not been started. I will not implement my proposed project or collect any data related to this project until I receive all of the required VAPAHCS approvals. I will contact the IRB Chair and the EBP Program Director or ACNS/E immediately in the event that project activities occur prior to receiving all required VAPAHCS approvals*

____ *The project has been started. I agree to stop project implementation until I receive all of the required VAPAHCS approvals. Please provide complete detail as to what has been done up to this date.*

The following attachments are included:

1. *Project Proposal*
2. *VAPAHCS QA/QI Worksheet*

Thank you for your consideration.

4. Include the following documents in your email:
    a. Project Proposal
    b. QA/QI Checklist
    c. Evidence of stakeholder support—Please contact EBP Program Director or ACNS/E for help securing stakeholder support
5. Allow 4-6 weeks turn-around time between submission and determination.
6. QA/QI VAPHS Documents:

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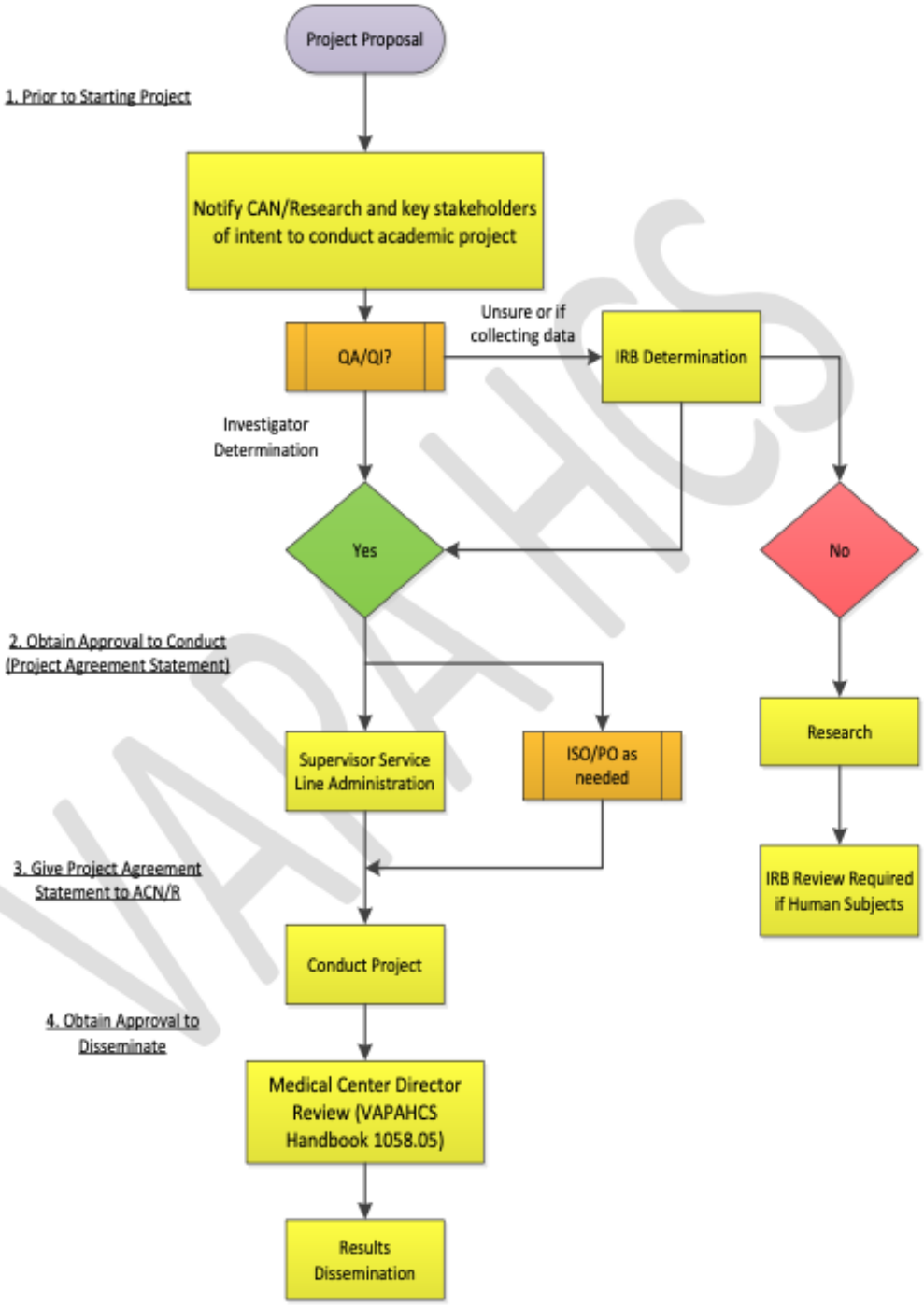
QA/QI Determination for Clinical Projects Flowchart



VAPAHCS

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Capstone Project Title: **Improving Access to Patient Education and VA Resources Information**
Responsible Staff Member: Ella Bermudez
Department: Case Management

Reason for Capstone QA/QI Effort:
☐ VHA/VISN Directive ☐ Local Directive ■ Other For DNP completion

CONDITIONS FOR DETERMINATION OF QA/QI STATUS	YES	NO
The primary intent of the project is not peer reviewed publication and if publication of the results was prohibited, the project would still have merit as a QA/QI effort.	☒	☐
There is a documented commitment, in advance of data collection, to a corrective plan given any number of study outcomes.	☒	☐
The responsible staff member has both the clinical supervisory responsibility and the authority to impose a corrective plan based on the outcomes of the project.	☒	☐
The project does not involve prospective assignment of patients to different procedures or therapies based on a predetermined plan such as randomization.	☒	☐
The project does not involve a "control group" in whom therapeutic or study intervention is intentionally withheld to allow an assessment of its efficacy.	☒	☐
The project does not involve the prospective evaluation of a drug, procedure, or device that is not currently approved by the FDA for general use (including "off-label" indications).	☒	☐
Human participants will not be exposed to additional physical, psychological, social, or economical risks or burdens (beyond patient satisfaction surveys) in order to make the results of the project generalizable.	☒	☐
Adequate protections are in place to maintain confidentiality of the data to be collected and there is a plan for who can access any data containing participant identifiers.	☒	☐
The project is likely to improve patient care activities and/or outcomes at the VA Palo Alto Healthcare System alone or as part of the VISN-21 or VHA.	☒	☐

In order for the study to be classified as a QA/QI effort, the answers to all of the above questions must be "Yes". If one or more answer is "No" then the project requires a full review and approval by Stanford University IRB.
Note: If the investigator intends to publish any literature referencing this project, submission of a protocol to EBP Program Director, ACNS/E, Associate Director of Patient Care Services/Nursing, and the Facility Director, approval is required PRIOR to submission of the abstract or manuscript.

Guidance for Completing Capstone Projects at VAPAHCS
10/13/2020

Reviewer Comments:

/ep/
Reviewer Name: Click here to enter a date.

Attachment E: Capstone Project Determined to be QA/QI Project Agreement Statement

Date: 10/20/2020

To the EBP Program Director and ACNS/E:

I have completed VAPHS annual security training requirements on 8/7/2020 and will comply with all VHA information security standards and requirements.

My project was determined to be QA/QI on 6/25/2020 A copy of the QA/QI Determination is attached.

I have read and will comply with VAPAHCS guidance and policies on conducting QA/QI projects at VAPAHCS.

I will not start my project until I have received final concurrence from the key stakeholders as listed on the Clinical Project Checklist.

I have read and will comply with the guidance on disseminating QA/QI projects as outlined in Handbook 1058.05. I will obtain all required approvals prior to disseminating the results of my project.

Name (printed):	Ella S. Bermudez		
Signature:		Date:	Click here to enter a date.
Project Title:	**Improving Access to Patient Education and VA Resources Information**		

Guidance for Completing Capstone Projects at VAPAHCS
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Attachment F: Office of Research Oversight—Documentation of Non-Research Activities

Office of Research Oversight
Documentation of Non-Research Activities

Title of Proposed Publication: **Improving Access to Patient Education and Resource Information**

Author Attestation

As an author of the publication referenced above (copy attached), I attest that the findings reported in the publication were not derived, in whole or in part, from activities constituting research as described in VHA Handbook 1058.05. *(Provide the following for each VA author.)*

Lead Author Signature:	Click here to enter a date.
Lead Author Name: Ella Bermudez	VA Duty Station: Nursing
Co-Author Signature:	Click here to enter a date.
Co-Author Name: TBD	VA Duty Station:
Co-Author Signature:	Click here to enter a date.
Co-Author Name: TBD	VA Duty Station:
Co-Author Signature:	Click here to enter a date.
Co-Author Name:	VA Duty Station:

Attestation of Designated Program Office or Facility Official

As the designated representation of the VHA Program Office or Facility listed below, I have reviewed the activities reported in the publication and attest that these activities did not constitute research as described in VHA Handbook 1058.05.

Signature of Designated Official Click here to enter a date.
Name: Thomas J. Fitzgerald III
Title: Facility Director
Program Office or Facility: VA Palo Alto Healthcare System

Note: Each VA author and co-author must retain a copy of the documentation for a minimum of 5 years after publication and in accordance with any applicable records retention schedules.

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Attachment F-1: Pre-Implementation Survey

Improving Access to Patient Education Information (Pre-Implementation Survey)					
Please specify by checking the Respondent Type that most closely matches your position					
_____	Physician/PA/NP	_____	Dietitian/Dietary personnel		
_____	Nurse/RN/LVN/LPN	_____	Respiratory/Physical/Occupational		
_____	Nursing Assistant/CAN	_____	Therapist		
_____	Pharmacist	_____	Other		
_____	Unit Clerk/Appointment Coordinator				
1) How many times per week have you **encountered** a patient/s or caregiver/s needing an information about the following?		Never=0	Seldom (1-2 times a week)	Often (3-4 times a week)	Always (>5 x week)
	Diagnosis, Disease, Illness				
	Nursing Task i.e. FC insertion, wound/drain care				
	Medication i.e. nebulizer/inhaler use				
	VA resources i.e. Transportation, Programs,				
	Others: Please specify				
2) In your current practice, how **often** do you use the following as your source of patient education information?		Never=0	Seldom (1-2 times a week)	Often (3-4 times a week)	Always (>5 x week)
	Books (online library) i.e. Pubmed				
	Books (hardcopy only) i.e. Medical Testbooks, Nursing Textbooks				
	Co-worker i.e. Physicians, NP, PA, nurse				
	Family and Friends				
	Healthcare provider i.e. Doctors, NP, PA, nurse (not your co-worker)				
	Internet i.e. Google, Bing, YouTube, Facebook				
	Non-VA academic journals, brochures				
	VA Online Library				
	MyhealtheVet				
	Others: Please specify				
3) On average, how **long** does it take you to access patient education and resource information?		Never=1	<5 minutes	< 30 minutes	longer than 1 hour
	Diagnosis, Disease, Illness				
	Nursing Task i.e. FC insertion, wound/drain				
	Medication i.e. nebulizer/inhaler use				
	VA resources i.e. Transportation, Programs,				
	Others: Please specify				
4) On average, how **easy or difficult** for you to find information on…		Very Easy =1	Slightly Easy =2	Slightly Difficult=3	Very Difficult=4
	Diagnosis, Disease, Illness				
	Nursing Task i.e. FC insertion, wound/drain				
	Medication i.e. nebulizer/inhaler use				
	VA resources i.e. Transportation, Programs,				
	Others: Please specify				
5) In general, how easy or difficult for you to find **systemwide** patient education and resource information?		Easy =1	Neutral=2		Difficult=3
5) Please, list specific patient education and VA resource information that you would like to see					
1					
2					
3					
4					
5					

