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Evidence-Based Toolkit to Evaluate Telemedicine Delivery of Palliative Care

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Evidence-Based Toolkit to Evaluate Telemedicine Delivery of Palliative Care

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Abstract

Advances in healthcare have led to many individuals with cancer to live longer, however the quality of life of these individuals has decreased. Palliative care is a medical sub-specialty that can assist to care for individuals with a life-limiting illness such as cancer. However, the access to palliative care services in rural communities is limited. According to the Institute of Medicine (IOM) report *Dying in America*, increasing access to palliative care will not only enhance the quality of life for patients with a life-limiting illness, but also contribute to a more sustainable healthcare system. The key stakeholders within a Midwest hospice and palliative care organization identified the need to expand palliative care services to a rural healthcare setting through telemedicine. However, the organization was lacking an evaluation plan for outpatient telemedicine delivery of palliative care. This quality improvement project focused on collaboration with a Midwest hospice and palliative care to develop an evidence-based toolkit to evaluate outpatient telemedicine delivery of palliative care. The Donabedian model and The Plan Do Study Act (PDSA) Cycle were used to guide toolkit development for evaluation and implementation of telemedicine delivery. The evidence-based toolkit includes telemedicine equipment and staffing needs, a formalized care flow process, referral recommendations, patient and organizational data collection, a cost-savings analysis, and a sustainability plan. To ensure standardized care is delivered, the evidence-based toolkit can be adapted to varied populations in different settings to expand palliative care services. The overall focus of the project and sustained goal was to address the quadruple aim of healthcare: to improve patient outcomes and experiences, reduce costs of care, and increase staff satisfaction (Bodenheimer & Sinsky, 2014).

Keywords: oncology, palliative care, telemedicine, evaluate

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Evidence-Based Toolkit to Evaluate Telemedicine Delivery of Palliative Care

Most individuals prefer to be at home near the end of life, however the majority are found spending their last few months of life with frequent hospitalizations and intensive care unit (ICU) admissions (Hennemann-Krause, Lopes, Araújo, Petersen, & Nunes, 2015; Institute of Medicine [IOM], 2015). Advances in healthcare have led to many individuals living longer, however the quality of life for these individuals is diminished (Matzo & Sherman, 2015). For example, when diagnosed with an advanced cancer, patients are faced with not only physical symptoms, but also psychological, spiritual, and financial concerns (Dahlin, 2015). The oncology providers appropriately focus their care on test results and treatment options (Gulcan et al., 2018). As a result, symptom management as well as coping with a new life-limiting illness is often overlooked or assigned elsewhere (Gulcan et al., 2018). Palliative care is a medical sub-specialty with a focus on care to individuals who are diagnosed with a life-limiting illness (Center to Advance Palliative Care [CAPC], n.d.; World Health Organization [WHO], 2018). The intent of palliative care is symptom management and relief of stress for both the patient and their families from diagnosis until the end of life (CAPC, n.d.; Hennemann-Krause et al., 2015). Despite its benefits, only 14% of individuals who would benefit from palliative care are currently receiving this service (WHO, 2018).

Currently, palliative care is being introduced late in the course of illness for individuals diagnosed with a life-limiting illness (Salinsm et al., 2016). However, the WHO and American Society of Clinical Oncology (ASCO) globally recommend initiating palliative care early within the outpatient setting (Gulcan et al., 2018; WHO, 2018). A barrier to early initiation of palliative care includes a lack of understanding this specialty of medicine, as well as the stigma associated with end of life (Kain & Eisenhauer, 2016; WHO, 2018). Early initiation of palliative care has

been positively associated with better quality of life, increased survival rate, and decreased healthcare costs (Blackhall et al., 2016; Dahlin, 2015; Hennemann-Krause et al., 2015).

Palliative care results in more discussions about the patient's desire for resuscitation, completion of advance directives, and greater use of hospice care (Gulcan et al., 2018).

In comparison to urban areas, the access to palliative care services in rural communities is limited (Hennemann-Krause et al., 2015). Residents living in the rural setting can experience socioeconomic challenges that impact their health including isolation, lack of reliable transportation, and unemployment (Weeks, 2018). Additionally, there are limited providers within the rural healthcare setting leading to a decrease in access to healthcare services (Weeks, 2018). To improve outpatient palliative care access for individuals diagnosed with cancer in rural settings, incorporation of telemedicine would be an option. Technology is transforming the way individuals communicate and exchange information within healthcare (Hennemann-Krause et al., 2015). Secure video visits can assist to facilitate care for those individuals who live in rural areas or are unable to drive to healthcare provider appointments (Hennemann-Krause et al., 2015). Telemedicine is beneficial as it is an alternative, innovative means of healthcare delivery that increases an individual's quality of life, assists with patient problem solving, and is a cost-effective service (Hennemann-Krause et al., 2015). Furthermore, palliative care telemedicine is associated with greater access to healthcare, reduced emergency department visits, improved management of symptoms, and increased confidence regarding the care given by family members (Hennemann-Krause et al., 2015). By incorporating telemedicine palliative care into the rural healthcare setting, the unique needs of a rural community can be addressed.

Moreover, Centers for Medicare & Medicaid Services (CMS) reimbursement measures are being introduced for oncology providers through the Medicare Access and Children's Health

Insurance Program (CHIP) Reauthorization Act of 2015 (CMS, 2017a). As medicine is moving towards value-based reimbursement, CMS recognized the need to identify both accurate and valuable information to create core measures that will impact healthcare quality (CMS, 2017b). Traditionally, unlike other life-limiting illnesses such as heart failure, oncology providers were exempt from quality performance measures that focused on hospitalizations (Boccuti & Casillas, 2017). However, high-priority oncology reimbursement measures that are focused on quality care versus volume-focused care have been recently introduced (Appendix A). These oncology quality measures can be directly impacted by palliative care services, as palliative care is associated with an increase of advance directives on file, decrease in emergency department visits and ICU stays, and more likely to receive hospice care (Blackhall et al., 2016; Davis, Temel, Balboni, & Glare, 2015; Romano et al., 2014). Therefore, palliative care can further improve quality measure performance and positively impact reimbursement.

According to the IOM report *Dying in America*, increasing access to palliative care will not only enhance the quality of life for a patient with a life-limiting illness, but also contribute to a more sustainable healthcare system (IOM, 2015). The Doctor of Nursing Practice (DNP) scholarly work describes an evidence-based quality improvement project by reviewing the literature, highlighting key components of an organizational assessment, as well as exploring the project plan and outcomes of collaborating with a Midwest hospice and palliative care organization to evaluate telemedicine delivery of palliative care. Thus, the clinical practice question addressed was: What is an evidence-based toolkit to evaluate the structure, process, and outcomes for outpatient telemedicine delivery of palliative care?

Literature Review

The current state of management for individuals diagnosed with advanced cancer has led to increased hospitalizations and decreased quality of life (Hennemann-Krause et al., 2015; Matzo & Sherman, 2015). American Society of Clinical Oncology and WHO recommend palliative care to be implemented early in the outpatient setting for oncology patients (Gulcan et al., 2018; WHO, 2018). The aim of the literature review was to answer the following questions regarding palliative care for individuals diagnosed with cancer:

1. Does outpatient palliative care versus standard oncology care lead to improvement in symptom management?
2. Does outpatient palliative care versus standard oncology care increase survival rate?
3. Does outpatient palliative care result in decreased healthcare costs?
4. Is telemedicine a beneficial form of outpatient palliative care?

Search Outcomes

An initial search within Cumulative Index of Nursing and Allied Health Literature (CINAHL) and PubMed yielded a total of 101 articles. Each article was screened using inclusion and exclusion criteria according to PRISMA criteria (Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group, 2009) (Appendix B). In summary, a total of nine articles were included for review (Appendix C). The search yielded both retrospective and prospective studies. Of these, there were two randomized control trials (RCTs), and two systematic reviews included. These articles are classified as high evidence because they have a low risk of bias and generalizable data (Appendix D). Although the measurement and outcomes within each article were not the same, each assessed the overall benefit of outpatient palliative care for patients diagnosed with

advanced cancer. The articles reviewed highlighted some benefit of incorporating palliative care into an advanced cancer patient's treatment plan.

Results

Review of nine studies suggests that palliative care is beneficial for patients diagnosed with advanced cancer. First and foremost, patients noted that their quality of life was significantly better after receiving palliative care services (Davis et al., 2015; Zimmerman et al., 2014). Symptom management was another key outcome assessed within this literature review. Although symptom management was not any different for patients who received palliative care earlier, palliative care in combination with oncology treatment was associated with a decrease in symptom intensity (Bakitas et al., 2015; Bukki et al., 2013; Davis et al., 2015; Hennemann-Krause et al., 2015; & Kassianos, Ioannou, Koutsantoni, & Charalambous, 2018). These symptoms included pain, nausea, depression, mood, anxiety, and well-being that ultimately impacts one's quality of life (Kassianos et al., 2018).

Furthermore, the results from five articles demonstrated how the integration of palliative care services is associated with a decrease in hospital admissions, less ICU admissions, a decrease in aggressive treatment at the end of life, decrease in deaths at the hospital, and more likely to receive hospice care (Bukki et al., 2013; Blackhall et al., 2016; Davis et al., 2015; Kassianos et al., 2018; King, Eickhoff, Traynor, & Campbell, 2016; Romano et al., 2014). The patients who were more likely to receive hospice care ($p < 0.01$) also had a greater hospice length of stay ($p < 0.05$) (Blackhall et al., 2016). The less aggressive treatment for oncology patients ($p = 0.000$) and the increase in hospice services are benefits of palliative care that ultimately lead to a significant decrease in total cost of care ($p < 0.05$) (Bukki et al., 2013, Blackhall et al., 2016; Davis et al., 2015). Additionally, palliative care is associated with an increase in survival rates

($p=0.038$) (Bakitas et al., 2015; Kassianos et al., 2018). The significance of these results further emphasizes how palliative care can positively impact CMS reimbursement quality care measures for oncology providers (Appendix A) (CMS, 2017a).

Two key components when providing palliative care include both the patient and caregiver's perception of treatment. The conclusion of the systematic review is that there is an increase in patient satisfaction with their care when palliative care services are involved (Davis et al., 2015; Kassianos et al., 2018). Palliative care also significantly lessened caregiver burden ($p<0.01$) and increased self-confidence of family members with caring for their loved one ($p=0.01$) (Davis et al., 2015; Hennemann-Krause et al., 2018). When palliative care services are integrated into an oncology patient's treatment plan, there is a rise in advance directive completion, allowing an individual to have their wishes respected when they are incapable of making a decision themselves (Davis et al., 2015).

Another portion of this literature review focused on incorporating telemedicine as an additional outpatient option for palliative care. Telemedicine is an effective tool that allows for patient-centered care in rural communities with limited access to care (Hennemann-Krause et al., 2015). The integration of palliative care through telemedicine not only enhances care, but also is associated with greater access to healthcare services. Furthermore, palliative care telemedicine is associated with decreased emergency services, and improved symptom management (Hennemann-Krause et al., 2015). Those patients who received palliative care telemedicine versus standard oncology care had a significant increase in survival rates ($p=0.038$), thus showing another benefit of telemedicine when providing palliative care to oncology patients (Bakitas et al., 2015).

The results of this literature review reveal limitations in regards to palliative care, including the level of evidence (Appendix D). The literature review did incorporate systematic reviews and randomized control trials, however the review also included both retrospective and prospective studies, which may increase the risk for bias (Melnik & Fineout-Overholt, 2014). Additionally, since telemedicine is a new field of medicine, there were limited articles focusing on providing palliative care services through telemedicine. In conclusion, providing palliative care through telemedicine to patients diagnosed with cancer can positively impact the patient's quality of life (Hennemann-Krause et al., 2015). With the increase use of technology, there is a need to further evaluate the impact of telemedicine delivery of palliative care. In order to use the evidence and propose a plan to develop an evidence-based toolkit to evaluate outpatient telemedicine palliative care services within practice, an organizational assessment was needed.

Assessment of the Organization

An organizational assessment is vital when analyzing a proposed change, and determining how this change will impact the organization (Burke & Litwin, 1992). The organizational assessment was completed using the Burke-Litwin Model of Organizational Change to analyze the current state of a Midwest hospice and palliative care organization. In addition, an analysis of strengths, weaknesses, opportunities, and threats (SWOT) was completed to further determine and evaluate an innovative intervention to increase the integration of palliative care into the outpatient setting.

Stakeholders

Hospice and palliative care within this organization is assigned to the department of Acute Health and Continuing Care. Key stakeholders include the department and division chiefs, as well as healthcare providers and administrative personnel. These key stakeholders are part of a

leadership team that involves a vertical chain of command (Appendix E). Within the hospice and palliative care division, an interdisciplinary team is also essential to the organization. The team is comprised of physicians, physician assistants, advance practice registered nurses, registered nurses, social workers, chaplains, and trained volunteers. Every individual plays a vital role within the organization as team collaboration is needed to impact patient care. Additionally, the patients themselves are key stakeholders, in that providing palliative care can positively affect their quality of life and health outcomes (Dahlin, 2015; Matzo & Sherman, 2015).

Framework for Assessment

Burke & Litwin (1992) discuss both transformational and transactional factors that affect change (Appendix F). The 12 transformational and transactional factors within the Midwest hospice and palliative care organization were assessed. With constant change seen within this organization stemming from environmental influences, the model was used to define and depict the complexity of hospice and palliative care. The analysis of the organization assisted to determine the factors that can improve processes to positively impact patient care.

Transformational Factors. The external environment impacts transformational factors, including the mission and strategy, leadership, as well as the organizational culture. In regards to the external environment, the Medicare Access and CHIP Reauthorization Act of 2015 introduced oncology performance indicators for healthcare services that are driven by quality and outcomes instead of quantity (CMS, 2017a) (Appendix A). This external influence will impact the integration of palliative care into the outpatient setting for individuals diagnosed with cancer. Furthermore, the Midwest hospice and palliative care organization shares the same mission as its affiliated health care organization, which is “to improve the healthcare of the communities we serve”. Currently, the hours for face-to-face outpatient oncology palliative care are all day

Tuesday, and half days on Thursdays and Fridays. The limited hours of service hinder patient access to palliative care services. The organization could expand face-to-face outpatient palliative care services by increasing operational time and/or incorporating outpatient telemedicine for individuals in rural areas that have restricted access to care. While the organization has both administrative and clinical staff that serve as leaders with positive impact on patient-centered care, the only potential barrier lies within the culture of the organization. Hospice and palliative care are located in different buildings, adding difficulty in communication amongst the staff. The physical separation of services presents a barrier in the referral process, as the healthcare providers arranging for care are not always aware of the inclusion criteria for the initiation of palliative care services.