Guidance for Completing Capstone Projects at VAPAHCS
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Attachment F-2: Post-Implementation Survey

Improving Access to Patient Education Information (Post-Implementation Survey)					
1) How many times per week have you **encountered** a patient/s or caregiver/s needing an information about the following?		Never=0	Seldom (1-2 times a week)	Often (3-4 times a week)	Always (>5 x week)
	Diagnosis, Disease, Illness				
	Nursing Task i.e. FC insertion,				
	Medication i.e. nebulizer/inhaler use				
	VA resources i.e. Transportation,				
	Others: Please specify				
2) In your current practice, how **often** do you use the following as your source of patient education		Never=0	Seldom (1-2 times a week)	Often (3-4 times a week)	Always (>5 x week)
	Books (online library) i.e. Pubmed				
	Books (hardcopy only) i.e. Medical Textbooks, Nursing Textbooks				
	Co-worker i.e. Physicians, NP, PA, nurse				
	Family and Friends				
	Healthcare provider i.e. Doctors, NP, PA, nurse (not your co-worker)				
	Internet i.e. Google, Bing, YouTube, Facebook				
	Non-VA academic journals, brochures				
	VA Online Library				
	MyhealtheVet				
	Others: Please specify				
	Patient Education Portal				
3) On average, how **long** does it take you to access patient education and resource information?		Never=1	<5 minutes	< 30 minutes	longer than 1 hour
	Diagnosis, Disease, Illness				
	Nursing Task (FC Self-cath, wound/drain care etc)				
	Medication (includes nebulizer/inhaler				
	VA resources				
	Others: Please specify				
4) On average, how **easy or difficult** for you to find patient education and resource information?		Very Easy =1	Slightly Easy =2	Slightly Difficult=3	Very Difficult=4
	Diagnosis, Disease, Illness				
	Nursing Task i.e. FC insertion, wound/drain care				
	Medication i.e. nebulizer/inhaler use				
	VA resources i.e. Transportation,				
	Others: Please specify				
5) In general, how easy or difficult for you to find **systemwide** patient education and resource		Easy =1	Neutral=2		Difficult=3
6) How likely are you going to use the SharePoint site as your primary source to find (1 star=unlikely to 5 stars=strongly likely)					
	Diagnosis, Disease, Illness	☆ ☆ ☆ ☆ ☆			
	Nursing Task i.e. FC insertion,	☆ ☆ ☆ ☆ ☆			
	Medication i.e. nebulizer/inhaler use	☆ ☆ ☆ ☆ ☆			
	VA resources i.e. Transportation,	☆ ☆ ☆ ☆ ☆			
	Others: Please specify	☆ ☆ ☆ ☆ ☆			
Do you have any suggestion on how we can improve the site?					
5) What patient education and resource information would you like to add to the SharePoint site?					
1					
2					
3					
4					
5					

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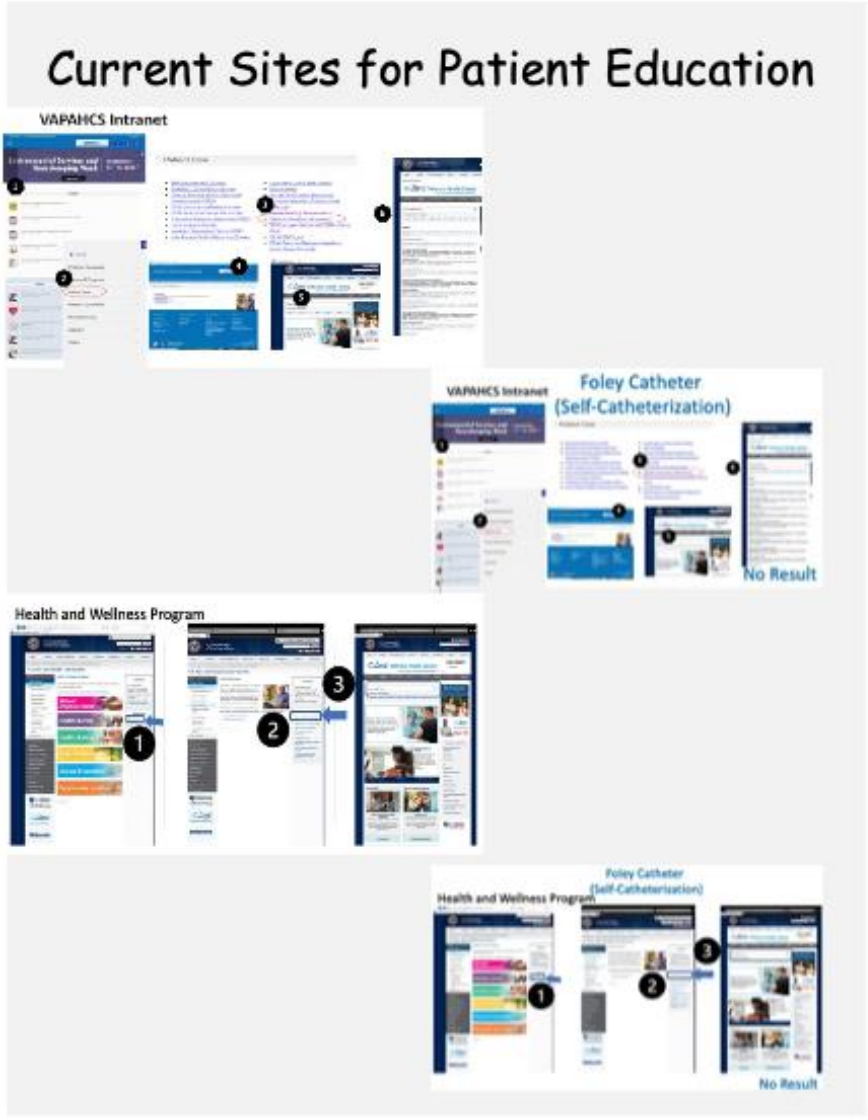
Attachment G-1:



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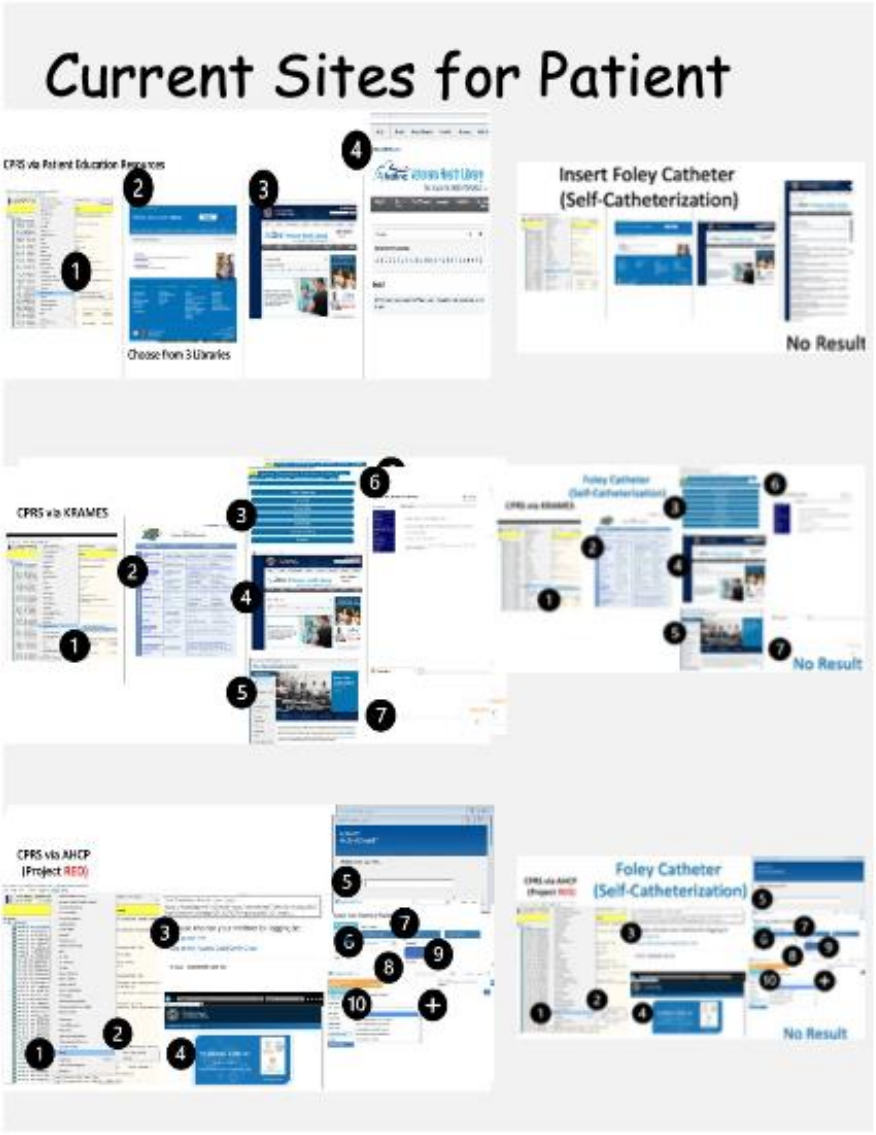
Attachment G-2



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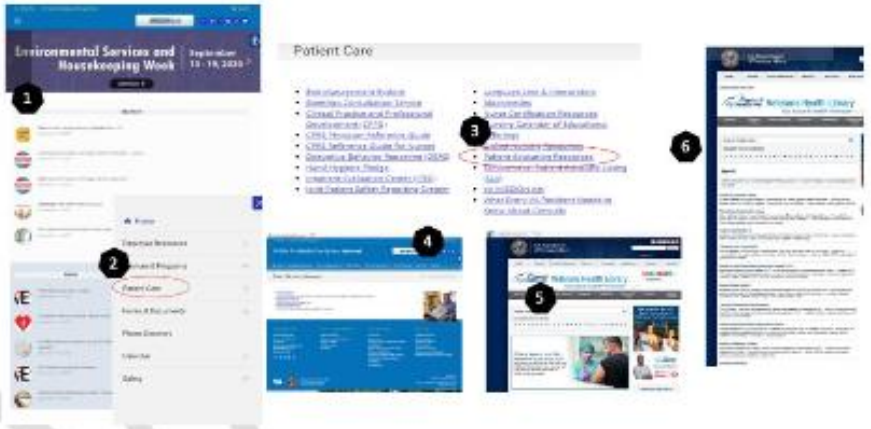
Attachment H

VAPAHCS Intranet

VAPAHCS Intranet



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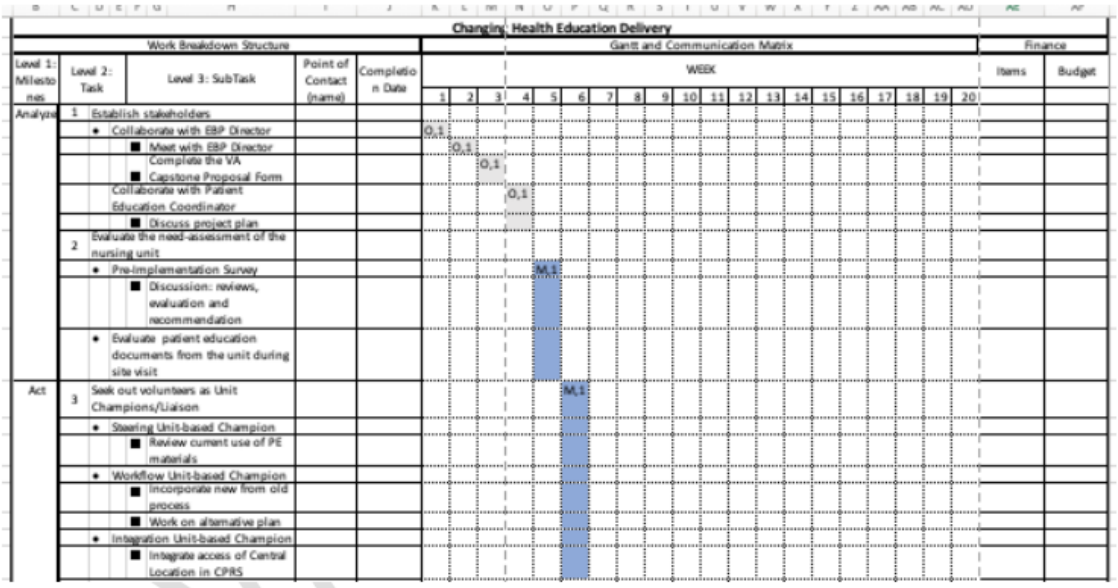
Attachment G: Proposed Intervention; Work Breakdown Structure (WBS), Gannt, Communication Matrix and Budget