Transactional Factors. Transformational factors can therefore impact transactional factors. These factors include the climate, structure, system, management practices of an organization, as well as individual tasks and skills, needs and values, motivation, and individual and organizational performance (Burke & Litwin, 1992; Stone, 2015). Each of these components within the Midwest hospice and palliative care serve as facilitators to positively impact a change within practice. From a structure and systems perspective, the entire system has recently transitioned to the same electronic health record, which will increase communication amongst the healthcare providers. An area for improvement within the organization was the implementation of policies in which to screen patients with a life-limiting illness who can benefit from palliative care services, and create a discreet process for referrals in order to expedite the service.

In regards to individual tasks and skills, each member works within their scope of practice to deliver safe and efficient care for any life-limiting illness. Palliative care providers

feel highly valued for the ability to spend quality time with the patient, be an active listener, be honest, and express empathy. When providing palliative care, a healthcare provider meets with the patient initially and then de-identified data is logged into the palliative care quality network (PCQN) database to monitor and measure care provided. This affords a “comprehensive analysis of demographic data, process, and outcomes” (PCQN, 2018). When palliative care was introduced to the community at the organization, PCQN data disclosed an improvement in symptoms. From an initial to second assessment, improved scores for pain, nausea, constipation, anxiety and distress level were 49%, 61%, 83%, 59%, and 55% respectively (PCQN, 2018). Additionally, de-identified data from a previous DNP student project discovered patients who received palliative care within this Midwest organization were more likely to have advance directives on file and less likely to have an intensive care unit stay. Thus palliative care improves individual and organizational performance of these services for patients diagnosed with a life-limiting illness.

SWOT

To assess the strengths, weakness, opportunities and threats within this organization, a SWOT analysis was performed (Appendix G). Strengths and opportunities within the Midwest hospice and palliative care were identified. The organization is affiliated with the largest healthcare system in the area with many resources for growth and support. Additionally, the staff has great rapport amongst each other, feels highly valued, and are open to both change and improvement to increase the quality of care given to the patients. With the new electronic health record system that was initiated within the community recently at the healthcare system, there is an opportunity to change the way that hospice and palliative care referrals are requested. Additionally, with the CMS reimbursement criteria including oncology performance indicators,

there is the opportunity to expand home-based palliative care, increase hours at the oncology clinic, or incorporate telemedicine in rural healthcare settings into an oncology patient's plan of care (CMS, 2017a). Since there are currently no palliative care services offered in rural healthcare settings, increasing access would address the unique needs of this healthcare community.

Weaknesses and threats were also identified. The division of hospice and palliative care that are located at two different buildings can be a factor in effective communication between the programs. The inpatient palliative care providers are often unaware of all services home-based palliative care offers, and therefore referrals are often overlooked. Currently the organization lacks a defined policy and procedure for screening and referring patients for palliative care. Threats within this organization include the competing hospice and palliative care services within the Midwest region. A nearby hospital system also provides inpatient palliative services and has more accessibility to palliative services for oncology patients. The competitor has a full-time oncology presence, versus the project organization that has a total of two days for outpatient oncology care. Additionally, the cost and feasibility of expanding outpatient palliative care through telemedicine services is a potential threat.

Clinical Practice Question

Key stakeholders within a Midwest hospice and palliative care organization have identified the need to expand palliative care services for oncology patients to a rural healthcare setting through telemedicine. Utilizing evidence from the literature review, an evidence-based project was conducted to answer the following clinical practice question: What is an evidence-based toolkit to evaluate the structure, process, and outcomes for outpatient telemedicine delivery of palliative care?

Project Plan

Purpose of Project

The purpose of the DNP scholarly project was to work in collaboration with a Midwest hospice and palliative care organization to evaluate the delivery of palliative care via telemedicine to oncology patients. To facilitate the evaluation of the program, an evidence-based toolkit contained the following plan for evaluation of:

- telemedicine equipment and staffing needs,
- the care flow process in telemedicine delivery,
- educational material for referring providers,
- patient and organizational data collection,
- a cost savings analysis, and
- a sustainability plan.

This evidence-based toolkit has potential application to other settings for outpatient telemedicine delivery of palliative care.

Ethics and Human Rights Protection

An application for review and approval was submitted to both the Midwest organization and Grand Valley State University's (GVSU) Institutional Review Board (IRB). The organization's IRB determined that the proposed project does not meet the definition of research and approved this quality improvement project (Appendix H). Grand Valley State University IRB determined the same, and also approved this project as quality improvement (Appendix I). Furthermore, the DNP student participated in collaborative institutional training initiative (CITI) program for research ethics and compliance training. The DNP student was also responsible for management of the data. All de-identified data was kept on the organization's internal drive. The

data was not stored, shared, or transferred to thumb drives, cloud storage or any GVSU devices.

Design for the Evidence-based Initiative

The evidence-based toolkit to evaluate outpatient telemedicine delivery of palliative care was a program evaluation quality improvement project. In regards to program evaluation, the evidence-based toolkit included collaborating with the organization to evaluate outcome-based performance measures to assess change within practice (Moran, Burson, & Conrad, 2017). The goal of this project was to “reduce process variation and improve the outcomes of these processes for both the patients and the healthcare organization and system” (Agency for Healthcare Research and Quality [AHRQ], 2013).

Setting and Participants

The setting for the DNP scholarly project was at the division of hospice and palliative care within a large Midwest healthcare system. The organization offered palliative care to inpatients, outpatients in cardiology and oncology offices, as well as the home setting. The project work explored the feasibility of expanding the delivery of outpatient telemedicine to oncology patients in a rural healthcare setting to improve access to care. With the expansion of palliative care services via telemedicine, the project work further focused on evaluation of this innovative form of healthcare delivery.

The participant for the project was the organization itself. The telemedicine staff within the organization worked in collaboration with the DNP student to evaluate the structure, process, and outcomes of outpatient telemedicine delivery of palliative care to oncology patients. The key stakeholders included the division chief, manager of palliative care services, organizational doctoral-prepared nurse practitioner, as well as clinicians providing care to the patients. Nonetheless, in order to collect preliminary data highlighting the benefit of palliative

care telemedicine, the participation of the patients was crucial.

Conceptual Model: The Donabedian Model

The phenomenon of interest was development of an evidence-based toolkit to evaluate outpatient telemedicine delivery of palliative care. The conceptual model used to explore the phenomenon was the Donabedian model, which focused on evaluating the quality of medical care (Donabedian, 1988). This model emphasized the relationship between the structure, the process, and the outcomes to further evaluate the care delivered (Donabedian, 1988).

Project Outcomes

The deliverable of this project was the evidence-based toolkit to evaluate outpatient telemedicine delivery of palliative care explored through the lens of the Donabedian model.

Structure. Donabedian (2005) states, “with the proper settings and instrumentalities, good medical care will follow” (p. 695). An assessment incorporated the current state of palliative care services available to patients in rural communities within the healthcare system. In addition, the assessment included the setting of telemedicine services, the staff required to implement this delivery plan, as well as the equipment and training needed.

Process. The process focused on the protocols put into place within the quality improvement project, as well as the appropriateness of the intervention for the patient (Donabedian, 2005). The current state of the care flow was evaluated. Working in collaboration with the organization to formalize the care flow process from the beginning of treatment until the end of the telemedicine visit was an essential part of developing the evidence-based toolkit.

Outcomes. The outcomes focused on the impact of the healthcare service on both the patient, as well as the organization itself. Although outcomes usually present the “gold standard”

in measuring quality, an outcome is the result of several factors (AHRQ, 2015). Without having structure and process in place, the quality improvement project outcomes can be affected.

Implementation Model: PDSA Cycle

A quality improvement framework is important when implementing a change in practice to assess what is effective (Moran et al., 2017). The model used to guide project implementation was the PDSA Cycle. This quality improvement project focused on working in collaboration with the organization to evaluate outpatient telemedicine delivery of palliative care. The concepts of the PDSA Cycle were used to develop and evaluate a program for the Midwest hospice and palliative care organization to successfully implement outpatient telemedicine for patients. The plan was consistent with current evidence-based literature and guidelines, with implementation at an oncology setting as an example. The PDSA Cycle was essential in this quality improvement project, as change is not fully implemented throughout the entire organization until proven effective on a small scale (Lee, Wadha, Kruskal, & Larson, 2015).

Implementation Steps, Strategies, and Timeline

Since the organization did not offer palliative care services in rural healthcare settings, the need for palliative care via telemedicine was identified. Utilizing the PDSA Cycle, the implementation steps and strategies focused on collaboration with the organization to evaluate outpatient telemedicine delivery of palliative care and a timeline was developed (Appendix J). The steps included:

1. Identified and determined costs of key elements of structure including the setting, staff, as well as the equipment and training needed by November 9th, 2018.

2. Identified the billing codes for telemedicine visits with key stakeholders by November 9th, 2018 to further determine the return on investment of outpatient telemedicine delivery of palliative care.
3. Collaborated with key stakeholders to enhance the care flow processes and promote a common understanding of outpatient telemedicine delivery of palliative care (Powell et al., 2015). This was completed from November 2018 through February 2019.
4. To facilitate the process, established referral guidelines to telemedicine palliative care utilizing previous DNP baseline data to identify type of patients who would benefit from palliative care by November 15th, 2018. The referral process incorporated CMS oncology performance indicators for healthcare services that are driven by quality outcomes instead of quantity (Appendix A).
5. Identified satisfaction of the staff through informal interviewing of clinicians who are directly involved in the process of telemedicine delivery of palliative care by January 12th, 2019. The interviews consisted of, but were not limited to, satisfaction with job-related training, sufficient equipment to provide effective and efficient care, as well as feelings of support throughout telemedicine process.
6. Collected preliminary results of both organizational and patient outcomes by February 22nd, 2019. From an organizational perspective, this included return on investment to substantiate the value of telemedicine palliative care. From a patient perspective, the outcomes consisted of, but were not limited to, primary diagnosis, patient satisfaction, advance directive on file, and symptom intensity. Patient outcomes were gathered utilizing validated tools. Nonetheless, charts of patients receiving telemedicine palliative

care were reviewed from November 2018 to February 2019 to further obtain data regarding outcomes as well as return on investment.

7. Performed a cost savings analysis of implementing telemedicine palliative care by February 22nd, 2019.
8. Created sustainability plan by February 22nd, 2019.
9. Presented work to key stakeholders within Midwest hospice and palliative care organization by April 11th, 2018.
10. Defended final evidence-based toolkit to evaluate outpatient telemedicine delivery of palliative care in a Midwest healthcare system to colleagues at GVSU by April 11th, 2019. Uploaded final project to ScholarWorks©.

Analysis of Evaluation Plan

The evidence-based evaluation plan for outpatient telemedicine delivery of palliative care within the hospice and palliative care division of a large Midwest healthcare system was analyzed based on the acceptance of key stakeholders. Key stakeholders include the manager of palliative care, division chief, an organizational doctoral-prepared nurse practitioner, and the patients. Preliminary data was collected to further evaluate both organizational and patient outcomes as outlined in the evaluation plan toolkit. The data included but was not limited to return on investment, primary patient diagnosis, patient satisfaction, advance directive on file, and symptom intensity. The desired outcome was the acceptance of an evidence-based toolkit to evaluate the delivery of outpatient telemedicine palliative care within the organization to provide a comprehensive, evidence-based evaluation plan.

Resources and Budget

The resources utilized and the budget for the DNP project was addressed. First and

foremost, the resources included a commitment from the Midwest hospice and palliative care staff, as well as the faculty advisor, to attend meetings to engage in discussions regarding the proposed project. The DNP student had access to a laptop computer to access the electronic health record, safely secure and record data, and to communicate via email with the other participants for the project. Furthermore, access was given to the PCQN database to learn the record keeping of defined palliative care provider quality metrics, and to Center to Advance Palliative Care database to retrieve evidence-based information about building and sustaining palliative care interventions within the healthcare setting. Access was also granted to the telemedicine database to evaluate patient satisfaction.

A budget was created to determine the cost of the project plan (Appendix K). The budget included the time of organizational mentors and healthcare providers, as well as the materials necessary to implement and sustain outpatient telemedicine delivery of palliative care. In kind services included the student who served as the project manager and donated the majority of costs to the DNP project. In projecting cost mitigation long term, receiving palliative care can reduce emergency department visits and ICU stays (Hennemann-Krause et al., 2015; Romano et al., 2017). The cost of an emergency department or ICU stay ranges from \$1,233 to \$6,285; thus, if telemedicine palliative care can prevent one hospitalization, this is a key cost mitigation (Debt.org, 2018; University Hospitals, 2018).

Project Outcomes

A Midwest hospice and palliative care organization identified the need to expand palliative care services to rural settings via telemedicine. The services were introduced within this organization in November 2018 on a small scale to oncology patients. The telemedicine services were offered on the first and third Thursday of every month, for four-hour increments.

The quality improvement project focused on collaboration with a Midwest hospice and palliative care organization to create a comprehensive evaluation plan of outpatient palliative care telemedicine services. Utilizing the PDSA Cycle, a systematic assessment of the current process of telemedicine delivery of palliative care was evaluated, and further analyzed to examine if the delivery of care was both efficient and effective (Centers for Disease Control and Prevention [CDC], 2012). The evidence-based toolkit focused on the structure, process, and outcomes of outpatient telemedicine delivery of palliative care to evaluate and improve the achievements within this organization. Furthermore, the DNP scholarly project highlighted the quadruple aim of healthcare: to improve patient outcomes and experiences, reduce costs of care, and increase the satisfaction of the clinicians providing care (Bodenheimer & Sinsky, 2014).

Structure

The structure included the elements needed to provide care to the patients via telemedicine. The elements focused on equipment, essential staff to implement telemedicine delivery of palliative care, as well as the training required for the healthcare providers.

Equipment. Regarding equipment, two different spaces were needed to deliver telemedicine palliative care. The palliative care providers are located in an office space within the downtown cancer center, which was described as the “distant site”. The patients are located in an exam room in the rural cancer center, known as the “originating site”. Each space was approximately 100 square feet, with sufficient telemedicine equipment to provide care.

The Cisco Telepresence CE DX80 is the computer monitor utilized by the healthcare provider to communicate with and view the patient within the exam room. To complete the telemedicine visit, the organization has a secure network within their infrastructure, which

complies with the required Health Insurance Portability & Accountability Act (HIPAA) compliant video conferencing platform (American Telemedicine Association, 2014).

To perform an assessment of the patient, the camera located on the top of the computer monitor as well as an electronic stethoscope are used. The medical assistant can tilt the camera to assist the provider in thoroughly examining the patient. A Think Labs One Digital Stethoscope was used to listen to heart and lung sounds. In order for the healthcare provider to hear quality heart and lung sounds, plantronics blackwire C725 headset were essential. Lastly, to reference the patient's chart while performing a telemedicine visit, the providers had access via a Lenovo laptop.

Staffing. According to the state of Michigan legislature, “telemedicine services must be provided by a health care professional who is licensed, registered or otherwise authorized to engage in his or her health care profession in the state where the patient is located” (Insurance Code Act, 1956, p. 1). A licensed advanced practice registered nurse or physician assistant within the state of Michigan provided the telemedicine services to the patient. A collaborating physician was available on an as needed basis, to review treatment and plan of care.

Nonetheless, to provide comprehensive delivery of telemedicine in palliative care, many other healthcare professionals need to be involved. At the rural cancer clinic, a medical receptionist checked in the patient to initiate the teleconferencing. The medical assistant set up the equipment, took vitals, assisted the patient with paperwork, and was present during the examination to help the provider with care implementation. Within the palliative care office, the practice manager coordinated the care delivered and a registered nurse assisted in answering calls and communicating with pharmacies. The patient service representative scheduled the patients and logged data from the intake form into the PCQN database. When questions arose, or

a change in the care flow process needed completion, a telemedicine specialist assisted the healthcare team.

Training. Individuals involved in telemedicine delivery of palliative care were trained based on their role. The healthcare providers received training with the telemedicine specialist to review provider etiquette, technology training, and documentation requirements. Provider etiquette involves:

- neutral background with the organization's logo,
- space free of clutter,
- provider centered in screen with indirect, soft light,
- silenced phone and computer,
- provider identification with professional attire, including organization badge and lab coat,
- provider not to chew gum,
- provider to greet patient and identify self,
- have patient identify themselves, and
- maintain eye contact as much as possible.

While providing telemedicine services, it is important to explain to the patient that the provider will have to occasionally look down or away from the camera to review the patient chart. Eye contact is one of the most important aspects of provider-patient interaction (American Telemedicine Association, 2016).

Technology and documentation requirement training for the staff occurred in person with a telemedicine specialist. The healthcare providers were educated on how to use the equipment, practicing with another telemedicine specialist at the originating site. Orientation for the

providers included driving to the rural cancer center to have the healthcare provider and palliative care manager further understand the care flow process. The orientation familiarized the provider regarding the resources available, in the event laboratory or emergency services became necessary. The American Telemedicine Association (2014) guidelines outlined the importance of being prepared and having a plan if an emergency arose.

With the healthcare providers knowledgeable about the current electronic health record, no more than thirty minutes was spent in review of billing, coding, and documentation. The billing is similar to outpatient clinic visits, utilizing the new and established codes based on complexity and time (Appendix L). The provider can also bill an originating site facility fee for telemedicine services as described by CPT code Q3014 (Medicare Learning Network, 2018). However, since the rural cancer center utilized is part of a critical access hospital, a hospital billing telemedicine facility fee code was used. This code is HB 40355401. Documentation was similar to face-to-face except the provider had to state in the chart “this patient seen for today’s assessment/evaluation via telemedicine technology”. Overall, in the early stages of the program implementation, current structural elements of telemedicine delivery have been sufficient, but will need to be reevaluated if the program were to be expanded.

Process

Care Flow Process. Working in collaboration with the organization to formalize the care flow process from the beginning of treatment until the end of the telemedicine visit was an essential part of the evidence-based toolkit (Appendix M). The original care flow process incorporated signing a telemedicine consent form prior to the visit. From an administrative perspective, consent is an essential part of American Telemedicine Association guidelines (American Telemedicine Association, 2014). Moreover, the care flow process included

administration of validated tools prior to each visit to further assess and measure patient outcomes (Appendix N and O). The organization utilized the Patient Health Questionnaire-4 (PHQ-4), the Edmonton Symptom Assessment System (ESAS), and the Distress Screening thermometer. The PHQ-4 is a tool that assists in screening for both depression and anxiety in patients diagnosed with a life-limiting illness such as cancer (Stanhope, 2016; Weihs, Wiley, Crespi, Krull, & Stanton, 2016). The ESAS is an additional tool that assists healthcare providers in responding to changes in patient symptoms, as well as the distress screening thermometer highlights the psychosocial needs of patient's and their families (Diplock et al., 2018; National Comprehensive Cancer Network [NCCN], 2017).

To focus on evaluation of the care delivered, an additional question was added to the intake form (Appendix O). The question asked: "Have you had any hospitalizations or emergency room visits since your last visit?" The patient service representative can now look at the intake form uploaded into the electronic health record, and add into the PCQN database if a patient has recently had a hospitalization or emergency room visit. With the addition of the question, this data will now be collected and will evaluate compliance for one of the CMS reimbursement measures for oncology providers regarding costly hospitalizations (Appendix A).

Furthermore, the current state of the original care flow was reviewed, and changes were implemented for continued evaluation of telemedicine delivery of palliative care (Appendix M). Changes added to the workflow process included:

- confirming medication contract on file in the electronic health record yearly,
- acknowledging opioid start talking (OST) form on file, and

- adding the specific smart phrase created for documentation of telemedicine palliative care services. Smart phrases are preformatted documentation that allows for efficient charting into the electronic health record.

The medication contract is the organization's consent for controlled substance therapy. The consent contains information about controlled substances, as well as the rules for patient compliance to receive prescriptions (Appendix P). This consent defines the palliative care provider as the patient's primary provider of controlled substances. While state laws may vary, the organization is in compliance with the state's Department of Health and Human Services by including the OST form on file in the electronic health record (Appendix Q). Lastly, adding the smart phrase into the care flow process allows new providers to be aware of the documentation previously created. The smart phrase within the electronic health record is beneficial for efficient and accurate documentation of the providers delivering these telemedicine services (Appendix R). Despite the fact that the controlled substance changes might not be applicable to every telemedicine palliative care program, this highlighted the importance of continued evaluation to stay current with local, state, and federal regulations.

Referral Guidelines. To facilitate the process, a policy focusing on referral guidelines to palliative care services was previously created (Appendix S). The original plan was to share the referral guidelines to telemedicine palliative care, based on data from a previous DNP project identifying appropriate palliative care referrals. However, since the organization was currently offering this service on the first and third Thursday of every month, there was limited appointment time to promote a new form of care. Therefore, the organization has subsequently identified the need to expand services. Once expanded, information previously created will be

shared to educate oncology providers on telemedicine services, and how palliative care can positively impact CMS oncology reimbursement measures (Appendix A).

Provider Satisfaction. To evaluate staff satisfaction, staff interviews were conducted. The interviews consisted of satisfaction with job-related training, sufficiency of equipment to provide effective and efficient care, as well as feelings of support throughout the telemedicine process. The staff responses facilitated the evaluation of telemedicine delivery as it focused on improving the work life of providers who are delivering patient care (Bodenheimer & Sinsky, 2014).

Patient Satisfaction. To evaluate patient satisfaction of their palliative care telemedicine visit, the organization administered a survey via email to the patient. This data was logged into the telemedicine database. The organization used consumer assessment of healthcare providers and systems, Clinician and Group Adult Survey (CG-CAHPS) with additional questions to evaluate telemedicine care (Appendix T). The CG-CAHPS assesses the patient's experience with their healthcare provider and staff (AHRQ, 2018; Press Ganey, 2018). Evaluating patient satisfaction has not changed since the implementation of telemedicine palliative care. Nonetheless, an ongoing search for suggestions to improve the administration of palliative care and patient satisfaction is planned.

Outcomes

Informal Interviewing Outcomes. Through informal interviewing, the staff validated the appropriate training was given in regards to both documentation and technology. The healthcare providers acknowledged that there was sufficient equipment to provide effective and efficient care. With the sensitive nature palliative care encompasses, one provider identified the largest barrier with the video was at the initial visit with the patients. However, the provider

commented that, “the more I complete video visits and follow up with the same patients, the more the video barrier is broken down and rapport is built.” Although telemedicine palliative care is different from face-to-face visits, the patients were very satisfied with the convenience of not having to drive over an hour for an appointment. Thus, the healthcare provider felt this was an additional reward to themselves and patients. Overall, those involved in telemedicine palliative care have felt supported by telemedicine staff with the administration of care by this means.

Patient Outcomes. Preliminary data was collected and recorded to evaluate the benefit of outpatient telemedicine delivery of palliative care. A metrics table was created for evaluation purposes, identifying the metric definition, how it is collected, where collected, and the format in which it is presented (Appendix U). The data logged into the PCQN database consisted of diagnosis, advance directives on file, symptom intensity, and emergency department visits and hospitalizations. As previously stated under process, the patient filled out an intake form (ESAS, Distress screening, and PHQ-4) at each appointment (Appendix N & O). Once the patient service representative logged this data into the PCQN database, reports were generated based on the year, month, and type of patient visit. However, it was found that within the PCQN database it is not possible to separate clinic reports based on face-to-face versus telemedicine (Appendix V). Therefore, preliminary patient outcomes using this data pertaining to telemedicine were unable to be addressed, as reports generated did not differentiate the type of palliative care delivered.

Patient satisfaction was evaluated via a survey sent to the patient after the appointment. When reviewing the telemedicine database in December, it was noted that not one patient completed the survey via email. This was brought to the attention of a telemedicine specialist, and an error in the delivery of the survey was identified in that the survey was not emailed to the

patients after the telemedicine appointment. Subsequently, with collaboration with the organizational staff, the survey is now emailed to the patients after each telemedicine visit. Analysis of survey results will identify areas of improvement for continued evaluation of the program. An additional outcome measured was patient miles saved (Appendix W). The distance from the rural cancer center to the downtown palliative care office is 33.1 miles. In the month of November and December, a total of 595.8 miles were saved round trip for the patients and their families.

In creating an evidence-based toolkit to evaluate telemedicine palliative care, part of the sustainability plan will be to highlight the impact of these services on CMS reimbursement measures (Appendix A). The evidence-based toolkit has identified a process for collection and evaluation of emergency department visits, hospitalizations, and advance directives. However, the organization highlighted the need to also track palliative care patients who were admitted to hospice, and their hospice length of stay. Through collaboration with the organization, it was noted that logging hospice admission and length of stay is time-consuming through chart audits. Therefore, the goal became to build a report within the electronic health record that can show palliative care patients admitted to hospice, and patient hospice length of stay. This new process was initiated as a result of the program evaluation. Utilizing the PDSA Cycle, the organization will continue to focus on how to obtain this metric to evaluate telemedicine palliative care.

Organization Outcomes. It was important for the healthcare organization to analyze the cost/benefit ratio of implementing outpatient telemedicine delivery of palliative care. A cost analysis identified the most descriptive billing codes to maximize dollars reimbursed for telemedicine services to produce a positive return on investment. Since telemedicine palliative care began in November 2018, there was a limit on the amount of patients who received and

were billed for these services. However, evaluating the revenue capture over a two-month period noted palliative care telemedicine visits consistently of moderate or high complexity reimbursements (Appendix X). Reimbursement for moderate and high complexity visits are well compensated at approximately \$40 above low complexity encounters. Furthermore, when providing telemedicine visits for a patient, an additional facility code can be used. Since the originating site was located within a critical access hospital, the telemedicine facility fee billed was HB 40355401. The added revenue generated for the organization for seven patients was \$113.74.

The payor mix was analyzed to ascertain the percentage of revenue coming from government insurance in comparison to private insurance (Appendix Y). The payor mix consisted of Blue Cross Blue Shield (BCBS) PPO, Medicare PPO plus Blue, Humana Medicare Advantage, Priority Health Medicaid, and Molina Medicaid. The payment ratio based on closed claims for Blue Cross Blue Shield PPO was 58.3%, while the Medicare PPO plus Blue was 40%. The Humana Medicare Advantage payment ratio was 20%, with a balance bill to be paid by the patient of 33.22 dollars. Priority Health Medicaid was 27%, with Molina Medicaid being 39.9%. The analysis of the payor mix emphasized private insurance to be the highest reimbursement among payors for telemedicine delivery.

Lastly, the evidence-based toolkit included a complete cost analysis of telemedicine delivery of palliative care that occurred over a two-month period (Appendix Z). The allotted time devoted to telemedicine palliative care visits in November and December was 16 hours. Included in the cost analysis were the hourly wages of the staff. The overall percentage of expenses from staff wages was 62%. Furthermore, included in the cost analysis were equipment costs. The organization had access to two Cisco telepresence CE DX80, the digital stethoscope,

and a Lenovo laptop computer. The hospice and palliative care department had to purchase the plantronics blackwire C725 headset. To deliver these services the organization was utilizing office space that was previously conducive for telemedicine visits. However, to depict an accurate cost analysis for development of this program, the equipment costs were included. The cost of equipment was divided amongst all specialties utilizing the equipment for telemedicine services. The ongoing operational costs were also included, gathering the average cost of 100 square foot space in each of the rural and downtown setting (Loopnet.com, 2019a, Loopnet.com 2019b). Despite the fact that the overall cost analysis highlighted over a two-month period showed a negative return on investment, the equipment fees are a one-time, fixed expense.

Discussion

Telemedicine technology is becoming an essential tool in the delivery of healthcare. The organization identified the need to expand palliative care services to rural healthcare settings via telemedicine that began in November, 2018. The expansion of this service addressed the unique socioeconomic aspects of care for individuals living in rural communities. However, the organization was lacking an evaluation plan for these services. The development of an evidence-based toolkit to evaluate the structure, process, and outcomes of outpatient telemedicine palliative care was necessary to ensure standardized care delivery. Furthermore, the development of a toolkit would standardize the collection of data necessary for continued monitoring of the delivery and cost-effectiveness of telemedicine palliative care. Despite the fact there is limited data with a new program, each item in the toolkit focused on the quadruple aim of healthcare to create a comprehensive evaluation plan. The overall focus was to improve patient outcomes and experiences, reduce costs of care, and to provide delivery of palliative care to the satisfaction of the clinician (Bodenheimer & Sinsky, 2014).

Limitations

Limitations were noted within the DNP scholarly project. The development of the evidence-based toolkit to evaluate outpatient telemedicine palliative care was established in collaboration with the organization on a small scale in the oncology setting. With the expansion of these services within this setting, the toolkit may need to be modified. The sample size was small due to time constraints of the project, with limited data collected for both patient outcomes and revenue generated. Nonetheless, this is part of quality improvement, highlighting the need for continued evaluation.

Furthermore, there were limitations in collection of data. Currently, the patient service representative logs patient data into the PCQN database. Since it is out of the scope of practice to complete chart audits, the patient service representative only logs the information from the intake form (Appendix N & O). Therefore, this puts a limitation on the amount of data that can be collected for continued evaluation. With data logged into the PCQN database, there is not a specific drop down option to separate telemedicine data from the other palliative clinics within the organization (Appendix V). The lack of identifying telemedicine patient visits in the system limits data collection regarding who may have benefited from these palliative care services. To highlight the impact of telemedicine services on oncology CMS reimbursement measures, collecting information regarding the number of palliative care patients admitted to hospice and their hospice length of stay is crucial. Since this can be time consuming to complete chart audits daily, the solution was to build a report in the electronic health record to capture this data. However, within the organization, to build a report currently takes nine months. Therefore this could not be completed within the time frame of this project.