Changing Health Education Delivery

Work Breakdown Structure					Gantt and Communication Matrix																						Finance	
Level 1: Milestones	Level 2: Task	Level 3: SubTask	Point of Contact (name)	Completion Date	WEEK																						Items	Budget
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				
Analyze	1	Establish stakeholders																										
		• Collaborate with EBP Director			O,1																							
		■ Meet with EBP Director				O,1																						
		■ Complete the VA Capstone Proposal Form					O,1																					
		Collaborate with Patient Education Coordinator						O,1																				
		■ Discuss project plan																										
	2	Evaluate the need-assessment of the nursing unit																										
		• Pre-implementation Survey							M,1																			
		■ Discussion: reviews, evaluation and recommendation																										
		• Evaluate patient education documents from the unit during site visit																										
Act	3	Seek out volunteers as Unit Champions/Liaison								M,1																		
		• Steering Unit-based Champion																										
		■ Review current use of PE materials																										
		• Workflow Unit-based Champion																										
		■ Incorporate new from old process																										
		■ Work on alternative plan																										
		• Integration Unit-based Champion																										
		■ Integrate access of Central Location in CPRS																										

Legend:
M: Meeting face to face
O: Online
For example: "M,2" means Face to face meeting twice week, "O, 3" means Online meeting thrice per week

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Changing Health Education Delivery

Work Breakdown Structure					Gantt and Communication Matrix																				Finance	
Level 1: Milestones	Level 2: Task	Level 3: SubTask	Point of Contact (name)	Completion Date	WEEK																				Items	Budget
					1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		
Act	4 Set-up Sharepoint																									
		■ Collect needed patient education materials									M,1															
		■ Request Sharepoint via IT										O,3														
		○ Post collected PE materials via											O,3	O,3												
		○ Grant access to champions													O,1											
	5 Go-Live Event																									
		■ Final meeting with unit-based champions														O,1										
		■ Start posting How-to's in each unit TV monitor															O,1	O,1	O,1	O,1	O,1					
Anchor	6 Sustainability																									
	• Collect Post Implementation Surve																					O,1				
		■ hare result with the unit sta																					O,1			
	• Workflow Unit-based Champion																									
		■ Adjust the alternative plan if needed																								
		■ Merge with Steering Committee																								
	• Integration Unit-based Champion																									
		■ Assists DNP Student in Staff Survey Completion																								
		■ Merge with Steering Committee																								
	• Steering Unit-based Champion																									
		■ Update aggregated patient education materials as needed																								
	• Deliver final report to Patient Education Committee																							O,1		

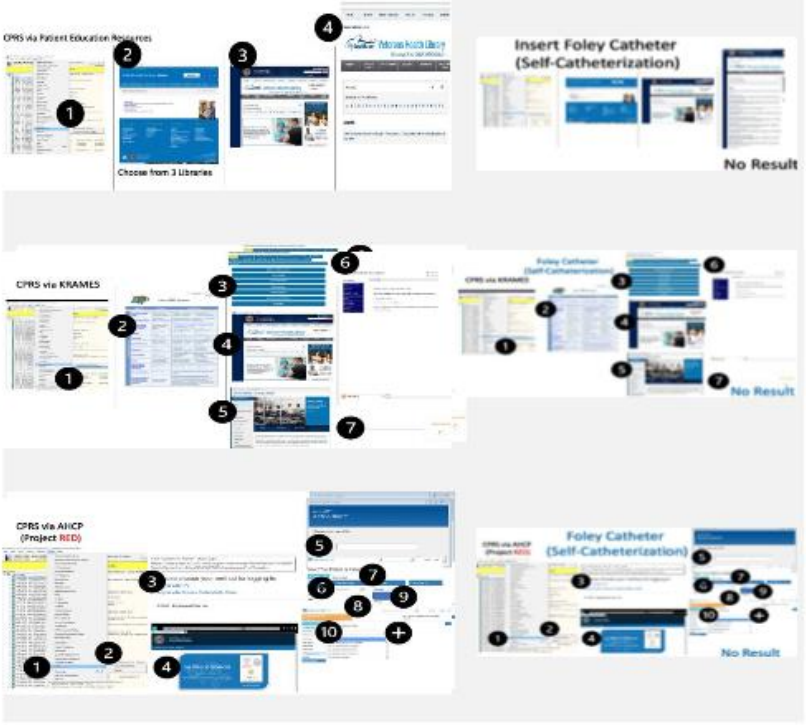
Legend: M= Meeting (Face to Face Meeting), O=Online Meeting, Numbers after M, O or O/M denotes frequency of meetings

Guidance for Completing Capstone Projects at VAPAHCS
10/13/2020

Attachment H-1

Attachment H-2

Current Sites for Patient



The Project Plan			
Milestone	**Description/ Enumeration of Tasks**	**Start Date**	**End Date**
Establish Stakeholders	Presented the project individually via online and/or face-to-face to the stakeholders	October 14	October 23
	Notified Service Line Chief Naungayan Pilot Unit	October 26	October 27
	Identified Pilot Unit: IICU or 3F	October 27	October 27
Analyze or Assessment Phase (Evaluate the Needs-Assessment of the Pilot Unit)	Presented Project to Service-Line Associate Chief Rachel Mack of the Pilot Unit	October 28	October 28
	Presented Project to the Pilot Unit Nurse Manager (Mr. Arce) and Assistant Managers (Mr. Leong and Ms. Gacad). Advised to coordinate closely with the Unit Charge Nurse of the shift	October 28	October 28
	Discussed workflow of the unit and project integration to the unit with Mr. Leong	October 28	October 28
	Reviewed current workflow of providing patient education with Mr. Leong	October 28	October 28
	Attended the unit's Shift-Change AM and PM Huddles for the DNP student role and the pre-implementation survey	October 29, 30, 31, November 1, 2	November 2
	Distributed Pre-implementation survey online and hardcopy to IICU staff https://usfca.qualtrics.com/jfe/form/SV_2cvD16z8qvZuTU9	October 29	Ongoing
Act or Implementation phase	Requested to have SharePoint site	October 14	October 26
	Gather more patient education and resource information materials for the SharePoint site from various reliable sources	October 26	Ongoing
	Started posting patient education and resource information to the SharePoint site https://dvagov.sharepoint.com/sites/PAL/vhec/ClinicianPtEdResource?e=1%3A1b5abe09eb7d4069ad9c650ce9e6440c	October 27	Ongoing
	Requested IT to remove site restriction for general viewing and printing of information materials posted	November 4	November 4
	Requested IT to link the site to CPRS	October 28	November 6
	SharePoint site linkage to CPRS – Go Live Event	November 4	November 6
	Updated IICU staff of SharePoint Site via email	November 5	November 5

Anchor or Sustainability Phase	Follow-up with unit-based contributors/experts from different VA units/sites for frequently asked topics	October 29	Ongoing
	Attend the unit's Shift-Change AM and PM Huddles for the post-implementation survey (Qualtrics site here:	November 18	December 1
	Distribute post-implementation survey online and hardcopy to IICU staff	November 18	November 27
	Attend the monthly Health Promotion and Disease Prevention/Veteran Health Education joint-meeting for Project presentation and sign-up more unit-based contributors/experts	December 1	
	Present the VA Capstone Project to USF	December 10	

VA's Without Compensation

DEPARTMENT OF VETERANS AFFAIRS
Palo Alto Health Care System
3801 Miranda Ave.
Palo, Alto, CA 94304

Date: 02/14/2019 In Reply Refer to: **640/05A**

Name: Ella Bermudez

Address: 8522 Aspen Way

Gilroy, CA 95020

Dear Ella Bermudez,

Welcome to the Department of Veterans Affairs. You will be assigned to our health care system as a Student Nurse from University of San Francisco from 02/14/2019, through 12/25/2019, under the authority of Title 38 U.S.C. 7406 on an intermittent basis (Rotating less than a total of 6 months or 180 aggregate days in a 1 year period; If rotating more than a total of 6 months or 180 aggregate days in a 1 year period, contact your VAPAHCS representative to process the correct security ID badge). During your period of affiliation with our health care system, you are authorized to perform services as directed by the Associate Chief of Nursing Education, Nursing Service.

In accepting this assignment, you will receive no monetary compensation, and you will not be entitled to those benefits normally given to regularly-paid employees of the Veterans Health Administration (VHA), such as leave, retirement, etc.

If you agree to these conditions, please sign the statement below, and return this letter to your respective Human Resources Specialist. This agreement may be terminated at any time by either party by written notice of such intent.

Please indicate your veteran status by circling the appropriate number/category below.

Sincerely,

for Brian E. Klein
Chief, Human Resources Management Service

I agree to serve in the above capacity under the conditions indicated.

Veteran Status
*1 – Vietnam Veteran**
2 – Other Veteran
3 – Non-Veteran

**For this purpose, a Vietnam Veteran is one with service between August 5, 1964 and May 7, 1975.*

Signature

2/15/2019
Date

Pursuant to the Privacy Act of 1974, the information about your veteran status is requested under Title 38, United States Code and will be used to help identify veteran status of all VA trainees for statistical and program-planning purposes. It will not be used for any other purpose. Disclosure of the information sought is voluntary. Failure to furnish this information will have no adverse effect on any benefit to which you may be entitled.

FL 10-294
Oct 2000(AS)

DEPARTMENT OF VETERANS AFFAIRS
Palo Alto Health Care System
3801 Miranda Ave.
Palo, Alto, CA 94304

Date: 8/13/2020

In Reply Refer to: **640/05A**

Name: Ella S. Bermudez

Address: 8522 Aspen Way
Gilroy, CA 95020

Dear Ella S. Bermudez,

Welcome to the Department of Veterans Affairs. You will be assigned to our health care system as a WOC from August 18, 2020 through May 07, 2021 under the authority of Title 38 U.S.C. 7406 on an intermittent basis (Rotating less than a total of 6 months or 180 aggregate days in a 1 year period; If rotating more than a total of 6 months or 180 aggregate days in a 1 year period, contact your VAPAHCS representative to process the correct security ID badge). During your period of affiliation with our health care system, you are authorized to perform services as directed by the Associate Chief of Nursing Education, Nursing Service.

In accepting this assignment, you will receive no monetary compensation and you will not be entitled to those benefits normally given to regularly-paid employees of the Veterans Health Administration (VHA), such as leave, retirement, etc.

If you agree to these conditions, please sign the statement below and return this letter to your respective Human Resources Specialist. This agreement may be terminated at any time by either party by written notice of such intent.

Please indicate your veteran status by circling the appropriate number/category below.

Sincerely,

Brian E. Klein
Human Resources Management Service

I agree to serve in the above capacity under the conditions indicated.