Utilizing the previous DNP scholarly work, the goal was to educate oncology providers on referral guidelines. In addition the DNP student was to educate oncology providers on the CMS performance indicators for healthcare services, and how palliative care can positively impact these reimbursement measures. Since telemedicine services are only offered every first and third Thursday of the month for four hours, there were limited appointments available and thus limited access to services to encourage referrals and define long-term reimbursement benefits to a practice. Once telemedicine services are expanded, appropriate referrals will be an important part of the continued evaluation of telemedicine palliative care.

Sustainability Plan

The hospice and palliative care division within the Midwest organization has readied support and an existing plan for program growth and development of palliative care through telemedicine. With the evidence-based program evaluation plan initiated within this project, the organization can continue to evaluate outpatient telemedicine palliative care by using the PDSA Cycle to assess the impact on CMS oncology performance indicators (Appendix A). A projection cost analysis over a six-month period of palliative care portrays a definite savings for the organization (Appendix AA). Since palliative care is associated with a significant decrease in emergency department visits and ICU stays, prevention of costly acute care services can lead to cost savings for the organization (Hennemann-Krause et al., 2015; Romano et al., 2017). Prevention of one emergency department visit saves the organization on average \$1,233.00 (Debt.org, 2018). Furthermore, the organization noted the average length of stay of oncology patients in the ICU to be approximately 10 days. The average cost for one day in the adult ICU is \$6,536.00 (University Hospitals, 2018). Therefore, prevention of one ICU stay can save approximately \$65,000.00.

In regards to continued evaluation, modifications of data collection can accurately determine patient outcomes. First and foremost, collaborating with individuals who make changes within the PCQN database may allow obtaining reports that differentiate telemedicine services from clinic visits. Furthermore, changing the process so that providers themselves log data in the PCQN database versus the patient service representative may allow for accurate data to be collected (i.e. code status). Lastly, with expansion of services, the telemedicine specialist can assess appointment cancellation and no show rates for telemedicine delivery.

Dissemination of Results

The evidence-based toolkit was presented to the key stakeholders of the Midwest hospice and palliative care organization. Furthermore, a poster presentation of the project findings was presented at the Annual Assembly of Hospice and Palliative Care conference in Orlando, Florida in March, 2019. To disseminate the results at GVSU, the toolkit was presented to the DNP student's project team, graduate nursing students, faculty, and the public in attendance. Finally, the evidence-based toolkit explaining the scholarly project in detail was uploaded to ScholarWorks©.

Conclusion

Palliative care focuses on symptom management and stress relief for patients and families who present with a difficult diagnosis (CAPC, n.d.). When palliative care does become a part of the oncology treatment plan, it is associated with an increase in quality of life, survival rate, and symptom management, and a decrease in healthcare costs (Blackhall et al., 2016; Dahlin, 2015; Hennemann-Krause et al., 2015). However, the access to palliative care services in rural communities is limited. According to the IOM report *Dying in America*, increasing access to palliative care will both enhance the quality of life for patients with a life-limiting illness and

contribute to a more sustainable healthcare system (IOM, 2015). The organization identified the need to increase access of palliative care to oncology patients in a rural healthcare setting. Thus, the quality improvement project answered the clinical practice question: What is an evidence-based toolkit to evaluate the structure, process, and outcomes of outpatient telemedicine delivery of palliative care?

The evidence-based toolkit included a plan for evaluation of telemedicine equipment and staffing needs, the care flow process in telemedicine delivery, educational material for referring providers, patient and organizational data collection, a cost savings analysis, and a sustainability plan. The evidence-based toolkit ensures standardized care delivery, and can be adapted to evaluate telemedicine delivery in varied populations in different settings to expand palliative care services. Through continued evaluation, the goal is to ascertain the positive impact of telemedicine delivery of palliative care on CMS reimbursement measures (Appendix A). In conclusion, the project focused on the quadruple aim of healthcare: to improve patient outcomes, reduce health care costs, enhance patient experience, and improve the work life of healthcare providers (Bodenheimer & Sinsky, 2014).

Reflection on DNP Essentials

The American Association of Colleges of Nursing (AACN) outlined eight essentials that define the competencies of a DNP graduate (AACN, 2006).

Scientific Underpinnings for Practice.

Scientific underpinnings for practice focuses on translating evidence into practice to benefit patients within different environments (AACN, 2006). The DNP student was able to evaluate the new practice approach of telemedicine delivery of palliative care by focusing on the

Donabedian model: structure, process, and outcomes. Furthermore, to enhance health care delivery, the DNP student incorporated evidence-based guidelines into practice.

Organizational and Systems Leadership for Quality Improvement and Systems Thinking.

In order to improve patient outcomes within healthcare, it is critical to have organizational and systems leadership (AACN, 2006). To meet current needs of the oncology population, the organization identified the need to deliver telemedicine palliative care in a rural cancer center. The DNP student worked in collaboration with this organization to evaluate an innovative care delivery model. This scholarly project focused on quality improvement, by using advanced communication skills to make a positive impact within practice. Furthermore, the scholarly project provided a detailed budget that focused on the cost-effectiveness of delivering this different and innovative form of healthcare.

Clinical Scholarship and Analytical Methods for Evidence-Based Practice.

Clinical scholarship and analytical methods for evidence-based practice requires competency in “improvement of reliability of healthcare practice and outcomes” (AACN, 2006, p.11). By creating an evidence-based toolkit to evaluate the structure, process, and outcomes of telemedicine delivery of palliative care, there is a consistent way to track and therefore evaluate both patient and organizational data. With CMS reimbursement measures as a driving factor to incorporate palliative care services for oncology providers, the toolkit will highlight the impact of telemedicine services on these measures through continued evaluation. To disseminate outcomes, the findings of the scholarly project were presented at the Annual Assembly of Hospice and Palliative Care conference, via an oral defense, and through paper publication in ScholarWorks©.

Information Systems/Technology and Patient Care Technology for the Improvement and Transformation of Health Care.

The DNP graduate is prepared to have knowledge in information and systems technology (AACN, 2006). The project focused on utilizing innovative technology to deliver care. However, the DNP student also completed chart audits within the electronic health record to determine the correct billing and coding completed. Furthermore, the DNP project focused on data extraction from the electronic health record to complete an accurate cost analysis and determine the return on investment for the organization.

Health Care Policy for Advocacy in Health Care.

Health care policy influences the delivery of care in many organizations (AACN, 2006). The opioid crisis in Michigan has impacted palliative care services, focusing on the importance of continuing to follow the law when providing care via telemedicine. Incorporating the OST form has become a part of the standard care flow process for telemedicine delivery of palliative care. Additionally, as a DNP prepared nurse practitioner, attending advocacy day in Lansing, MI highlighted the importance of advocating for policies that address equity in healthcare.

Interprofessional Collaboration for Improving Patient and Population Health Outcomes.

With the complexity of today's healthcare system, collaborating as an interdisciplinary team is key to deliver patient-centered care (AACN, 2006). To implement the scholarly project, the DNP had to effectively communicate and collaborate with the interprofessional teams. Through meetings, emails, and telephone conversations, the DNP worked together with the healthcare providers and managers to create an evidence-based toolkit to evaluate outpatient telemedicine delivery of palliative care. The DNP student also attended the Midwest

Interprofessional Practice, Education, and Research Center conference that discussed the importance of interprofessional care in the workplace.

Clinical Prevention and Population Health.

To improve the health status of individuals it is important to focus on health promotion and risk reduction (AACN, 2006). Nonetheless, it is also essential to include socioeconomic dimensions of healthcare. By incorporating palliative care via telemedicine in rural healthcare settings, the organization is focusing on addressing access to care. The scholarly project is evaluating this intervention, emphasizing palliative care will increase patient outcomes, reduce healthcare costs, and increase both provider and patient satisfaction. The DNP student has also addressed this essential by attending multiple seminars about the population in the Midwest region, and how to best approach care based on environmental, cultural, and socioeconomic dimensions of health.

Advanced Nursing Practice.

The DNP curriculum prepares the graduate to perform a comprehensive assessment in complex situations, evaluate interventions provided, sustain relationships, and continue to mentor and educate other nurses to achieve excellence in practice (AACN, 2006). The DNP student has observed and performed assessments for individuals in complex situations in both inpatient and outpatient palliative care settings, contributing to the quality of this scholarly project. Additionally, the scholarly project focused on continuing to educate the healthcare providers on how to deliver and document telemedicine palliative care services for continued evaluation. The DNP-prepared nurse practitioner is prepared to maintain relationships with both patients and other healthcare professionals to facilitate the best care for patients and their families.

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Appendix A

CMS Oncology Quality Measures

Measure Number	High Priority Oncology Measure
#453	Proportion receiving chemotherapy in the last 14 days of life
#454	Proportion of patients who died from cancer with more than one emergency department visit in the last 30 days of life
#455	Proportion admitted to the ICU in the last 30 days of life
#456	Proportion not admitted to hospice
#457	Proportion admitted to hospice for less than 3 days
#047	Care Plan: Percentage of patients who have an advance care plan of medical decision maker documented in their medical chart

Note. Oncology quality measures adapted from “MACRA” by Center for Medicare and

Medicaid Services. Copyright 2017 by U.S. Center for Medicare and Medicaid Services.

Appendix B

PRISMA Flow Diagram of Systematic Search

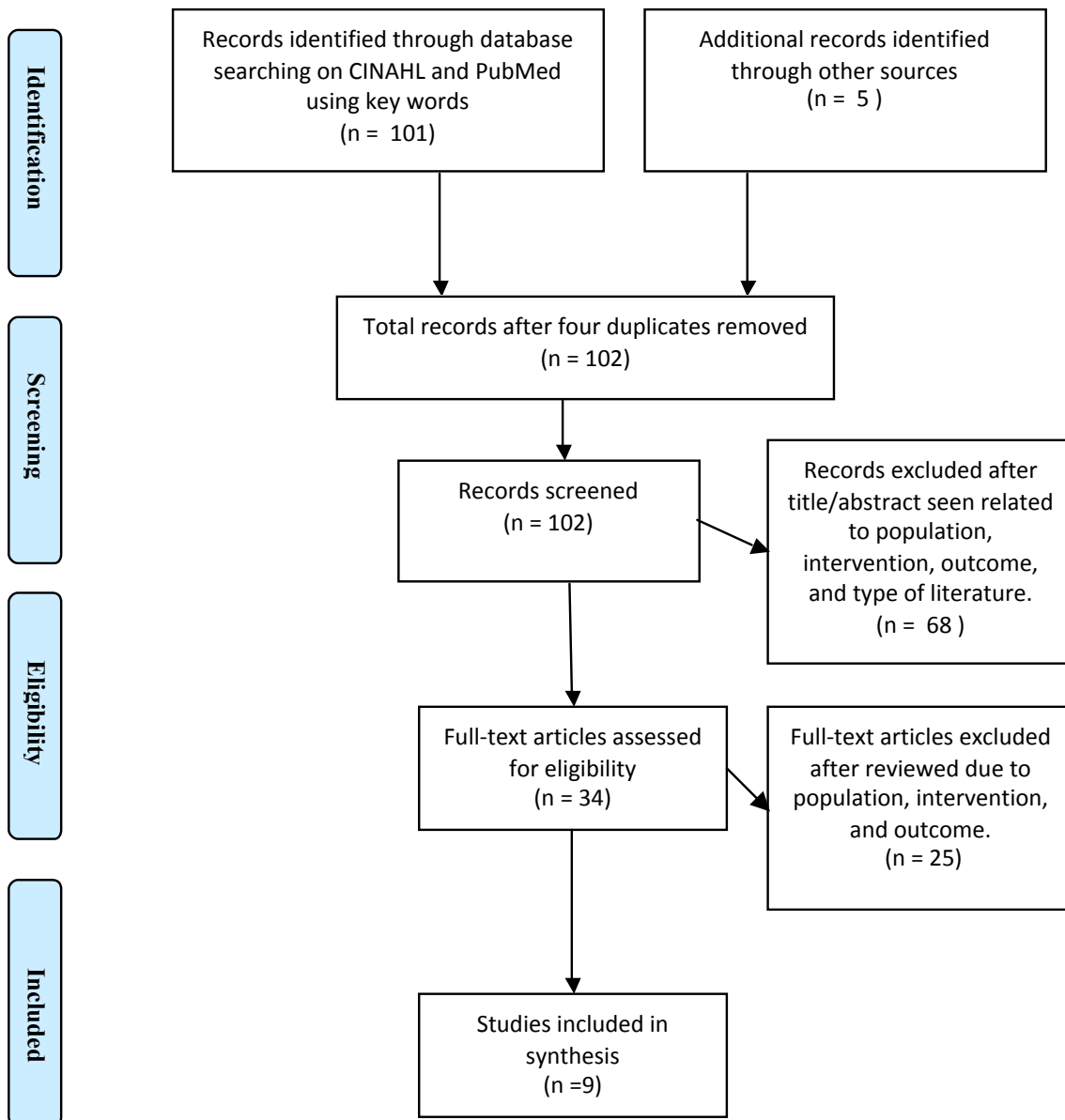


Figure 1. Flow diagram of search selection process. Adapted from “Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement” by D. Moher, A. Liberati, J. Tetzlaff, D. Altman, and PRISMA Group. Copyright 2009 by PLoS Medicine.

Appendix C

Articles included in review with author, year, purpose, design, inclusion, intervention, results, and conclusions.