Veteran Status
*1 – Vietnam Veteran**
2 – Other Veteran
3 – Non-Veteran

**For this purpose, a Vietnam Veteran is one with service between August 5, 1964 and May 7, 1975.*

Signature

8/13/2020
Date

Pursuant to the Privacy Act of 1974, the information about your veteran status is requested under Title 38, United States Code and will be used to help identify veteran status of all VA trainees for statistical and program-planning purposes. It will not be used for any other purpose. Disclosure of the information sought is voluntary. Failure to furnish this information will have no adverse effect on any benefit to which you may be entitled.

FL 10-294
Oct 2000(AS)

Appendix C: Evidence Evaluation Table

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Eshah, N. F. (2013). Prediscahrge education improves adherence to a healthy lifestyle among Jordanian patients with acute coronary syndrome - *Nurs. Health Sci,* 15(3), 273-279. doi:10.1111/nhs.12018	health belief model (HBM).	Quasi-experimental pretest–post-test design: Interviewed 104 participants, 51% of whom had myocardial infarction and 49% had unstable angina.	A nonequivalent control group pretest–post-test design was used. Patients who were admitted to a public teaching hospital in Jordan with a diagnosis of ACS comprised the target population. A	IV: discharge education DV: healthy lifestyle adherence	Descriptive statistics (mean, standard deviation, frequencies, and percentages) were used to describe the study sample. The chi-square (c^2) test and independent t-test were used to compare between the two groups at baseline and to test the study hypothesis. Statistical assumptions for the t-test were met, and findings were considered significant if P □□0.05. * The Statistical Package of Social Science (SPSS) Version 15	Results showed that the participants from the experimental group scored significantly higher on three components of healthy lifestyle, health responsibility, nutrition, and interpersonal relations (mean scores (experimental vs control group): health responsibility, 2.46 ± 0.65 versus 2.09 ± 0.52 (t = 3.15, P = 0.002); nutrition, 2.55 ± 0.55 versus 2.30 ± 0.41 (t = 2.55, P = 0.01); and interpersonal relations, 2.95 ± 0.50 versus 2.72 ± 0.50 (t = 2.32, P = 0.02; Table 3).	The results showed a successful application of the method, which led to a significant improvement in health responsibility, nutrition, and interpersonal relations in comparison with the control group. *patients in eastern cultures are heavily dependent on their families, and therefore, experiencing ACS may have led to an increased sense of need for and reliance on other people.	**Strengths:** Participants in the experimental group improved their health responsibility, which is attributed to the employment of the HBM in health education. **Limitations:** the use of the convenient sampling technique, no random assignment to groups, short follow-up period, and the use of the self-report to collect data about patients' risk factors. **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

IV: Independent Variable; DV: Dependent Variable
Table: Melynk, B.N., & Fineout-Overholt, E. (2015). Evidence-based practice in nursing & healthcare: a guide to best practice (3rd ed). Philadelphia: Wolters Kluwer

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Greene, J., Hibbard, J. H., Sacks, R., Overton, V., & Parrotta, C. D. (2015). When patient activation levels change, health outcomes and costs change, too. *Health Aff (Millwood), 34*(3), 431-437. doi:10.1377/hlthaff.2014.0452		longitudinal study	primary care patients at Fairview Health Services, a large not-for-profit health care system with forty-four primary care clinics in Minnesota. The first group had a baseline PAM score collected in 2010 and follow-up outcomes collected in 2012 (n _ 32; 060). The second group had two scores taken in two consecutive years, between 2010 and 2012 (n _ 10; 957).	IV: Patient Activation Measure, refers to having the knowledge, skill, and confidence to manage one's health and health care. DV: thirteen health-related outcomes across four areas: clinical indicators, healthy behaviors, preventive screening, and avoidance of costly utilization.	Since 2010 Fairview has routinely collected Patient Activation Measure (PAM) scores during primary care office visits. Multivariate regression models (bivariate versions of all analyses are available upon request from the authors). *Analyses were conducted using SAS version 9.2 (Cary, NC).	A higher level in 2010 was related to greater odds of having HDL, triglycerides, and PHQ-9 in the normal range; not smoking or being obese; having had the preventive cancer screening tests for women (Pap smear and mammography); and not having costly utilization (ED visit or hospitalization) in 2012. The predicted average per capita costs in 2012 were the same ($6,719) for patients at levels 3 and 4 in 2010 (Exhibit 2). The costs were 12 per- cent higher for patients at level 2 and 8 percent higher for those at level 1.	*baseline Patient Activation Measure levels are related to clinical, behavioral, and utilization outcomes two years later, as well to future health care costs. * when PAM levels change, health outcomes tend to change in the same direction, and costs follow as predicted.	**Strengths:** Patient Activation Measure, refers to having the knowledge, skill, and confidence to manage one's health and health care. **Limitations:** Patient Activation Measure, refers to having the knowledge, skill, and confidence to manage one's health and health care. **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

IV: Independent Variable; DV: Dependent Variable
Table: Melynk, B.N., & Fineout-Overholt, E. (2015). Evidence-based practice in nursing & healthcare: a guide to best practice (3rd ed). Philadelphia: Wolters Kluwer

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Gruman J., Rovner, M. H., French, M. E., Jeffress, D., Sofaer, S., Shaller, D., & Prager, D. J. (2010). From patient education to patient engagement: implications for the field of patient education. *Patient Educ Couns, 78*(3), 350-356. doi:10.1016/j.pec.2010.02.	"Engagement Behavior Frame work" (EBF)	Literature review and Health behavior and health education conference review	environmental scan of 20 patient and consumer advocacy organizations such as Consumers Union and Families USA and reviewed their Web sites to collect language and white papers relevant to engagement.57 key informants through the advocacy and literature reviews and conducted semi-structured telephone interviews with representatives of consumer/patient groups, labor unions, purchasers, and health plans and universities who had conducted research and/or written and spoken publicly about patient or consumer engagement.	IV: patient education DV: patient engagement	EBF as a coding scheme to perform a content analysis of scientific sessions at national professional conferences relevant to patient education in 2006–2007 to provide a rudimentary estimate of the quantity of reports on research and intervention for each of the behaviors in the framework.	To construct the EBF, each of the behaviors we collected through these activities were classified as serving two broad sets of individual aims: (1) ''managing health care,'' and (2) ''managing health'' *. Within ''managing health care,'' behaviors were classified as those related either to the role of patient in the medical encounter or to the consumer–purchaser of health care services. **Within ''managing health care,'' behaviors were classified as those related either to the role of patient in the medical encounter or to the consumer–purchaser of health care services.	Listing the behaviors expected of all individuals raises the question of who is vulnerable and is particularly at risk of preventable illness and suffering as a result of their own inaction or from penalties imposed by how health plans are structured	** Listing the behaviors expected of all individuals raises the question of who is vulnerable and is particularly at risk of preventable illness and suffering as a result of their own inaction or from penalties imposed by how health plans are structured **As patient and consumer responsibilities grow, so does the need for basic, applied, intervention and evaluation research and its application to ensure effective support for individuals. **The cost of people's inaction is born most heavily by individuals and families in the form of preventable suffering. But the cost to society of ignoring the challenge to individuals posed by health care whose success increasingly depends on their effective participation is also high: wasted resources, suboptimal outcomes, and increases in health disparities. **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

IV: Independent Variable; DV: Dependent Variable

Table: Melynk, B.N., & Fineout-Overholt, E. (2015). Evidence-based practice in nursing & healthcare: a guide to best practice (3rd ed). Philadelphia: Wolters Kluwer

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Keulers, B. J., Welters, C. F., Spauwen, P. H., & Houpt, P. (2007). Can face-to-face patient education be replaced by computer-based patient education? A randomised trial. *Patient Educ Couns, 67*(1-2), 176-182. doi:10.1016/j.pec.2007.03.012	None	prospective randomised and stratified controlled trial	One hundred thirteen patients were randomised (group A 59 (doctor education), and group B 54 (computer education)) in a large training hospital in the middle of the Netherlands, in a plastic surgery office with five plastic surgeons and three residents	IV: Patient education (interactive computer vs f2f doctor) DV1: level of knowledge DV2: satisfaction of education	A database was created in SPSS and a t-test for two in dependable groups was used. * For the asymmetric distribution in the satisfaction scores, a Mann–Whitney U-test was used	After correction for age, gender, frequency of computer use, by means of linear regression techniques, the difference was 2.8 points (95% confidence interval 1.1 $ 4.4, p = 0.001) ***in total satisfaction score,** because of an unequal distribution of variables a non-parametric analysis (Mann–Whitney U-test) was used, resulting in a non-significant difference in satisfaction between both groups (p = 0.585)	Knowledge scores after computer-based patient education were significantly higher in this study, also after correction for age, gender, frequency of computer use, previous CTS operation, previous CTS education, and education level	**Strengths:** A difference in score of 2.8 on a scale of 40 points is not a large difference, but it stresses that a computer can at least educate as well as a doctor can. **Limitations:** Using a non-validated method for measuring satisfaction is a weakness. **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

IV: Independent Variable; DV: Dependent Variable

Table: Melynk, B.N., & Fineout-Overholt, E. (2015). Evidence-based practice in nursing & healthcare: a guide to best practice (3rd ed). Philadelphia: Wolters Kluwer

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Kim, J. J., Mohammad, R. A., Coley, K. C., & Donihi, A. C. (2015). Use of an iPad to Provide Warfarin Video Education to Hospitalized Patients. *J Patient Saf. 11*(3), 160-165. doi:10.1097/PTS.0000000000000062	None	Prospective quality improvement project	Forty hospitalized patients in large academic medical center from November 1, 2010, to May 31, 2011	IV: Warfarin Video Education DV1: Knowledge test DV2: Patient satisfaction	The McNemar's test was used to compare proportions of related samples such as the pre-video knowledge test score compared with the post-video knowledge test score for the same patient; W^2 tests were used to compare secondary categorical data. A P value of 0.05 or less indicated a statistically significant difference. * All analyses were conducted using SPSS v. 18.	There was a significantly higher passing rate for the post- video knowledge test (90%) compared with the pre-video knowledge test (42.5%, P G 0.001). After viewing the video, 72.5% of patients missed question 6 on the post-test; however, only 20% of patients missed question 7.	Patients had a significantly higher passing rate on the post-video knowledge test (90%) compared with their pre- video knowledge passing rate (42.5%, P G 0.001). Also, majority of patients reported the video had good quality and was easy to understand (85% and 92.5%, respectively)	**Strengths:** the first evaluation of delivering warfarin education with advanced technology in the hospital setting. **Limitations:** Because of the lack of a comparative group (i.e., traditional vs. conventional education), we are unable to determine if video education is better or worse than traditional education in the hospital setting **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

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Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Lopez-Olivo, M. A., Ingleshwar, A., Volk, R. J., Jibaja-Weiss, M., Barbo, A., Saag, K., . . . Suarez-Almazor, M. E. (2018). Development and pilot testing of multimedia patient education tools for patients with knee osteoarthritis, osteoporosis, and rheumatoid arthritis. *Arthritis Care Res* (Hoboken), 70(2), 213-220. doi:10.1002/acr.23271	"edutainment" model, incorporating educational patient story lines	Randomized control trial	20 participants per disease (i.e., knee OA, RA, and OP) with at least 5 Spanish-speaking participants per disease group recruited from community clinics in the county's health system and The University of Texas, MD Anderson Cancer Center, in Houston, Texas	IV: Multimedia Patient Education Tools DV1: Disease knowledge and therapeutic option DV2: Decisional Conflict Scale (DCS)	SDs were used to summarize continuous information. Demographics and baseline characteristics were compared among disease groups using chi-square test or Fisher's exact test of association, as well as analysis of variance (ANOVA) or Kruskal-Wallis test, where appropriate. * Paired t-test was used to compare the mean knowledge scores pre- and postintervention	Patients with inadequate health literacy showed improvement in knowledge across the 3 diseases, with borderline significance for the OP group. * For patients with adequate literacy, significant improvements were observed for RA and OP, and no increase was observed for OA. Clinically important improvement in knowledge was seen in both health-literacy groups among RA patients	Postintervention, all disease groups showed statistically significant improvements in knowledge scores High mean SD scores indicating better disease management were observed in the OA, OP, and RA groups after watching the video tool	**Strengths:** no other studies have developed and tested low health-literacy educational multimedia tools specifically for OA, OP, and RA patients. **Limitations:** Our educational tool by definition is not a decision aid according to the certification criteria for decision aids, according to the International Patient Decision Aids Standards (IPDAS) Collaboration **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