Author (Year) Purpose	Design (N)	Inclusion Criteria	Intervention vs Comparison	Results	Conclusion
Bakitas et al. (2015) Purpose: To evaluate the benefit of early initiation of palliative care through both clinics and telehealth.	Randomized control trial N=207	Individuals who are English-speaking, ≥ 18 years with advanced cancer and 6 to 24 months to live.	Patients were randomly assigned and either received palliative care with telehealth and standard oncology care at either 30 or 60 days of being of diagnosis versus three months later.	<ul style="list-style-type: none"> Survival rates were 63% in early group versus 48% in later group (p=0.038). Symptoms and resource use were not significantly different 	There needs to be continued research on survival rates with palliative care interventions, as well as when to first intervene with palliative care services.
Bukki et al. (2013) Purpose: To assess symptom burden and treatment intensity near the end of life in individuals who receive palliative care.	Retrospective chart review N=96 N=15 (received palliative care services) N=111	All patients in an oncology outpatient clinic who died between July 2009 and July 2011. This institution includes wide range of cancer: both hematologic and solid tumors.	Utilization of palliative care vs. standard care for individuals diagnosed with cancer.	Patients who received palliative care had: <ul style="list-style-type: none"> Fewer symptoms at the end of life (p=0.006) Less aggressive interventions (p=0.000) Fewer procedures (p=0.035) 	Most cancer patients receive aggressive treatment at the end of life. Having conversations through palliative care services can eliminate unnecessary treatments.
Blackhall et	Prospective	Incurable	Oncology	Patients with	Referral to

<p>al. (2016)</p> <p>Purpose: To measure timing of outpatient palliative care referral and its impact on care at the end of life.</p>	<p>N= 198 (standard patients)</p> <p>N= 178 (CARE track-Palliative care patients)</p> <p>N=376</p>	<p>malignancies being treated at Virginia Emily Couric Cancer Center</p> <p>Age: 24-83</p>	<p>patients referred to outpatient palliative care in comparison to individuals with similar diagnoses who are not seeing palliative care or only saw palliative care inpatient.</p>	<p>outpatient palliative care were:</p> <ul style="list-style-type: none"> ● Less likely to be admitted to hospital in the last month of life ● Less likely to die in the hospital ● More likely to receive hospice care (p< 0.001), with a greater hospice length of stay (p<0.05) ● Cost of care less (p<0.05) 	<p>outpatient palliative care improved end of life and reduced costs of care. These benefits were not seen with inpatient palliative care only. Nonetheless, many patients are not referred which needs to improve in the oncology population.</p>
<p>Davis, Temel, Balboni, & Glare. (2015)</p> <p>Purpose: To assess the benefit of outpatient and home palliative care services.</p>	<p>Systematic Review</p> <p>15 RCTs of outpatient palliative care</p> <p>13 RCTs of palliative home care</p>	<p>Individuals \geq 18 years of age diagnosed with a life-limiting illness.</p>	<p>Of the 28 RCTs, each study compared standard care versus addition of palliative care services.</p>	<p>Palliative care intervention associated with:</p> <ul style="list-style-type: none"> ● Improved symptoms ● Increased quality of life ● Decrease in aggressive care at the end of life ● Reduced hospital length of stay ● More advance directives completed ● Reduction in healthcare costs ● Increased patient satisfaction. ● Improvement in caregiver burden <p>However, of the 28 RCT trials, 7 RCTs</p>	<p>This systematic review did reveal the overall benefit in palliative care for individuals with a life-limiting illness. However, there needs to be a standardized definition of early palliative care and when to first intervene.</p>

				revealed no benefit of palliative care services, especially with palliative home services.	
Hennemann-Krause et al. (2015)	Prospective study N=12	Patients referred for outpatient palliative care who were ≥ 18 years of age with advanced cancer from January 2011 to August 2013.	No comparison: Patients who participated in palliative care with monthly consultations and weekly web conferences through telemedicine	Palliative care telemedicine was associated with: <ul style="list-style-type: none"> • Greater access to care • Less likely to go to the emergency department • Improved symptom management • Increase in caregiver satisfaction 	Telemedicine increased access to healthcare and assisted to increase palliative care services.
Kassianos et al. (2018).	Systematic Review 11 studies, 5 RCTs N=2939	Patients > 18 years old, diagnosed with primary and metastatic cancer between 2001 and 2014.	Patients who received specialized palliative care services versus standard care.	In both RCT and non-randomized studies specialized palliative care was associated with: <ul style="list-style-type: none"> • Decreased in symptoms: pain, nausea, depression, mood, anxiety, and spiritual well being • Less likely to die in a hospital • Increased patient satisfaction • Two studies revealed increased survival rate 	Palliative care improves quality of life and decreases suffering associated with advanced cancer.
King et al. (2016).	Retrospective Analysis N=207 (standard care)	Individuals diagnosed with lung cancer being treated outpatient from 2007-2011	Patients who received early palliative care with oncology care in comparison to standard	Patients with palliative care: <ul style="list-style-type: none"> • Survived 2 months longer (p=0.031) • Median hospice LOS was longer 	Palliative care is beneficial and causes no harm when diagnosed with lung

survival and utilization of resources at an onco-palliative care lung cancer clinic.	N=82 (Palliative care intervention) Total: N=289		oncology care.	(p=0.032) ● No difference between chemotherapy utilization and hospice enrollment	cancer.
Romano et al. (2017) Purpose: To assess the incorporation of early palliative care on ICU use and other outcomes in individuals diagnosed with advanced cancer.	Retrospective analysis N=195 (standard care) N=275 (Palliative care intervention) Total: N=470	Advanced cancer outpatient oncology	Patients who received early palliative care integration versus those who received standard care.	Patients who received palliative care were: ● Less likely to have an ICU admission ● Less likely to die in the hospital	This study concluded that early initiation of palliative care can decrease the consequence of aggressive care in the ICU for patients diagnosed with advanced cancer.
Zimmerman et al. (2014). Purpose: Evaluate the effects of implementing palliative earlier in individuals diagnosed with advanced cancer.	Randomized control trial N=155 (standard care) N= 131 (Palliative care intervention) Total: N=286	≥18 years old, advanced cancer with prognosis of 6-24 months	Patients were randomized. Patients who received the intervention received outpatient palliative care and follow-up from a physician or nurse versus standard care.	Quality of life and satisfaction of care significantly improved in patients who received palliative care intervention (p=0.05)	Early involvement of palliative care is beneficial for patients who are diagnosed with advanced cancer.

Appendix D
Hierarchy of Evidence

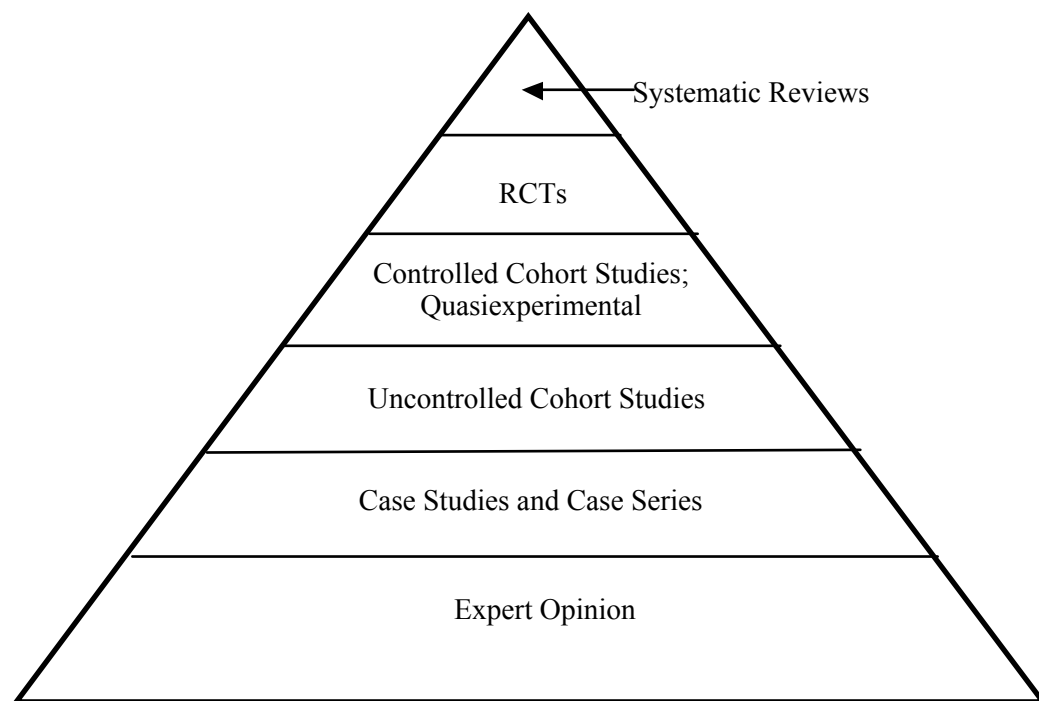
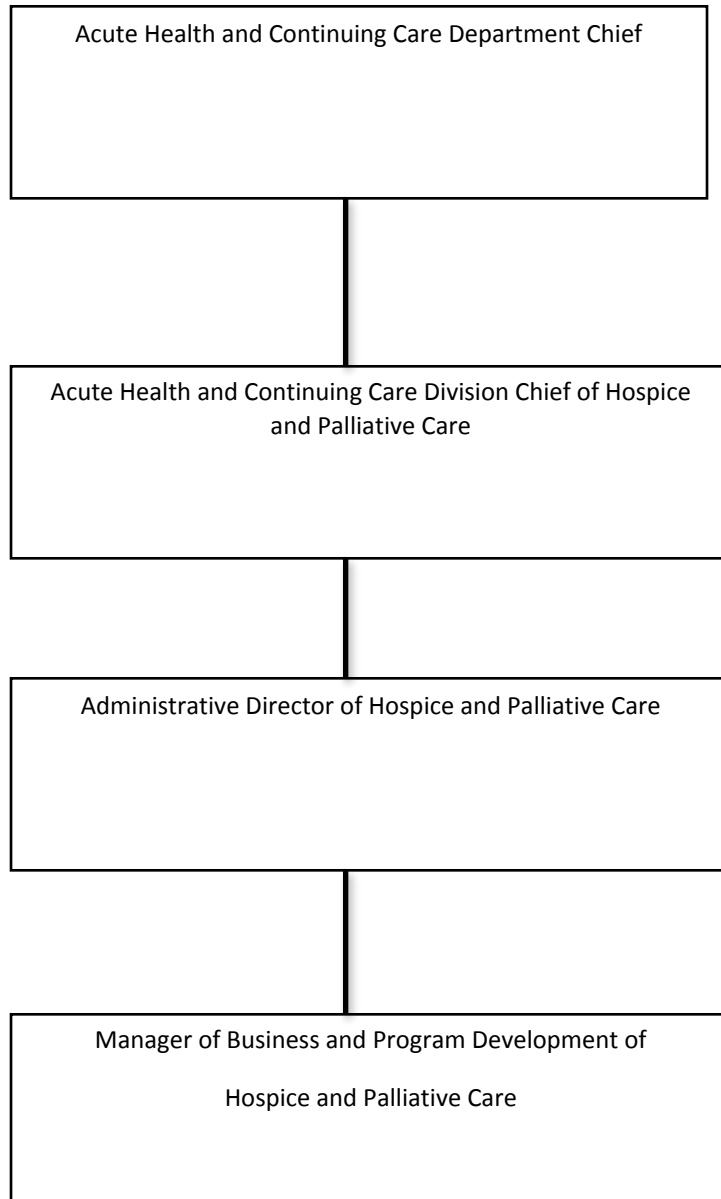


Figure 2: Hierarchy of evidence for intervention questions. Adapted from “Evidence-Based Practice in Nursing and Healthcare: A Guide to Best Practice,” by M. Melnyk and E. Fineout-Overholt, 2014, Wolters Kluwer Health.

Appendix E

Hospice and Palliative Care Department Chain of Command



Appendix F

The Burke-Litwin Model of Organizational Performance and Change

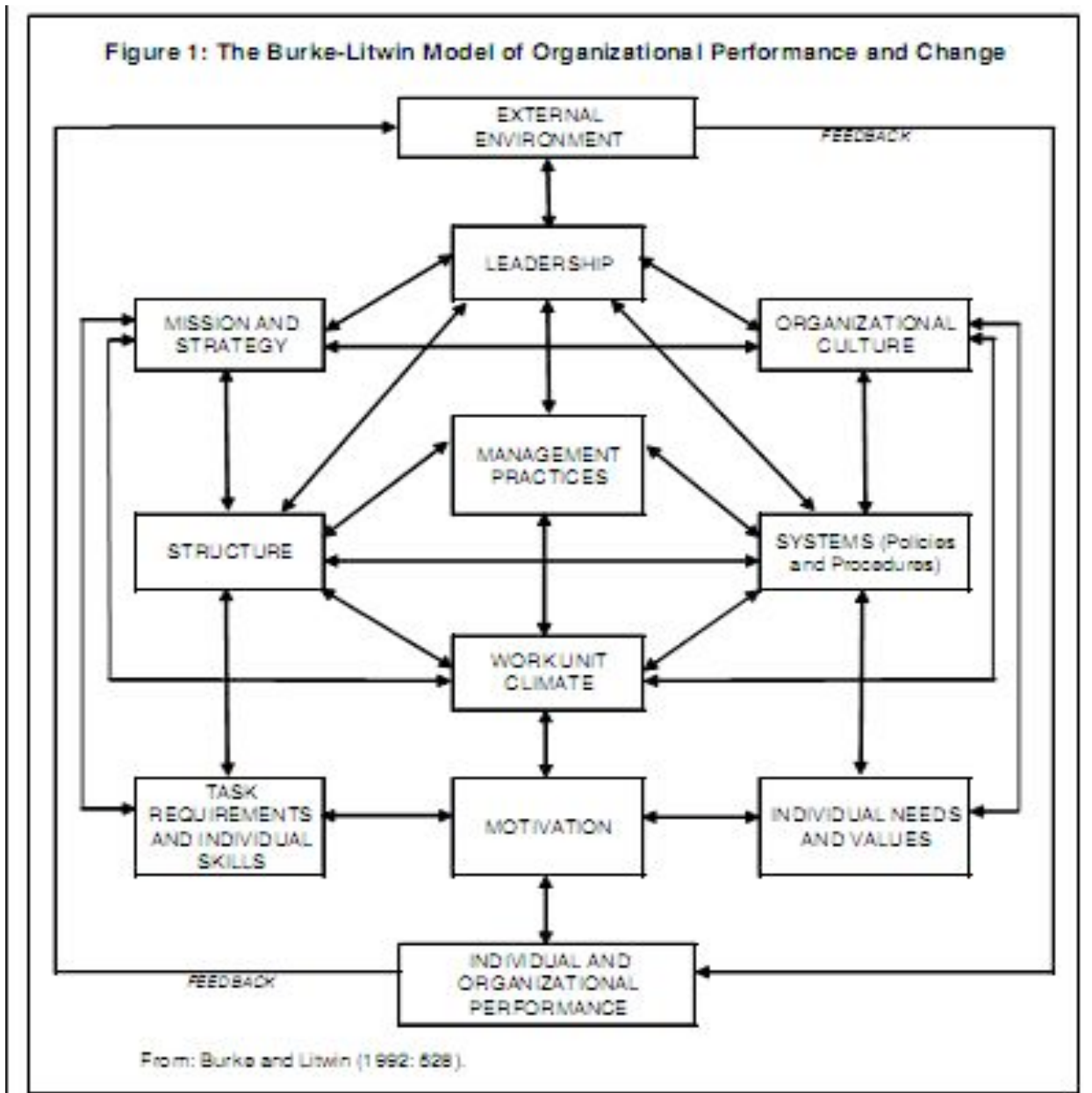


Figure 3. A model of organizational performance and change. Reprinted from “A Causal Model of Organizational Performance and Change.” By W.W Burke and G.H Litwin, 1992, *Journal of Management*, 18, 528. Copyright 1992 by Southern Management Association.

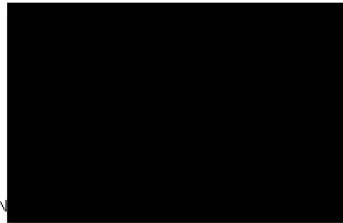
Appendix G

SWOT Analysis of a Midwest Hospice and Palliative Care Organization

<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> • Department within the largest healthcare system in the Midwest • One of the largest hospice and palliative care services in the area. • Resources for growth and support • Good staff rapport, feel highly valued 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> • Confusion regarding difference between hospice and palliative care services • Inpatient palliative care staff unaware of outpatient services and referral criteria
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • Increased access to hospice and palliative care services through EHR referral process • CMS reimbursement criteria leading to more oncology referrals being placed • Expanding outpatient palliative care services for oncology patients including telemedicine 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • Competing organizations within Midwest • Nearby healthcare system has more access to oncology outpatient services • Potential costs/feasibility of telehealth services

Figure 4. SWOT Analysis of West Michigan Hospice and Palliative Care Organization.

Appendix H
Organization IRB Determination



NON HUMAN RESEARCH DETERMINATION

June 27, 2018



PROTOCOL TITLE: **Evaluation of Outpatient Palliative Care**

SPONSOR: *Other

Dear Ms. Dwyer,

On June 27, 2018, the above referenced project was reviewed. It was determined that the proposed activity does not meet the definition of research as defined by DHHS or FDA.

Therefore, approval by [redacted] IRB is not required. This determination applies only to the activities described in the IRB submission and does not apply if changes are made. If changes are made and there are questions about whether these activities are research involving human subjects, please submit a new request to the IRB for a determination.

A quality improvement project may seek publication. Intent to publish alone is insufficient criterion for determining whether a quality improvement activity involves human subject research. However, please be aware when presenting or publishing the collected data that it is presented as a quality improvement project and not as research.

Please be advised, this determination letter is limited to IRB review. It is your responsibility to ensure all necessary institutional permissions are obtained prior to beginning this project. This includes, but is not limited to, ensuring all contracts have been executed, any necessary Data Use Agreements and Material Transfer Agreements have been signed, documentation of support from the Department Chief has been obtained, and any other outstanding items are completed (i.e. CMS device coverage approval letters, material shipment arrangements, etc.).

Your project will remain on file with the Office of the IRB, but only for purposes of tracking research efforts within the [redacted]. You should have questions regarding the status of your project, please contact the Office of the IRB at [redacted] org.

Sincerely,

Jeffrey Jones MD
Chair [redacted] IRB

cc: Quality Specialist

Appendix I

GVSU IRB Determination



DATE: July 10, 2018

TO: Dianne Conrad, DNP
 FROM: HRRC
 STUDY TITLE: Evaluation of Outpatient Palliative Care
 REFERENCE #: 19-012-H
 SUBMISSION TYPE: HRRC Research Determination Submission

ACTION: Not Research
 EFFECTIVE DATE: July 10, 2018
 REVIEW TYPE: Administrative Review

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

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

The purpose of this project is to implement early integration of palliative care in the outpatient setting for individuals diagnosed with metastatic cancer. Even though this is a systematic investigation, it is not designed to create new generalizable knowledge. The goal of this project is to facilitate evidence-based research into practice in order to improve the care being provided to patients at a local health center. Therefore, this project does not meet the federal definition of research and IRB oversight is not required.

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

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

Sincerely,
 Office of Research Compliance and Integrity

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

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

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

Appendix J

Timeline of DNP Scholarly Project

Identify and determine key elements of structure: 11/09/18	Identify billing and coding for telemedicine services: 11/09/18	Establish referral guidelines: 11/15/2018	Informal interviewing of staff: 01/12/2019	Collect preliminary organizational and patient outcomes: 02/22/2019	Perform cost savings analysis: 02/22/2019	Create sustainability plan: 02/22/2019	Present work to key stakeholders, Defend final DNP scholarly project: 04/11/19
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Appendix K

Budget for DNP Project

Doctor of Nursing Practice Project Financial Operating Plan**Project Title**

Evaluation of Telemedicine Delivery of Palliative Care

Revenue

Project Manager Time (in-kind donation)	14,000.00
Team Member Time:	
Director of Hospice and Palliative Care (Site Mentor)	2,450.00
Doctoral-prepared Nurse Practitioner (Site Mentor)	2,500.00
Palliative Care Nurse Manager (Site Lead)	2,000.00
Consultations	
Telemedicine Specialist (Education Session)	45.00
Statistician	100.00
Projected cost mitigation	
Emergency Department Visit (prevention of 1 ED visit)	1,233.00
Intensive Care Unit Stay (prevention of 1 day in ICU)	6,285.00
TOTAL INCOME	28,613.00

Expenses

Project Manager Time (in-kind donation)	14,000.00
Team Member Time:	
Director of Hospice and Palliative Care (Site Mentor)	2,450.00
Doctoral-prepared Nurse Practitioner (Site Mentor)	2,500.00
Palliative Care Nurse Manager (Site Lead)	2,000.00
Consultations	
Telemedicine Specialist (Education Session)	45.00
Statistician	100.00
Equipment	
Plantronics blackwire C725	164.99
Think Labs One Digital Stethoscope with Warranty (\$741.70 / 5)	148.34
CA750 Telemedicine Cart (\$2,746.00 / 5)	549.20
Cisco Telepresence CE DX80 (\$2,746.00 / 6)	457.67
Lenovo Laptop	673.67
Rural Setting Office Space (\$31.60 per month)	31.60
Downtown Setting Office Space (\$200.00 per month)	200.00
TOTAL EXPENSES	23,320.47

Net Operating Plan

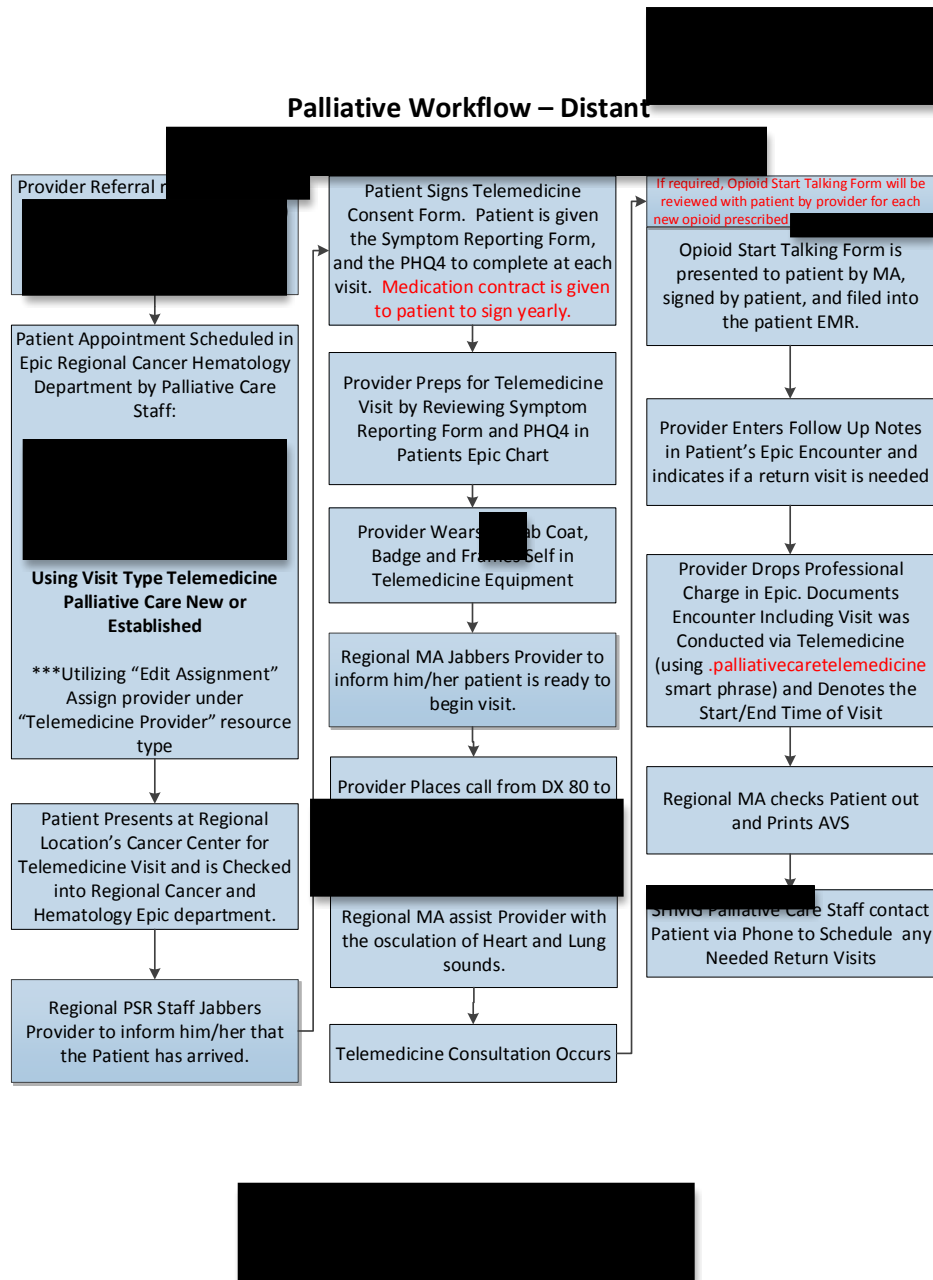
5,292.53

Appendix L

Palliative Care Telemedicine Codes

Palliative Care Telemedicine	
Code	Description
99201	OFFICE/OP VISIT, NEW PT, 3 KEY COMPONENTS: PROB FOCUS HX; PROB FOCUS EXAM; STRTFRWD MED DECISION, 10 MIN
99202	OFFICE/OP VISIT, NEW PT, 3 KEY COMPONENTS: EXPAND PROB FOCUS HX; EXPAND PROB FOCUS EXAM; STRTFRWD DEC, 20 MIN
99203	OFFICE/OP VISIT, NEW PT, 3 KEY COMPONENTS: DETAILED HX; DETAILED EXAM; MED DECISION LOW COMPLEXITY, 30 MIN
99204	OFFICE/OP VISIT, NEW PT, 3 KEY COMPONENTS: COMPREHENSIVE HX; COMPREHENSIVE EXAM; MED DECISION MOD COMPLEX, 45 MIN
99205	OFFICE/OP VISIT, NEW PT, 3 KEY COMPONENTS: COMPREHENSIVE HX; COMPREHENSIVE EXAM; MED DECISION HIGH COMPLEX, 60 MIN
99211	OFFICE/OP VISIT, EST PT, 5 MIN
99212	OFFICE/OP VISIT, EST PT, 2 KEY COMPONENTS: PROB FOCUS HX; PROB FOCUS EXAM; STRTFRWD MED DECISION, 10 MIN
99213	OFFICE/OP VISIT, EST PT, 2 KEY COMPONENTS: EXPAND PROB HX; EXPAND PROB EXAM; MED DECISION LOW COMPLEX, 15 MIN
99214	OFFICE/OP VISIT, EST PT, 2 KEY COMPONENTS: DETAILED HX; DETAILED EXAM; MED DECISION MOD COMPLEXITY, 25 MIN
99215	OFFICE/OP VISIT, EST PT, 2 KEY COMPONENTS: COMPREHENSIVE HX; COMPREHENSIVE EXAM; MED DECISION HIGH COMPLEX, 40 MIN

Appendix M
Current Care Flow Process



Key:
AVS: After Visit Summary
Jabbers: Instant messaging system within organization that allows the providers to communicate via text.
MA: Medical Assistant
PSR: Patient Service Representative

Appendix N

Midwest Hospice and Palliative Care: Intake Form

Edmonton Symptom Assessment System (XXX, 2018)

Edmonton Symptom Assessment System:

Palliative Care Program

Please circle the number that best describes:

Please mark on these pictures where it is you hurt

No pain 0 1 2 3 4 5 6 7 8 9 10 Worst possible pain

Not tired 0 1 2 3 4 5 6 7 8 9 10 Worst possible tiredness

Not nauseated 0 1 2 3 4 5 6 7 8 9 10 Worst possible nausea

Not depressed 0 1 2 3 4 5 6 7 8 9 10 Worst possible depression

Not anxious 0 1 2 3 4 5 6 7 8 9 10 Worst possible anxiety

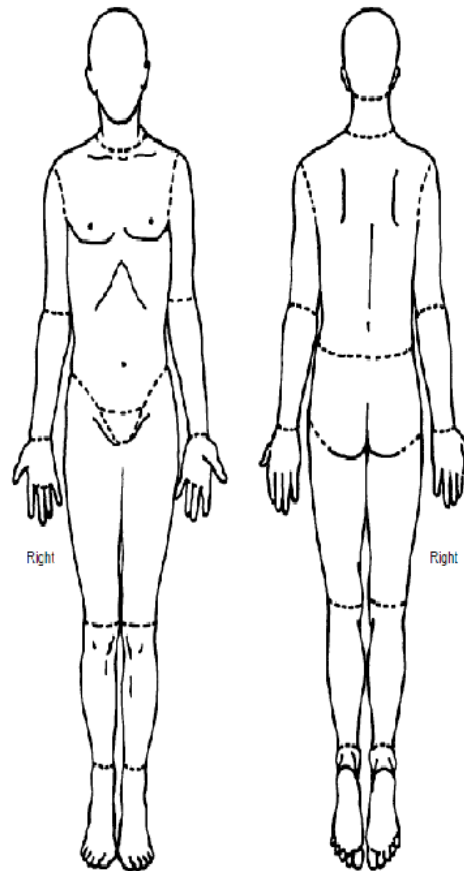
Not drowsy 0 1 2 3 4 5 6 7 8 9 10 Worst possible drowsiness

Best appetite 0 1 2 3 4 5 6 7 8 9 10 Worst possible appetite

Best feeling of wellbeing 0 1 2 3 4 5 6 7 8 9 10 Worst possible feeling of wellbeing

No shortness of breath 0 1 2 3 4 5 6 7 8 9 10 Worst possible shortness of breath

Other problem 0 1 2 3 4 5 6 7 8 9 10



Patient's Name _____

Complete by (check one)

Date _____ Time _____

Patient

Caregiver

Caregiver assisted

Appendix O

Midwest Hospice and Palliative Care: Intake Form

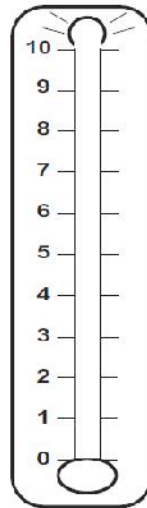
Distress Screening and PHQ-4 Form (XXX, 2018)

Distress Screening

Palliative Care Program

Instructions: First please circle the number (0-10) that best describes how much distress you have been experiencing in the past week including today.