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Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Miller, T. A. (2016). Health literacy and adherence to medical treatment in chronic and acute illness: a meta-analysis. *Patient Educ Couns,* 99(7), 1079-1086. doi:10.1016/j.pec.2016.01.020	None	systematic with meta-analysis review	220 articles between 1948 and 2012	IV: patient health literacy DV1: treatment adherence DV2: health literacy interventions	The effect size "r" was the statistical basis for this meta-analysis because "r" illustrates both the strength and direction of the relationship between variables. For the correlational studies, a positive r indicates that patients with higher health literacy are more adherent; a negative r indicates that those with higher health literacy are less adherent. For the intervention studies, a positive r indicates that an intervention aimed at improving patient health literacy is effective, and/or improves the adherence of patients who received the health literacy intervention. A negative r indicates that the intervention reduced patient's level of health literacy and/or adherence to treatment.	Preliminary statistical analyses (i.e., calculation of means, medians, standard deviations, correlations and t-tests) were conducted using SPSS 12.0; a TI-84 Plus graphing calculator and Excel 2008 v.12.2.3 were used for essential calculation verification. Moderator analyses were conducted using the random effects model t-tests to explore variability in effect sizes as a function of substantive and methodological differences between studies.	that patients with high health literacy increased the adherence to treatment plans by 1.76 or nearly twice better than the patients with low health literacy. Additionally, the patients who received no intervention is associated with low health literacy were 1.56 or twice the risk of developing low health literacy; whereas, patients who received interventions were 2.45 or nearly three times to have high health literacy. This study also showed that the risk of non-adherence is associated with 1.38 times or nearly twice in participants with no intervention; whereas, the group who participated in intervention has 1.91 or twice the likelihood to adhere to the treatment plan. The study established that patients who received interventions were able to expand their health literacy and had a 16% higher rate of treatment plan adherence.	**Strengths:** Health literacy interventions aimed at improving a patient's level of health literacy were more effective if health literacy was assessed using subjective measurements, and if patients rated their own level of health literacy as opposed to having another rate it (e.g., spouse or health care provider). Health literacy interventions were more effective in studies with low-income patients **Limitations:** several literature search strategies (downward and upward) were utilized here, it is possible that some studies were missed unintentionally. **Critical Appraisal Tool & Rating:** The Johns Hopkins Research Evidence Appraisal Tool Level of evidence: 1 Quality of rating based on quality appraisal: High

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Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Mulhall, A. M., Zafar, M. A., Record, S., Channell, H., & Panos, R. J. (2017). A tablet-based multimedia education tool improves provider and subject knowledge of inhaler use techniques. *Respiratory Care,* 62(2), 163-171. doi:10.4187/respcare.05008	None	RCT - single-center, prospective, observational, pre- and post-interventional evaluation	58 healthcare providers (pulmonary medicine providers {fellows & attendings}, general internal medicine providers {nurses, Nos, Mas, Attending}) and out-patient 50 veterans with COPD at the Cincinnati Veterans Affairs Medical Center (VAMC)	IV: Tablet-based inhaler educational tool DV1: Inhaler technique DV2: patient's respiratory symptoms	Mean and SD were calculated for numerical variables. All statistical comparisons were performed using Student's paired *t* test (SAS 9.2, SAS Institute, Cary, North Carolina). All data were entered into an Excel (Microsoft, Redmond, Washington) database and verified each record in an independent review of data entry.	Significant differences were defined as *P* .05, and the COPD Assessment Test minimal clinically important difference was 2 points.	Inhaler technique scores improved by 44% in the multimedia group compared with only 19% in the print-based group.	**Strengths:** This study shows that tablet-based inhaler education improves correct inhaler use technique by providers in the short term regardless of specialty or previous personal or family member inhaler use. **Limitations:** Although predefined inhaler technique checklists were used, evaluating some steps of inhaler device use can be subjective. **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

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Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Panagioti, M., Skevington, S. M., Hann, M., Howells, K., Blakemore, A., Reeves, D., & Bower, P. (2018). Effect of health literacy on the quality of life of older patients with long-term conditions: a large cohort study in UK general practice. *Quality of Life Research*, 27(5), 1257-1268. doi:10.1007/s11136-017-1775-2	None	**Survey.** The first questionnaire was posted to all participants between November 2014 and February 2015. Follow-up questionnaires were sent 6 and 12 months	large longitudinal cohort study; the Comprehensive Longitudinal Assessment of Salford Integrated Care (CLASSIC) in Salford, North West England.	IV: Health literacy DV: Quality of life	Two multivariate multiple regression analyses * Analyses were undertaken using Stata (version 14).	Across the domains, these were 60.0 (SD = 22.3) for physical QoL, 69.6 (SD = 17.7) for psychological, 72.5 (SD = 16.4) for social relationships and 68.4 (SD = 20.2) for environmental QoL. The overall correlation between baseline and follow-up domains scores ranged from 0.71 to 0.82 ($p < 0.001$).	Approximately 1 in 5 patients reported health literacy problems at least occasion- ally (i.e. sometimes to always). Multi-morbidity was common in the sample; about 60% reported having 2 or more LTCs. ** poor health literacy was associated with lower QoL, across all four domains (physical, psychological, social relationships and environment), after adjusting for the effects of multi-morbidity, depressive symptoms, social support and socio-demographic factors.	**Strengths:** large sample of older adults who have poorer health literacy compared to other age groups **Limitations:** Tool used Single Item Literacy Screener (SILS) can best be used as 'screening' instrument for low health literacy rather than a full diagnostic instrument for low health literacy. **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

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Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Prey, J. E., Woollen, J., Wilcox, L., Sackeim, A. D., Hripcsak, G., Bakken, S., . . . Vawdrey, D. K. (2014). Patient engagement in the inpatient setting: a systematic review. *J Am Med Inform Assoc*, 21(4), 742-750. doi:10.1136/amiajnl-2013-002141	**None**	systematic review	17 articles from four electronic databases: PubMed, Association for Computing Machinery (ACM) Digital Library, Institute of Electrical and Electronics Engineers (IEEE) Xplore, and the Cochrane database in February 2013.	IV: inpatient engagement technologies DV: patient engagement	None	None	The study showed 3 articles identified design requirements for inpatient engagement technology. The remaining 14 articles described interventions, which we placed into five categories: entertainment, generic health information delivery, patient-specific information delivery, advanced communication tools, and personalized decision support.	**Strengths:** From the studies found, we have developed a preliminary model to describe potential types of engagement methods. **Limitations:** lack of standard terminology surrounding the subject of patient engagement and no consistently utilized MeSH terms. **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

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Table: Melynk, B.N., & Fineout-Overholt, E. (2015). Evidence-based practice in nursing & healthcare: a guide to best practice (3rd ed). Philadelphia: Wolters Kluwer

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Rathert, C., Mittler, J. N., Banerjee, S., & McDaniel, J. (2017).	None	systematic revie	11 publications from the 1,984 results from PsychInfo, Scopus, Web of Knowledge, and Pubmed	IV: Electronic health records (EHRs) DV1:communication DV2: patient empowerment DV3: patient Engagement DV4: self-management	None	None	all of the reviewed studies had results with implications for one or more of the communication functions 31 were germane to fostering relationships; 29 information exchange; 4 responding to emotions; 5 managing uncertainty; 9 decision making, and 6 enabling self-management. Use of patient portals and secure messaging may help patients keep track of their histories, recall what was discussed, and prepare for clinical encounters.	Strengths: patient portals and secure messaging may help improve relationships by building trust and engaging patients in their care. Limitations: This systematic review was dependent on the studies retrieved and the accuracy of information reported. Second, many of the studies had very small sample sizes which may limit their power. Third, many interventions and communication measures were poorly described, which makes it difficult to compare findings. **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

IV: Independent Variable; DV: Dependent Variable
Table: Melynk, B.N., & Fineout-Overholt, E. (2015). Evidence-based practice in nursing & healthcare: a guide to best practice (3rd ed). Philadelphia: Wolters Kluwer

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Visscher, B. B., Steunenberg, B., Heijmans, M., Hofstede, J. M., Deville, W., van der Heide, I., & Rademakers, J. (2018). Evidence on the effectiveness of health literacy interventions in the EU: a systematic review. *BMC Public Health, 18*(1), 1414. doi:10.1186/s12889-018-6331-7	None	Systematic Review	23 Articles written between 1995 and mid-2018	IV: health literacy DV: Types of intervention i.e. According to our knowledge, no research on health literacy has been done before 1995, therefore studies from January 1995 to Augusts 2018 were included	*Analyses were conducted using PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses)	There were not a sufficient number of studies with similar outcome measures or similar interventions to consider quantitative analysis (meta-analysis or statistical pooling) of data; therefore a qualitative analysis was performed.	it is not possible to measure the impact of interventions on people with varying levels of health literacy. The quality of most studies was weak (15) or moderate (7).	**Strengths:** According to our knowledge, no research on health literacy has been done before 1995, therefore studies from January 1995 to Augusts 2018 were included. The first systematic review on health literacy interventions in the EU context **Limitations:** only 23 studies **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

IV: Independent Variable; DV: Dependent Variable
Table: Melynk, B.N., & Fineout-Overholt, E. (2015). Evidence-based practice in nursing & healthcare: a guide to best practice (3rd ed). Philadelphia: Wolters Kluwer

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Wali, H., Hudani, Z., Wali, S., Mercer, K., & Grindrod, K. (2016). A systematic review of interventions to improve medication information for low health literate populations. *Res Social Adm Pharm,* 12(6), 830-864. doi:10.1016/j.sapharm.2015.12.001	None	Systematic review	47 studies	IV: Patient education on medication information intervention DV1: Medication knowledge DV2: Medication adherence	Using thematic analysis, all study interventions were coded with NVivo 10 (QSR International Pty Ltd) by first identifying the intervention, comparing the types of intervention and categorizing interventions into themes. *Analyses were conducted via RefWorks 2.0 Mendeley	Overall, of the 47 studies included in the review, 37 interventions provided information on knowledge and 26 interventions provided information on adherence, significant improvement in knowledge in 27 studies and significant improvement in adherence in 19 studies	Interventions designed to support low health literate populations can improve patients' medication knowledge and adherence. The most common interventions are written interventions, but other effective strategies include visual information, verbal information, specialized labels, reminder systems and education programs.	**Strengths:** This review demonstrates that interventions targeting low health literate population improve medication knowledge and adherence. **Limitations:** interventions are heterogeneous. Variety of different methods used to determine knowledge and adherence. **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

IV: Independent Variable; DV: Dependent Variable
Table: Melynk, B.N., & Fineout-Overholt, E. (2015). Evidence-based practice in nursing & healthcare: a guide to best practice (3rd ed). Philadelphia: Wolters Kluwer

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Wigfall, L. T., & Tanner, A. H. (2018). Health Literacy and Health-Care Engagement as Predictors of Shared Decision-Making Among Adult Information Seekers in the USA: a Secondary Data Analysis of the Health Information National Trends Survey. *J Cancer Educ, 33*(1), 67-73. doi:10.1007/s13187-016-1052-z	None	cross-sectional study of the data from the third cycle of the 4th iteration of the Health Information National Trends Survey (HINTS 4, Cycle 3	1,604 information seekers	IV: health literacy DV: shared decision-making	*Analyses were conducted using Stata/IC 13.1 statistical software package Spearman's correlation analyses were performed to assess multicollinearity between the key measures (i.e., SDM, healthcare engagement, health literacy).	There was a twofold increase in SDM among adults who were "completely/very confident" versus "somewhat/a little/not confident" about finding health information (OR=2.03; 95% CI: 1.37–3.02).	Adults information seekers who are more confident about their ability to find health information may also be more likely to be highly involved in SDM. Healthcare engagement mediated the relationship between health information seeking self-efficacy and SDM	**Limitations:** pt's perceptions of SDM, and not actual provider behaviors **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

IV: Independent Variable; DV: Dependent Variable
Table: Melynk, B.N., & Fineout-Overholt, E. (2015). Evidence-based practice in nursing & healthcare: a guide to best practice (3rd ed). Philadelphia: Wolters Kluwer

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Winstanley, E., Zhang, Y., Burtchin, M., Campbell, P., Beck, S., Bohenek, W., & Pahl, J. (2017). Inpatient experiences with MyChart bedside. *Telemedicine And E-Health*, 23(8), 691-693. doi:10.1089/tmj.2016.0132	None	Web-based self-reported survey that was embedded within the **MyChart Bedside** application.	88 inpatients at St. Rita's Medical Center	IV: MyChart Bedside DV1: communication with care team	Descriptive statistics were used to summarize the survey responses. * Stata SE 13.1 was used to conduct the statistical analysis.	The respondents agreed that **MyChart Bedside** improved communication with their nurses (74%) and with their physicians (53%), as well as helped them understand their medications (90%) during their **inpatient** hospitalization.	The study found that the majority of patients were satisfied with **MyChartBedside**, and they reported that it helped them learn more about their medications, as well as communicate with their care team.	**Strengths:** **Limitations:** No patient identifiable information was collected, so the extent to which this sample represents the population of MyChart Bedside users is unknown. Researchers do not know the sociodemographic or clinical characteristics of the respondents nor whether use impacted overall hospital satisfaction ratings. **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

IV: Independent Variable; DV: Dependent Variable
Table: Melynk, B.N., & Fineout-Overholt, E. (2015). Evidence-based practice in nursing & healthcare: a guide to best practice (3rd ed). Philadelphia: Wolters Kluwer

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Yuen, E. Y. N., Knight, T., Ricciardelli, L. A., & Burney, S. (2018). Health literacy of caregivers of adult care recipients: A systematic scoping review. *Health Soc Care Community*, *26*(2), e191-e206. doi:10.1111/hsc.12368	None	A systematic scoping review	Twelve studies from 2003 to 2015	IV: health literacy of caregivers of adult care recipients DV: caregiver and care recipient health outcomes	Included studies were abstracted into evidence tables and assessed using an eight-item quality scale adapted from West et al. (2002): (i) adequacy of study question; (ii) adequacy of study population; (iii) comparability of participants; (iv) validity and reliability of outcome measurement; (v) exposure variable/intervention clearly defined; (vi) use of appropriate statistical analyses; (vii) clarity of results; and (viii) presentation of discussion (e.g. non-biased, limitations addressed). Each study was rated on a 4-point scale (0 = poor, 1 = fair, 2 = good, 3 = excellent) for each of the qual- ity assessment items. A composite score was used to determine its quality using the following grading system: Excellent (a score of 13–16); Good (9–12); fair (5–8); poor (0–4). * The review was conducted in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines	Cohen's (1968) kappa was used to assess inter-rater reliability. Kappa for inclusion of publications in the review was 1.0.	Associations were found between low caregiver health literacy and (i) poorer care recipient self-management behaviours; (ii) increased care recipient use of health services; and (iii) increased caregiver burden.	**Limitations:** Low health literacy in caregivers differed depending on the measures and scoring criteria used. **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

IV: Independent Variable; DV: Dependent Variable
Table: Melynk, B.N., & Fineout-Overholt, E. (2015). Evidence-based practice in nursing & healthcare: a guide to best practice (3rd ed). Philadelphia: Wolters Kluwer

Citation	Conceptual Framework	Design/ Method	Sample/ Setting	Variables Studied and Their Definitions	Measurement	Data Analysis	Findings	Appraisal: Worth to Practice
Zheng, M., Jin, H., Shi, N., Duan, C., Wang, D., Yu, X., & Li, X. (2018). The relationship between health literacy and quality of life: a systematic review and meta-analysis. Health Qual Life Outcomes, 16(1), 201. doi:10.1186/s12955-018-1031-7	None	Systematic Review and meta-analysis.	Twenty-three studies, with a total of 12,303 subjects, were included. A total of 19 studies were included in the analysis of the correlation between HL and QOL, and the total sample size was 12,303.	IV: Health literacy DV: Quality of life	The pooled correlation coefficient (PCOR) and its 95% confidence interval (CI) between HL and QOL were estimated using R software. Potential sources of heterogeneity were explored using subgroup analysis, sensitivity analysis, and meta-regression. *Analyses were conducted using SAS version 9.2 (Cary, NC).	The PCOR between HL and the two dimensions of QOL was lower than the total PCOR between HL and QOL. In subgroup analysis, the PCOR between HL and QOL was 0.46 (95%CI: 0.13, 0.69) among community residents, 0.45 (95%CI: 0.27, 0.61) in China, and 0.45 (95%CI: 0.24, 0.62) based on cohort studies.	This study showed the HL had a moderate positive correlation with QOL ($r = 0.35$, $p < 0.05$) through meta-analysis. It suggested that people with low HL may pay low attention to their health status and therefore they had unhealthy behavior habits that caused a decline of QOL.	**Strengths:** This study also analyzes the interaction relations between dimensions of HL and dimensions of QOL. **Limitations:** The study design used is mainly cross-sectional studies. It never reflected on the long-term impact of lower HL on QOL. * The questionnaires for HL and QOL were not unified. **Critical Appraisal Tool & Rating: The Johns Hopkins Research Evidence Appraisal Tool** **Level of evidence: 1** **Quality of rating based on quality appraisal: High**

IV: Independent Variable; DV: Dependent Variable
Table: Melynk, B.N., & Fineout-Overholt, E. (2015). Evidence-based practice in nursing & healthcare: a guide to best practice (3rd ed). Philadelphia: Wolters Kluwer

Appendix D: Work Breakdown Structure, Gantt,

Communication Matrix, and Budget Table

Work Breakdown Structure					Gantt and Communication Matrix									Items	Budget
					Week										
Level 1 Milestone	Level 2 Task	Level 3 Subtasks	Point of Contact	End Date	1	2	3	4	5	6	7	8	9		
Analyze	Collaborate with Evidence-Based Practice (EBP) Director		EBP Director		5, O/M										
		○ Complete the Capstone Proposal Form													
		○ Meet with EBP Director for approval												Meeting	$1,000
	Collaborate with the Office of the VA Health Education and Information		Health Education Coordinator (VHEC)		5, O/M										
		○ Present and discuss the project												Meeting	$1,000
	Present to Leadership			10/23/20											
		○ Present the project individually via online and/or face-to-face to the stakeholders	Associate Chief of the Office of Research and Development			2, O									
			VA Health Education Coordinator			2, O									
			Director of Education and Operations, Simulation			1, O									
			Chief of Specialty and Hospital-Based Services			1, O									
			Associate Chiefs of Specialty and Hospital-Based Services			2, OF									
			President of American Federation of Government Employedd (AFGE) Union			2, OF									
			Local unit-based experts			1, F								Meeting	$1,200
		○ Notify Service Line Chief for Pilot Unit	Chief of Specialty and Hospital-Based Services	10/26/20		1, O									
		• Identify Pilot Unit: IICU or 3F												Meeting	$100
	Evaluate the Need-Assessment of the pilot unit														
		○ Present the project to the pilot unit's Nurse Manager and Assistant Nurse Managers	Nurse Manager and Assistant Nurse Managers	10/26/20		2, F								Meeting	$200
		○ Deploy Pre-Implementation Survey	IICU Charge Nurse and Staff	11/1/20			6, F								
		• Online													
		• Hardcopy													
		○ Attended Unit Shift-Change Huddle													
		• Discussion: Reviews, Evaluation and Recommendation													
		• Reviewed current workflow of patient education encounters													
		• Reviewed current use of online patient education and information materials													
		• Incorporated new from old process												Meeting	$1,200
	Assess technology capability: Webpage or SharePoint		Online	10/20/20		1, O								Meeting	$100

Work Breakdown Structure					Gantt and Communication Matrix									Items	Budget
					Week										
Level 1 Milestone	Level 2 Task	Level 3 Subtasks	Point of Contact	End Date	1	2	3	4	5	6	7	8	9		
Act	Apply access to Sharepoint site in VA's national Your-IT-request site		Online	11/6/20		3, O								Meeting	$300
	Gather patient education documents via online and hardcopy resource		Unit-based experts	11/14/20			6, F							Meeting	$1,200
	Collect Pre-Implementation Survey		IICU Charge Nurse and Staff	11/17/20			3,F								
		○ Reviewed frequently asked topics from the												Meeting	$600
	SharePoint Creation		Unit-based experts	11/14/20			3, O/F								
		○ Collect online patient education materials from various resources allowed by the National VA Health Education and Information													
		○ Collaborate with Subject Matter Experts (SME) of the topic resulted from the survey												Meeting	$600
	Requested local IT to remove site restriction for general viewing and printing of information materials posted		Locally-based SharePoint Site Experts	11/4/20			3, O							Meeting	$ 600.00
	Request local IT to link the site to CPRS		Locally-based SharePoint Site Experts	11/6/20			3, O							Meeting	$ 600.00
	IICU Local Kick-Off via group email		IICU Charge Nurse and Staff	11/13/20			3, O								
		○ As alternative plan: Email each Unit Champion the How-To -Find SharePoint												Meeting	$ 600.00

Work Breakdown Structure					Gantt and Communication Matrix									Items	Budget
					Week										
Level 1 Milestone	Level 2 Task	Level 3 Subtasks	Point of Contact	End Date	1	2	3	4	5	6	7	8	9		
Anchor	Post-Implementation Survey		IICU Charge Nurse and Staff	11/27/20				6, F							
		○ Deploy Post-Implementation Survey													
			• Online												
			• Hardcopy												
		○ Attend Unit Shift-Change Huddle													
			• Discussion: Reviews, Evaluation and Recommendation												
			• Review new workflow of patient education encounters												
			• Review the new use of online patient education and information materials												
			• Incorporated new from old process											Meeting	$ 1,200.00
		○ Gather more patient education and resource information materials for the SharePoint site from various reliable sources	Local unit-based experts	11/27/20					3, O					Meeting	$ 300.00
		○ Update aggregated patient education materials as needed	Local unit-based experts	11/27/20					3, O						
			• contributors/experts from different VA units/sites for frequently asked topics											Meeting	$ 300.00
	Dessimination														
		○ Post Survey Result unit's huddle board and TV	IICU Charge Nurse and Staff	11/22/20						2, O/F				Meeting	$ 200.00
		○ Display the steps on how to locate the SharePoint site in CPRS unit's huddle board and	IICU Assigned Staff	12/21/20						2, O/F				Meeting	$ 200.00
		○ Presentation to various leadership and committee meetings													
			• Joint-meeting of Promotion and Disease Prevention/Veteran Health Education	Committee Chair	12/1/20							1, F		Meeting	$ 600.00
			• Veteran Family Council	Committee Chair	12/21/20							1, O		Meeting	$ 600.00
			• Leadership's monthly meeting	Chief of Specialty and Hospital-Based Ser	12/29/20								1, F	Meeting	$ 600.00
			• Shared- Governance Committee	Committee Chair	12/16/20								1, O	Meeting	$ 600.00
														Total	$13,900