Extreme distress



No distress

Please circle the ONE response that is most true for you:

1. **Are you at peace?** Not at all A little bit A moderate amount Quite a bit Completely
2. **How would you rate your overall quality of life?** Very poor Poor Fair Good Excellent
3. **Is there anything important to you that you would like your care team to know that you have not already shared? (example: faith, quality of life, etc...)** _____
4. **I have completed an Advance Directive for Healthcare** (circle one) Yes No
5. **I am requesting to speak with a social worker today** (circle one) Yes No
6. **Have you had any hospitalizations or ER visits since your last visit?** (circle one) Yes No ER or Hospital? _____

PHQ-4				
Over the last 2 weeks, how often have you been bothered by the following problems?				
	Not at all	Several days	More than half the days	Nearly every day
<i>(use a "circle" to indicate your answer)</i>				
1. Feeling nervous, anxious or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Little interest or pleasure in doing things	0	1	2	3
4. Feeling down, depressed, or hopeless	0	1	2	3

Appendix P

Midwest Organization Medication Contract



Physician
UCP
Pharm
HN



Consent
CONTROLLED SUBSTANCE THERAPY
 Page 1 of 2

My primary provider (physician/clinic) for controlled substances is _____

WHAT IS THIS AGREEMENT ABOUT?

- Information about controlled substance medicine.
- Following a safe treatment plan.
- Making sure state and federal laws are followed regarding controlled substances.
- Rules to follow when receiving controlled substances.

WHAT DO I NEED TO KNOW WHEN I TAKE CONTROLLED SUBSTANCE MEDICATION FOR A LONG TIME?

- I could become dependent on the medication. If I stop the medicine suddenly, I could have uncomfortable or dangerous withdrawal symptoms.
- I may develop serious constipation. I could have trouble urinating.
- I may have drowsiness, nausea, itching, and trouble sleeping – not enough or too much.
- It could affect my sexual function.
- It can slow my breathing.
- It may be dangerous if I take more medicine than my primary provider ordered or if mixed with alcohol. This could result in damage to my organs or even death.
- If I become pregnant, it can cause serious risks to my unborn baby.



RULES FOR CONTROLLED SUBSTANCE THERAPY

1. I can get refills for my controlled substance medicine only from my primary provider.
2. I will not be able to get a refill or prescription for controlled substance medication from any other provider, urgent care, or emergency room
3. I will request a refill prescription for my controlled substance medicine during business hours Monday through Friday. I will **NOT** be able to get a refill on the weekends and after hours.
4. My primary provider may get information about me from any pharmacist or my referring doctor about my use of medicines. I will tell my primary provider about any other medicines or substances I am taking. I will not take any prescription medicines that are not prescribed for me.
5. I will tell my primary provider (or another one who has been assigned) about any side effects with controlled substance and pain-related medicines. If I have a serious side effect after hours or on the weekend, I may contact my primary provider's office on-call answering service. I may also seek treatment at an urgent care center or the emergency room.
6. I will take my controlled substance medication exactly as ordered by my primary provider. I will not change the dose or time schedule unless my primary provider says to do so.



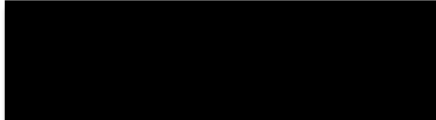
Confidentiality of this medical record is maintained in accordance with applicable laws and regulations. For more information, contact your provider.

White - Chart
Yellow - Patient
CONTINUE TO PAGE 2 →

DO NOT MARK BELOW THIS LINE BARCODE ZONE DO NOT MARK BELOW THIS LINE



* X 2 8 9 8 1 *



Patient Name
DOB
MRN
Physician
FIN

**CONTROLLED SUBSTANCE THERAPY
(CONTINUED)**
Page 2 of 2

RULES FOR CONTROLLED SUBSTANCE THERAPY (CONTINUED)

7. I will not use any illegal controlled substance.
8. I will tell my primary provider if I choose to participate in the Michigan Medical Marijuana Program. I understand my primary provider may choose to no longer prescribe controlled substances for me. My primary provider may need to safely wean me from the controlled substance.
9. I will be responsible for my medicine. I will not sell, trade, or share any controlled substance medicine. I understand my primary provider will not replace any lost, forgotten or stolen medication.
10. I will keep my follow-up appointments. If I do not, I understand my primary provider may not provide any more prescriptions for controlled substances and may also discharge me from the practice.
11. My primary provider will evaluate me on a regular basis to see if this treatment benefits me.
12. My primary provider may request a drug screen to check for other medicines and substances. I agree to a pill count if I am asked.
13. If female: I must not currently be pregnant. I must agree to inform my primary provider if I become pregnant, if I am attempting to become pregnant or if I am engaging in unprotected sex (and am of child-bearing age).

AGREEMENT

- I have read this form or had it read to me in words I can understand.
- I understand and agree to the rules described above.
- If I do not follow the rules I know I may not receive any more prescriptions for controlled substances. I may also be dismissed from the practice.
- I also understand the side effects of controlled substances. If I still have questions, I will ask my primary provider for written information on the side effects of the controlled substances that the provider is prescribing for me.

Below are signatures for patient or parent/guardian (if patient is under 18 years of age) and witness.

Time _____ Date _____ Patient signature _____

Time _____ Date _____ Parent/Guardian signature _____

TIME _____ **DATE** _____ Witness signature _____

I certify that I have interpreted, to the best of my ability, into and from the participant's stated primary language, _____, all oral presentations made by all of those present during the informed consent discussion.

TIME _____ **DATE** _____ Interpreter signature _____

Interpreter name (print) _____



White - Chart Yellow - Patient

Confidentiality of this medical record shall be maintained except when use or disclosure is required or permitted by law, regulation, or written authorization by the patient.

Appendix Q

Midwest Organization Opioid Start Talking Form



**Record
ACKNOWLEDGMENT OF OPIOID START TALKING**

(MUST BE INCLUDED IN THE PATIENT'S MEDICAL RECORD)
Michigan Department of Health and Human Services



Patient Name		Date of Birth
Name of Controlled Substance containing an Opioid		
Dosage	Quantity Prescribed (For a minor, if signature is not the parent or guardian, the prescriber must limit the opioid to a single, 72 hour supply)	
Number of refills		
<p>A controlled substance is a drug or other substance that the United States Drug Enforcement Administration has identified as having a potential for abuse. My provider shared the following:</p> <ul style="list-style-type: none"> a. The risks of substance use disorder and overdose associated with the controlled substance containing an opioid. b. Individuals with mental illness and substance use disorders may have an increased risk of addiction to a controlled substance. (Required only for minors.) c. Mixing opioids with benzodiazepines, alcohol, muscle relaxers, or any other drug that may depress the central nervous system can cause serious health risks, including death or disability. (Required only for minors.) d. For a female who is pregnant or is of reproductive age, the heightened risk of short and long-term effects of opioids, including but not limited to neonatal abstinence syndrome. e. Any other information necessary for patients to use the drug safely and effectively as found in the patient counseling information section of the labeling for the controlled substance. f. Safe disposal of opioids has shown to reduce injury and death in family members. Proper disposal of expired, unused or unwanted controlled substances may be done through community take-back programs, local pharmacies, or local law enforcement agencies. Information on where to return your prescription drugs can be found at http://www.michigan.gov/deqdrugdisposal. g. It is a felony to illegally deliver, distribute or share a controlled substance without a prescription properly issued by a licensed health care prescriber. 		
<p>I acknowledge the potential benefits and risks of an opioid medication as described by my provider along with the responsibility of properly managing my medication as stated above.</p>		
Signature of Prescriber (when prescribing to a minor)		Date
Signature of Patient, if a minor, patient's parent/guardian		Date
Signature of Patient's Representative or other authorized adult		Date
Printed Name of Parent/Guardian; Patient's Representative or other authorized adult		



Confidentiality of this medical record is maintained in accordance with applicable laws, regulations, and policies of the State of Michigan.

The Michigan Department of Health and Human Services (MDHHS) does not discriminate against any individual or group because of race, religion, age, national origin, color, height, weight, marital status, genetic information, sex, sexual orientation, gender identity or expression, political beliefs or disability.	AUTHORITY: PCA 246 of 2017, MCL 333.7303b and MCL 333.7303c COMPLETION: Required. PENALTY: Probation, limitation, denial, fine, suspension, revocation or permanent revocation.
--	---



MDH-5-5770 (4-13a) DO NOT MARK BELOW THIS LINE BARCODE ZONE DO NOT MARK BELOW THIS LINE



Appendix R

Telemedicine Palliative Care Smart Phrase for Documentation

**Patient seen for today's assessment/evaluation via telemedicine technology.
Palliative Care Oncology Clinic Note**

ASSESSMENT/PLAN:

@ASSESSNOHEADERBEGIN@
@DIAG@

1. Cancer Related Pain Secondary To ***

- Somatic and Neuropathic, Opiate tolerant / Naive

- Long acting pain control:

- Short acting pain control:

- Breakthrough pain control:

@TD@ Report from Michigan Automated Prescription System (MAPS) controlled medication registry has been reviewed.

Upon initiation of opioid therapy, the following information was discussed with the patient:

1. The risks of substance use disorder and overdose associated with the controlled substance containing an opioid.
2. For a female who is pregnant or is of reproductive age, the heightened risk of short and long term effects of opioids, including but not limited to neonatal abstinence syndrome.
3. Safe disposal of opioids has shown to reduce injury and death in family members. Proper disposal of expired, unused or unwanted controlled substances may be done through take-back programs, local pharmacies, or law enforcement agencies. Further information on where to return prescription drugs is found at <http://www.michigan.gov/deqdrugdisposal>
4. It is a felony to illegally deliver, distribute or share a controlled substance without a prescription properly issued by a licensed health care prescriber.

Opioid Risk Tool Score: ***

Reviewed with patient. Will prescribe Naloxone when *ORT* > 8 or *MME* > 50/day

*It was recommended today that the patient pick up a Naloxone Overdose Prevention Kit at the pharmacy as a safety precaution

2. Nausea related to ***

- ***

3. Opioid Induced Constipation

- ***

4. Dyspnea

- None at this time, will continue to monitor

- ***

5. Psychiatric

-

6. Fatigue**7. Code Status**

- ***

8. Advanced Directive

- ***

- Patient will also be followed by our Palliative Care Social Worker,

9. Goals of Care Discussion

- Patient's understanding of their current medical condition:

- Hopes:

- Fears:

@FOLLOWUPDISPOSITION@

@ASSESSMENTEND@

Total time spent on this visit: *** minutes (***) of face to face care with greater than 50% of the time spent in counseling and coordinating the patient's care.

SUBJECTIVE:

@SUBJNOHEADERBEGIN@

@NAME@ is a @AGE@ @SEX@ who was referred to the Palliative Care Clinic by Dr. @REFPROVLNAME@ for ***.

Oncologic History:

Interval History, @TD@:

CC: ***

Pain:

GI:

Appetite:

Psych:

@RULESMARTLINKRFSH(946023,DEPRESSIONANXIETYSCORES,BLANKETXRECORD)@

@RULESMARTLINKRFSH(946024,BLUEENVELOPEDOCUMENTATION,BLANKETXRECORD)@

Reviewed Edmonton Symptom Assessment Scale with patient. See scanned documentation.

Medication Contract was reviewed and signed by the patient. All questions were answered.

@SUBJECTIVEEND@

@PMH@

@SURGICALHX@

@FAMHX@

@SOCHX@

@MEDSTAKING@

@ALGENC@

@SHROSBYAGE@

OBJECTIVE:

@VITALSM@

@PHYEXAMBYAGE@

@PALLIATIVECAREVOICEERROR@

Appendix S

Midwest Hospice and Palliative Care Palliative Care Policy

Palliative Care Services

Applicability Limited to:	Palliative Care
Reference #:	
Version #:	1
Effective Date:	7/18
Department Area:	Cancer Services

1. Purpose

It is the goal that patients have available information that allows them to make informed decisions regarding their care, including the option of a palliative approach to care. Education and conversation will occur among patients and clinicians so as to facilitate an open, well-informed consideration of the palliative approach whenever appropriate. Patients will be offered the option of having a palliative care clinician assist, along with the primary clinician, with their complex physical, psycho/social, emotional and spiritual symptom needs.

2. Definitions

Palliative care refers to the comprehensive management of the physical, psychological, social, spiritual and existential needs of patients, in particular those with incurable, progressive illnesses. The goal is to improve quality of life for both the patient and the family. Palliative care is provided by a specially-trained team of doctors, physician assistants, nurse practitioners, nurses, social workers, and other specialists who work together with a patient's other doctors to provide an extra layer of support. It is appropriate at any age and at any stage in a serious illness, and it can be provided along with curative treatment. The availability of palliative care services is an essential component of cancer care.

The palliative care team will:

- Assist with establishing patient-centered goals of care
- Help the patient to achieve the best quality of life that they can for as long as possible
- Review the course of the patient illness and assist in decision making
- Identify unmet physical, social, psychological or spiritual needs
- Provide expert symptom management needs especially related to pain, fatigue or other symptoms of cancer or its treatment
- Engage as a collaborative member of the health care team

3. Policy

Palliative care is intended to make the patient comfortable by treating their symptoms related to a serious and/or terminal illness. In the routine course of providing health care, practitioners are expected to provide the basic elements of palliative care (e.g., pain and symptom assessment and management). In some cases, complexity may determine the need for palliative interdisciplinary services to be coordinated to provide the best possible care. When the need for palliative care is identified, a licensed professional healthcare provider (LPHP) can implement services by one of the following ways:

PROCEDURE:

- 1.
- 2.
- 3.
- 4.

1. Referral criteria

- Active Cancer Diagnosis
 - Undergoing treatment, stopping treatment due to futility, or not desiring treatment
- AND > 1 of the following:**
- Complex symptoms (eg. Pain, nausea, vomiting, constipation) refractory to interventions
 - High levels of spiritual, emotional, and social stress
 - Limited disease-directed treatment options, or poor performance status
 - Hesitance to engage in advanced care planning
 - Help sorting out difficult decisions
 - Patient/family requesting a Palliative Care consult
 - Pre-operative patients with a high risk for complications

2. Revisions

reserves the right to alter, amend, modify or eliminate this policy at any time without prior written notice.

3. References

Cancer Program Standards: Ensuring Patient-Centered Care. 2016 edition
Center to Advance Palliative Care

4. Policy Development and Approval**5. Keywords**

Palliative, cancer, palliative care, commission on cancer, MSW, chaplain, advanced directive

Appendix T

Telemedicine Palliative Care Patient Satisfaction Survey

Once they click “Start Survey”, the following questions are asked:

YOUR PROVIDER

Q1: Our records show that you visited the provider {PRECODE3}. Is that right?

- Yes
- No -> If No, they will get a pop-up that says:
You have completed the survey. Do you want to submit your responses?
 - Cancel
 - Submit

Q2: The questions in this survey will refer to the provider named in Question 1 as “this provider”. Please think of that person as you answer the survey.

Is this the provider you usually see if you need a check-up, want advice about a health problem, or get sick or hurt?