Legend: M= Face to face meeting. O=online meeting. O/M= face or online meeting, Numbers after M, O or O/M denotes frequency of meetings

Appendix E: SWOT Analysis

Appendix F: Cost Avoidance Analysis for Length of Stay

Length of Stay

Inpatient Daily Cost ($3,873)	Week	Month	Year	3-Year
3 Inpatient Days	$ 11,619	$ 46,476	$ 604,188	$ 1,812,564
5 Inpatient Days	$ 19,365	$ 77,460	$ 1,006,980	$ 3,020,940
7 Inpatient Days	$ 27, 111	$ 108, 444	$ 1,409,772	$ 4,229,316

Appendix G: Cost Avoidance Analysis- Readmission

Readmission

Inpatient Daily Cost (2,140)	Week	Month	Year	3-Year
3 Inpatient Days	$ 6,420	$ 25,680	$ 333,840	$ 1,001520
5 Inpatient Days	$ 10,7000	$ 42,800	$ 556,400	$ 1,669,200
7 Inpatient Days	$ 14,980	$ 59,920	$ 778,960	$ 2,336,880

H.1 Data Collection: Clinicians' Encounter

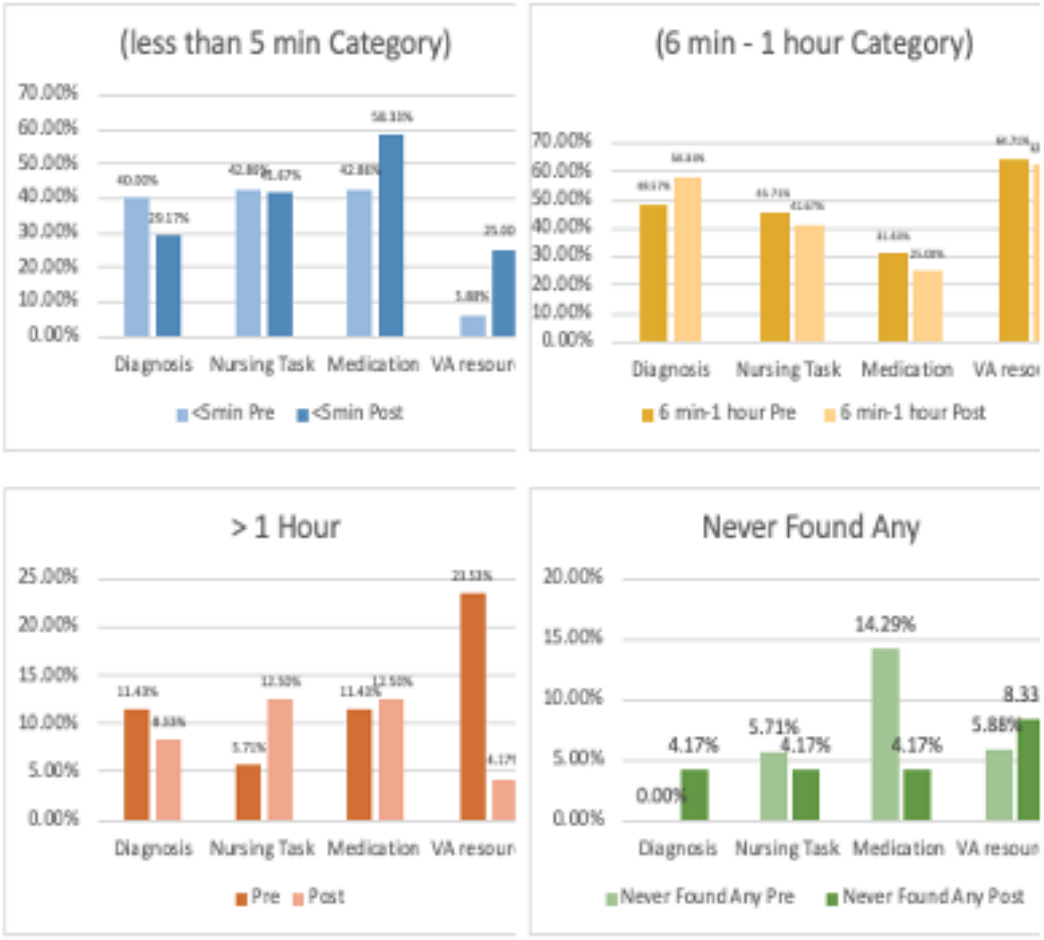
Education Theme	Pre-Implementation				Post-Implementation			
	Never (0)	Seldom (1-2x a week)	Often (3-4x a week)	Always (>5x a week)	Never (0)	Seldom (1-2x a week)	Often (3-4x a week)	Always (>5x a week)
	R(N)	R(N)	R(N)	R(N)	R(N)	R(N)	R(N)	R(N)
Diagnosis	0% (0)	22.22% (8)	47.22% (17)	30.56% (11)	3.85% (1)	34.62% (9)	57.69% (15)	3.85% (1)
Nursing Task	0% (0)	47.22% (17)	33.33% (12)	19.44% (7)	7.69% (2)	50% (13)	38.46% (10)	3.85% (1)
Medication	8.33% (3)	36.11% (13)	38.89% (14)	16.67% (13)	15.38% (4)	34.62% (9)	46.15% (12)	3.85% (1))
VA Resources	11.11% (4)	36.11% (13)	36.11% (13)	16.67% (6)	11.54% (3))	57.69% (12)	26.92% (7))	3.85% (1))
Others	0% (0)	0% (0)	100% (1)	0% (0)	60% (3)	40% (2)	0% (0)	3.85% (1)

Education Theme	Frequency			
	<2 x a week		>3x a week	
	Pre	Post	Pre	Post
Diagnosis	22% (8)	38% (10)	78% (28)	62% (16)
Nursing Task	47% (17)	58% (15)	53% (19)	42% (11)
Medication	44% (16)	50% (13)	56% (20)	50% (13)
VA resources	47% (17)	69% (18)	53% (19)	31% (8)

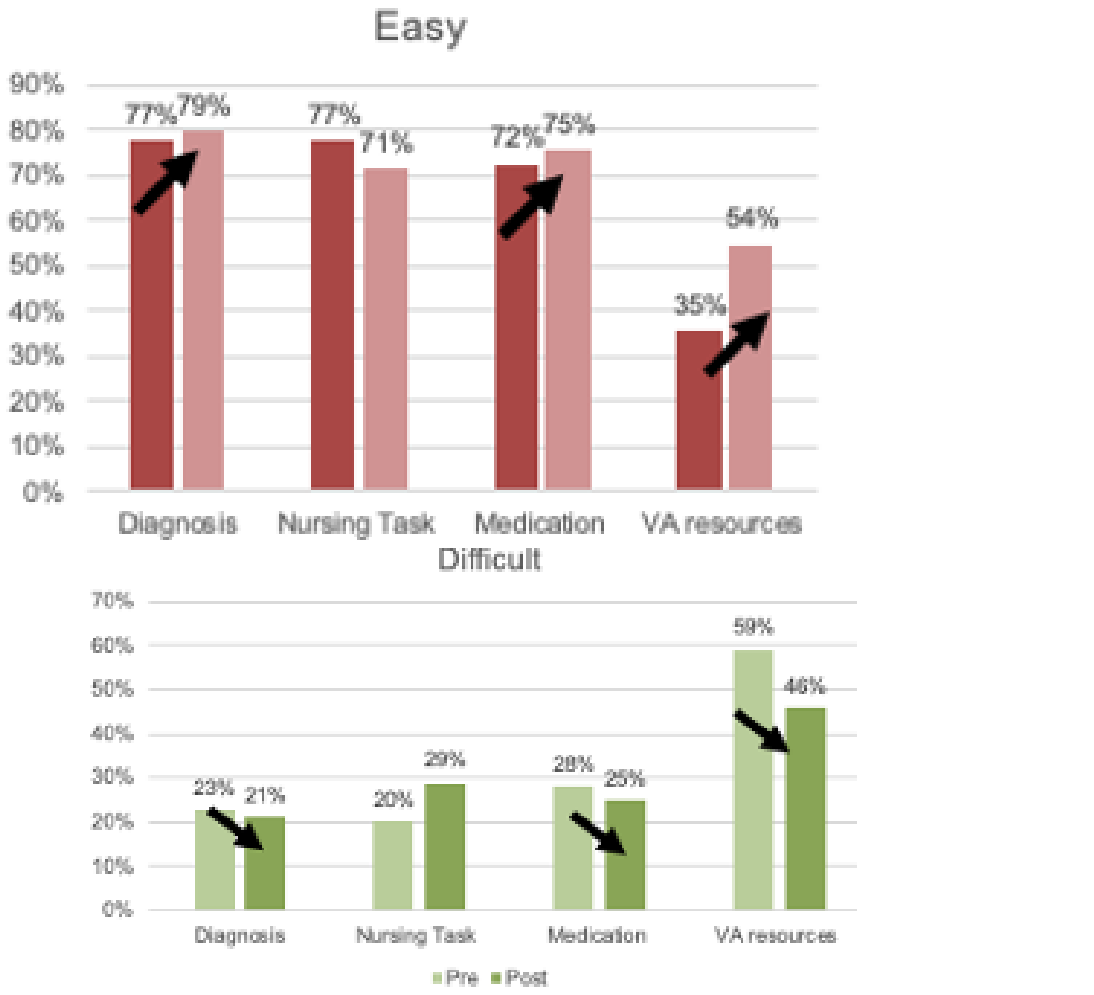
H.2 Data Collection: Clinicians' Sources

Source of Information	Never (0)		Seldom (1-2x a week)		Often (3-4x a week)		Always (>5x a week)	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
Books (online library)	36.11% (13)	61.54% (16)	50% (18)	38.46% (10)	11.11% (4)	0.00% (0)	2.78% (1)	0.00% (0)
Books (hardcopy)	44.44% (16)	50.00% (12)	36.11% (13)	41.67% (10)	19.44% (7)	4.17% (1)	0% (0)	4.17% (1)
Co-workers	11.43% (4)	4.00% (1)	20% (7)	32.00% (8)	42.86 (15)	40.00% (10)	25.71% (9)	40.00% (10)
Family & Friends	55.88% (19)	68.00% (17)	29.41% (10)	28.00% (7)	14.71% (5)	4.00% (1)	0% (0)	4.00% (1)
Own Healthcare Provider	16.67% (6)	44.00% (11)	25% (9)	32.00% (8)	38.89% (14)	16.00% (4)	19.44% (7)	16.00% (4)
Internet	20% (7)	12.00% (3)	37.14% (13)	36.00% (9)	14.29% (5)	36.00% (9)	28.57% (10)	36.00% (9)
Non-VA Academic Journals	17.14% (6)	48.00% (12)	57.14 (20)	40.00% (10)	11.43% (4)	4.00% (1)	14.29% (5)	4.00% (1)
VA Online Library	38.46% (10)	46.15% (12)	38.46% (10)	46.15% (12)	23.08 (6)	7.69% (2)	0% (0)	7.69% (2)
Myhealthevet	57.59% (19)	76.00% (19)	33.33% (11)	24.00% (6)	9.09% (3)	0.00% (0)	76% (19)	0.00% (0)

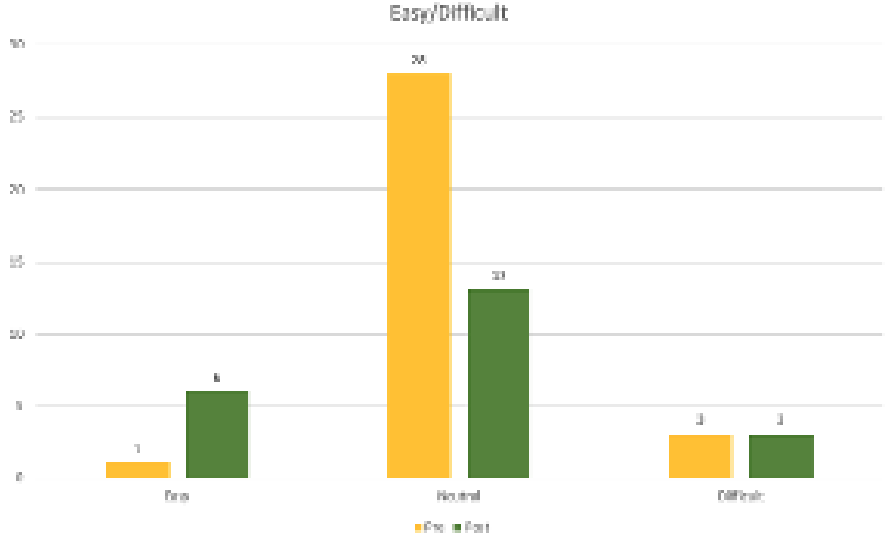
H.3 Data Collection: Timeliness of Search Process



H.4 Data Collection: Ease and Difficulty of Search Process



H.5 Data Collection: Overall Ease and Difficulty of Search Process

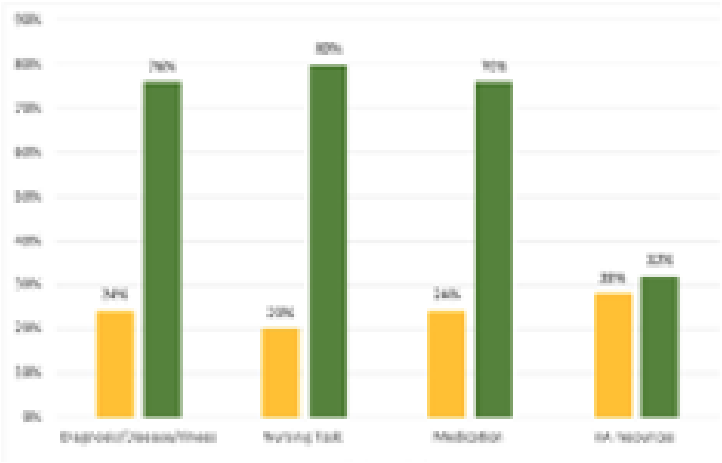


H.6 Data Collection: Clinicians' Priority

Education Theme	Rank # 1	Rank # 2	Rank # 3	Rank # 4	Total
Diagnosis	47.83% (11)	39.13% (9)	8.70% (2)	4.35% (1)	23
Nursing Task	26.09% (8)	30.43% (7)	39.13% (9)	4.35% (1)	23
Medication	17.39% (4)	17.39% (4)	43.48% (10)	21.74% (10)	23
VA Resources	8.70% (2)	13.04% (3)	8.70% (2)	69.57% (18)	23

H.7 Clinicians' Information Sharing Behavior

Education Theme	Unlikely	Likely
Diagnosis	24% (6)	76% (19)
Nursing Task	20% (5)	80% (20)
Medication	24% (6)	76% (19)
VA Resources	28% (7)	32% (8)



Appendix I: Interpretative Analysis Tables

Table 1

Mann-Whitney Tests Comparisons for Times per Week That Patients and Caregivers Needed Information on Selected Topics Based on Time Period

Variable	Time	*n*	*M*	*SD*	r_s	*z*	*p*
1a. Diagnosis					.31	2.31	.02
	Pretest	33	3.09	0.72			
	Posttest	24	2.63	0.65			
1b. Nursing Task					.19	1.53	.13
	Pretest	33	2.73	0.76			
	Posttest	24	2.38	0.71			
1c. Medication					.13	1.63	.10
	Pretest	33	2.73	0.84			
	Posttest	24	2.33	0.82			
1d. VA Resources					.21	1.78	.08
	Pretest	33	2.64	0.90			
	Posttest	24	2.25	0.68			

Note. $N = 57$.

Note. Ratings based on a four-point metric: 1 = *Never* to 4 = *Always*.

Table 2

Mann-Whitney Tests Comparisons for Usage of Patient Education and Resource Information by Time Period

Variable	Time	*n*	*M*	*SD*	r_s	*z*	*p*
2a. Books (online library) i.e., NHL, UpToDate					.29	2.15	.03
	Pretest	33	1.82	0.73			
	Posttest	24	1.42	0.50			
2b. Books (Hardcopy) Medical/Nursing Textbooks					.08	0.54	.59
	Pretest	33	1.76	0.75			
	Posttest	24	1.67	0.76			
2c. Co-workers (Physicians, NPs, PA, Nurses)					.02	0.07	.95
	Pretest	33	2.85	0.97			
	Posttest	24	2.88	0.85			
2d. Family and friends					.14	0.92	.36
	Pretest	33	1.58	0.75			
	Posttest	24	1.38	0.58			
2e. Own Healthcare Providers (Physicians, NPs, PAs, Nurses)					.35	2.73	.006
	Pretest	33	2.64	0.99			
	Posttest	24	1.88	0.99			
2f. Internet (Google, Bing, YouTube, FB, IG)					.04	0.24	.81
	Pretest	33	2.55	1.12			
	Posttest	24	2.58	0.93			
2g. Non-VA Academic Journals, Brochures					.32	2.60	.009
	Pretest	33	2.27	0.91			
	Posttest	24	1.71	0.91			
2h. VA Online Library					.01	0.15	.88
	Pretest	33	1.67	0.78			
	Posttest	24	1.58	0.58			
2i. MyHealtheVet					.20	1.82	.07
	Pretest	33	1.52	0.67			
	Posttest	24	1.21	0.41			

Note. $N = 57$.

Note. Ratings based on a four-point metric: 1 = *Never* to 4 = *Always*.

Table 3

Mann-Whitney Tests Comparisons for Length of Time to Find Appropriate Patient Education Reliable Resource Information Based on Time Period

Variable	Time	*n*	*M*	*SD*	r_s	*z*	*p*
3a. Diagnosis/Disease/Illness					.10	0.69	.49
	Pretest	33	1.73	0.67			
	Posttest	24	1.88	0.74			
3b. Nursing Task					.03	0.19	.85
	Pretest	33	1.76	0.83			
	Posttest	24	1.79	0.83			
3c. Medication					.17	1.04	.30
	Pretest	33	1.91	1.04			
	Posttest	24	1.63	0.88			
3d. VA Resources					.29	2.07	.04
	Pretest	33	2.27	0.63			
	Posttest	24	1.96	0.81			

Note. $N = 57$.

Note. Ratings based on a four-point metric: 1 = *Less than five minutes* to 4 = *Never found any*.

Table 4

Mann-Whitney Tests Comparisons for Level of Difficulty to Find Appropriate Patient Education and Reliable Source Information by Time Period

Variable	Time	*n*	*M*	*SD*	r_s	*z*	*p*
4a. Diagnosis					.05	0.53	.60
	Pretest	33	2.06	0.70			
	Posttest	24	2.25	0.90			
4b. Nursing Task					.12	1.01	.32
	Pretest	33	2.06	0.79			
	Posttest	24	2.29	0.86			
4c. Medication					.06	0.34	.73
	Pretest	33	2.15	0.67			
	Posttest	24	2.13	0.85			
4d. VA Resources					.19	1.36	.17
	Pretest	33	2.70	0.68			
	Posttest	24	2.42	0.83			

Note. $N = 57$.

Note. Ratings based on a four-point metric: 1 = *Very Easy* to 4 = *Very Difficult*.

Table 5

Chi-Square Test for Difficulty Finding Systemwide Patient Education Based on Time

	Pretest		Posttest	
Rating	*n*	%	*n*	%
Easy	1	3.1	6	27.3
Neutral	28	87.5	13	59.1
Difficult	3	9.4	3	13.6

Note. $n = 54$.

Note. χ^2 (2, $n = 54$) = 7.46, $p = .02$. Cramer's $V = .37$.

Table 6

Descriptive Statistics for Importance of SharePoint Topics Sorted by Ascending Means. Post Test Date Only.

Statement	*M*	*SD*	Low	High
6a. Diagnosis	1.73	0.83	1.00	4.00
6b. Nursing Task	2.23	0.92	1.00	4.00
6c. Medication	2.68	1.04	1.00	4.00
6d. VA resources	3.36	1.05	1.00	4.00

Note. $n = 24$.

Note. Ratings based on a four-point metric: 1 = *Most Important* to 4 = *Least Important*.

Table 7

Descriptive Statistics for Likelihood of Using the SharePoint Site Sorted by Descending Means. Post Test Data Only.

Statement	*M*	*SD*	Low	High
7b. Nursing Task (FC Self-cath, wound/drain care, trach care etc)	2.83	0.96	1.00	4.00
7d. VA resources i.e. Transportation, Programs, Home health Care, Ordering medical equipment, Support Group	2.79	1.02	1.00	4.00
7a. Diagnosis/Disease/Illness	2.71	0.91	1.00	4.00
7c. Medication (includes nebulizer/inhaler use)	2.71	0.91	1.00	4.00

Note. $n = 24$.

Note. Ratings based on a four-point metric: 1 = *Very Unlikely* to 4 = *Very Likely*.

Appendix J: Gap Analysis

GAP ANALYSIS			
Problem	**Current State**	**Project Plan**	**Desired State**
When a patient/caregiver asked about a nursing task, for example, foley catheter self-insertion	Clinician seeks information from: Unit-based patient education materials Online libraries which are embedded in other intranet websites Online search engines	To create a SharePoint site to improve access to patient education and resource information.	Clinician obtains information at the SharePoint site
When a clinician asked about how to discharge a patient with tracheostomy and mechanical ventilation	Each clinician constructs their own disposition plan.		
		Actions Steps	
		Analyze Phase	
		Completed the requirements of the VAs' Capstone Project Proposal	
		Evaluated the Needs-Assessment of the Pilot Unit	
		Assessed workflow of the unit	
		Assessed project integration to the unit	
		Attended the unit's Shift-Change AM and PM Huddles	
		Distributed Pre-implementation survey online and hardcopy to IICU staff	
		Act Phase	
		Requested to have SharePoint site from IT and SharePoint site national owners' group	
		Requested IT to remove site restriction for general viewing and printing of information materials posted	
		Requested IT to link the site to CPRS	

		Gather more patient education and resource information materials for the SharePoint site from various reliable government and VA-accredited sources • For halted resources due to pandemic, collaborate with program managers • For clinicians' resources not available in health library, collaborate with expert clinicians	
		SharePoint site linkage to CPRS – Go Live Event	
		Updated IICU staff of SharePoint Site via email	
		Display the steps on how to locate the SharePoint site in CPRS unit's huddle board and TV	
		Anchor or Sustainability Phase	
		Follow-up with unit-based contributors/experts from different VA units/sites for frequently asked topics	
		Attend the unit's Shift-Change AM and PM Huddles for the post-implementation survey	
		Distribute post-implementation survey online and hardcopy to IICU staff	
		Attend the monthly Health Promotion and Disease Prevention/Veteran Health Education joint-meeting for Project presentation and sign-up more unit-based contributors/experts	