- Yes
- No

APPOINTMENT AND OFFICE CONTACT

Q3: Questions that ask about “this visit” are referring to your visit with this provider on {PRECODE1}.

Was this visit with this provider an appointment for an illness, injury or condition that **needed care right away**?

- Yes
- No -> If No, go to Q5.

Q4: When you made this appointment for **care you needed right away**, did you get this appointment as soon as you thought you needed?

- Yes
- No

Q5: Was this visit with this provider an appointment for a **check-up or routine care**?

- Yes
- No -> If No, go to Q7.

Q6: When you made this appointment for a **check-up or routine care**, did you get this appointment as soon as you thought you needed?

- Yes
- No

Q7: In the last 3 months, did you contact this provider’s office with a medical question during regular office hours?

- Yes
- No -> If No, go to Q9.

Q8: In the last 3 months, when you contacted this provider’s office during regular office hours, how often did you get an answer to your medical question that same day?

- Never
- Sometimes
- Usually
- Always

Q9: In the last 3 months, did you phone this provider’s office with a medical question **after** regular office hours?

- Yes
- No -> If No, go to Q11.

Q10: In the last 3 months, when you phoned this provider’s office after regular office hours, how often did you get an answer to your medical question as soon as you needed?

- Never
- Sometimes
- Usually
- Always

Q11: In the last 3 months, did this provider order a blood test, x-ray, or other test for you?

- Yes
- No -> If No, go to Q13.

Q12: In the last 3 months, when this provider ordered a blood test, x-ray, or other test for you, how often did someone from this provider’s office follow-up to give you the results?

- Never
- Sometimes
- Usually
- Always

YOUR CARE FROM THIS PROVIDER ON {PRECODE2}

Q13: Wait time includes time spent in the waiting room and exam room. During this visit, did you see this provider **within 15 minutes** of your appointment time?

- Yes
- No

Q14: During this visit, did this provider explain things in a way that was easy to understand?

- Yes, definitely
- Yes, somewhat
- No

Q15: During this visit, did this provider listen carefully to you?

- Yes, definitely
- Yes, somewhat
- No

Q16: During this visit, did you talk with this provider about any health questions or concerns?

- Yes
- No -> If No, go to Q18.

Q17: During this visit, did this provider give you easy to understand information about these health questions or concerns?

- Yes, definitely
- Yes, somewhat
- No

Q18: During this visit, did this provider seem to know the important information about your medical history?

- Yes, definitely
- Yes, somewhat
- No

Q19: During this visit, did this provider have your medical records?

- Yes
- No

Q20: During this visit, did this provider show respect for what you had to say?

- Yes, definitely
- Yes, somewhat
- No

Q21: During this visit, did this provider spend enough time with you?

- Yes, definitely
- Yes, somewhat
- No

Q22: Using any number from 0 to 10, where 0 is the worst provider possible and 10 is the best provider possible, what number would you use to rate this provider?

- 0 Worst provider possible
- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10 Best provider possible

Q23: Would you recommend this provider's office to your family and friends?

- Yes, definitely
- Yes, somewhat
- No

SUPPORT STAFF AT THIS PROVIDER'S OFFICE

Q24: During this visit, were support staff at this provider's office as helpful as you thought they should be?

- Yes, definitely
- Yes, somewhat
- No

Q25: During this visit, did support staff at this provider's office treat you with courtesy and respect?

- Yes, definitely
- Yes, somewhat
- No

ALL YOUR CARE IN THE LAST 3 MONTHS

These questions ask about **all your** health care. Include all the providers you saw for health care in the last 3 months. Do **not** include the times you saw a dentist.

Q26: In the last 3 months, did you **take any** prescription medicine?

- Yes
- No -> If No, go to Q28.

Q27: In the last 3 months, how often did you and anyone on your health care team talk about all the prescription medicines you were taking?

- Never

- Sometimes
- Usually
- Always

ABOUT YOU

Q28: In general, how would you rate your overall health?

- Excellent
- Very Good
- Good
- Fair
- Poor

Q29: In general, how would you rate your overall **mental or emotional** health?

- Excellent
- Very Good
- Good
- Fair
- Poor

Q30: What is the highest grade or level of school that you have completed?

- 8th grade or less
- Some high school, but did not graduate
- High school graduate or GED
- Some college or 2-year degree
- 4-year college graduate
- More than 4-year college degree

Q31: Are you of Hispanic, Latino, or Spanish origin?

- Yes, Hispanic, Latino or Spanish
- No, not Hispanic, Latino or Spanish

Q32: What is your race? Mark one or more.

- White
- Black or African American
- Asian
- Native Hawaiian or Other Pacific Islander
- American Indian or Alaska Native
- Other {TEXT BOX}

Q33: Did someone help you complete this survey?

- Yes
- No -> If No, go to ADDITIONAL QUESTIONS ABOUT THIS VISIT.

Q34: How did that person help you? Mark one or more.

- Read the questions to me
- Wrote down the questions for me
- Answered the questions for me
- Translated the questions into my language
- Helped in some other way {TEXT BOX}

ADDITIONAL QUESTIONS ABOUT THIS VISIT

Now that we have asked you to tell us about *what happened* during your recent experience with the provider and his/her office, please rate how satisfied you were with the services you received during this visit. If a question does not apply to you, please skip to the next question.

Q35: Degree to which you were informed about delays

- Very Poor
- Poor
- Fair
- Good
- Very Good

Q36: Degree to which the availability of telemedicine appointments fit your schedule

- Very Poor
- Poor
- Fair
- Good
- Very Good

Q37: Ease of getting telemedicine services at a time you needed/wanted

- Very Poor
- Poor
- Fair
- Good
- Very Good

Q38: Estimate of costs given prior to your treatment, if required

- Very Poor
- Poor

- Fair
 - Good
 - Very Good
- Q40: Help provided in exploring your payment options
- Very Poor
 - Poor
 - Fair
 - Good
 - Very Good

BACKGROUND QUESTIONS

- Q41: Preference over traditional office visit
- Greatly Preferred
 - Somewhat Preferred
 - Not Preferred
- Q42: Has your experience with the telemedicine services made you more likely to use these services in the future?
- Yes
 - No
- Q43: Where did you first learn about the telemedicine services?
- Primary Care Provider
 - Specialty Provider
 - (Organization's website)
 - Community (advertising, friends, etc.)
 - Other {TEXT BOX}

WRITE-IN RESPONSES

- Q44: Describe your experience with provider {PRECODE3}
- Q45: Describe experiences you wish were different during your visit.
- Q46: Explain one experience you appreciated during your visit.
- Q47: Is there anything else you would like to share about your experience?

Once complete, the patient gets the following message:

Your survey has been submitted successfully. Thank you for taking the survey.

Appendix U


Metric Table for Data Collection

Evaluation	Metric Definition	How Collected	Where Collected	Format
Primary Diagnosis	The primary diagnosis of the patient receiving telemedicine services	Type of clinic: i.e. oncology, cardiac.	Logged into PCQN database by patient service representative (PSR)	Percentage
Patient Satisfaction	Satisfaction of the patient who is receiving palliative care via telemedicine.	Survey sent after telemedicine visit via email.	Telemedicine Database	Depending on specific question from the survey: Ordinal Scale, Nominal Scale, Yes or No: percentage
Advance Directives	A written statement of a person's wishes regarding medical treatment on file in the EHR.	Intake Form	Logged into PCQN database by PSR	Yes or No: Percentage
Symptom Intensity: Scale 0-10 <ul style="list-style-type: none"> • Pain • Tired • Nausea • Depression • Anxiety • Drowsiness • Appetite • Wellbeing • Shortness of breath 	Measurement of patient's symptoms they are currently experiencing. For example: 0= no pain at all; 10=worst possible pain.	Intake Form	Logged into PCQN database by PSR	Mean, Median, Standard Deviation
Emergency Department/ Hospitalizations since previous visit	Emergency Department visits or hospitalizations of patients since receiving palliative care services.	Intake Form	Logged into PCQN database by PSR	Numerical: Mean, Median, Standard Deviation

Appendix V

Palliative Care Quality Network Database: Reports

Welcome, Aubrey!
March 4, 2019

PCQN  PALLIATIVE CARE QUALITY NETWORK
Improving the quality of caring

HOME ADMIN DATA **REPORTS** LOG OFF

Contact Support

The report data were last updated on Mar 4, 2019 at 05:05.

Community Based Summary Report
Contains statistics on patient and visit volume, patient demographics, process and outcomes, and symptoms. Users can select a custom range of visit dates below.

Year / Custom Range: Month: Patient Type(s):

- All
- ✓ Clinic
- Home
- SNF/Nursing Home

Symptoms & PPS Report
Shows frequency distributions for the community-based symptom assessments and PPS. Also shows the rate of improvement between subsequent visits.

Year / Custom Range: Month: Patient Type(s):

Trend Report
Shows volume or percentage distribution charts over time for various user-selected measures.

Patient Type(s):

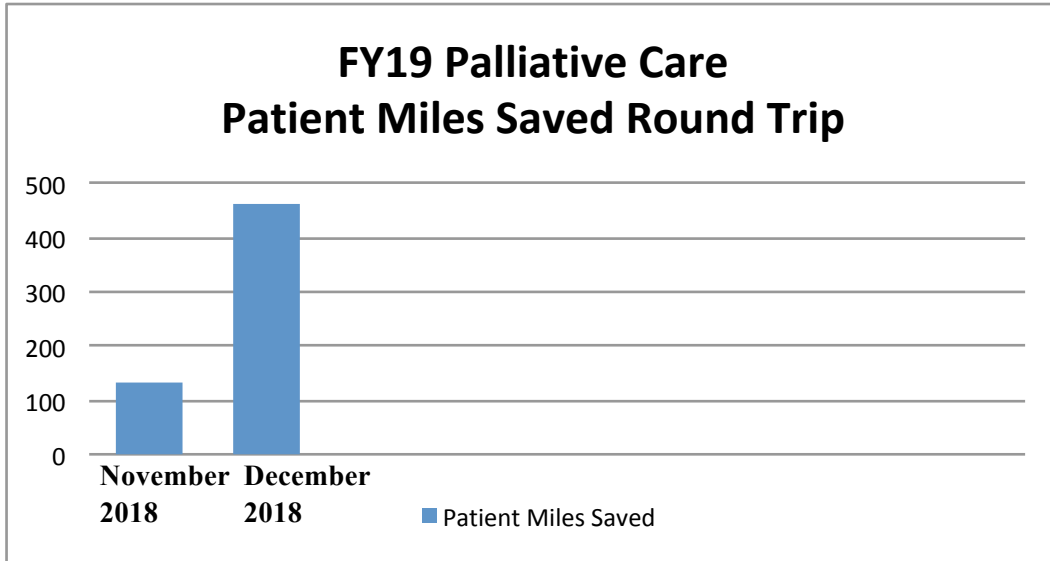
Member Comparison Report
Shows members in a side-by-side ranking of various measures. Custom filters are available to subset the comparison groups.

Patient Type(s):

Cross-Tab Tables
Creates tables showing the relationship between two categorical variables (e.g., symptom score & primary diagnosis). Also creates frequency distributions for a single variable.

Appendix W

Telemedicine Palliative Care Patient Miles Saved



Appendix X

Revenue of Telemedicine Palliative Care Services

Revenue Captured Over Two Month Period

CPT NAME	Sum of QTY	Sum of CHARGES	Sum of TOTAL PMT	Sum of TOTAL ADJ	Sum of Balance
99204 - PR OFFICE OUTPATIENT NEW 45 MINUTES	1	\$269.00	-\$92.12	\$176.88	\$0.00
99214 - PR OFFICE OUTPATIENT VISIT 25 MINUTES	5	\$815.00	\$265.83	\$515.95	\$33.22
99215 - PR OFFICE OUTPATIENT VISIT 40 MINUTES	1	\$228.00	\$132.99	-\$95.01	\$0.00
Grand Total	7	\$1,312.00	\$490.94	\$787.84	\$33.22

Payment ratio based on closed claims: 37.4%
 Adjustment ratio based on closed claims: 60.0%

Code	Code Description	Qty	PAYER	CHARGES	PAYMENTS	ADJUSTMENTS
40355401	HC TELEHEALTH FACILITY FEE [40355401]	1	MOLINA MEDICAID	\$76.03	\$13.11	(\$62.92)
40355401	HC TELEHEALTH FACILITY FEE [40355401]	1	PRIORITY HEALTH MEDICAID	\$76.03	\$24.83	(\$51.20)
40355401	HC TELEHEALTH FACILITY FEE [40355401]	1	MOLINA MEDICAID	\$76.03	\$13.11	(\$62.92)
40355401	HC TELEHEALTH FACILITY FEE [40355401]	1	HUMANA MEDICARE ADVANTAGE	\$76.03	\$12.62	(\$63.41)
40355401	HC TELEHEALTH FACILITY FEE [40355401]	1	BCBS- PPO	\$76.03	\$0.00	(\$76.03)
40355401	HC TELEHEALTH FACILITY FEE [40355401]	1	BCBS- MEDICARE PPO plus BLUE	\$76.03	\$25.24	(\$50.27)
40355401	HC TELEHEALTH FACILITY FEE [40355401]	1	PRIORITY HEALTH MEDICAID	\$76.03	\$24.83	(\$51.20)
				\$532.21	\$113.74	(\$417.95)

Appendix Y

Revenue of Telemedicine Palliative Care Services per Payor

Blue Cross Blue Shield PPO

CPT NAME	Sum of QTY	Sum of CHARGES	Sum of TOTAL PMT	Sum of TOTAL ADJ	Sum of Balance
99215 - PR OFFICE OUTPATIENT VISIT 40 MINUTES	1	\$228.00	\$132.99	\$95.01	\$0.00
Grand Total	1	\$228.00	\$132.99	\$95.01	\$0.00

Payment ratio based on closed claims: 58.3%
 Adjustment ratio based on closed claims: 41.7%

Medicare Plus Blue PPO

CPT NAME	Sum of QTY	Sum of CHARGES	Sum of TOTAL PMT	Sum of TOTAL ADJ	Sum of Balance
99214 - PR OFFICE OUTPATIENT VISIT 25 MINUTES	1	\$163.00	\$65.12	\$97.88	\$0.00
Grand Total	1	\$163.00	\$65.12	\$97.88	\$0.00

Payment ratio based on closed claims: 40.0%
 Adjustment ratio based on closed claims: 60.0%

Humana Medicare Advantage

CPT NAME	Sum of QTY	Sum of CHARGES	Sum of TOTAL PMT	Sum of TOTAL ADJ	Sum of Balance
99214 - PR OFFICE OUTPATIENT VISIT 25 MINUTES	1	\$163.00	-\$32.57	-\$97.21	\$33.22
Grand Total	1	\$163.00	-\$32.57	-\$97.21	\$33.22

Payment ratio based on closed claims: 20.0%
 Adjustment ratio based on closed claims: 59.6%

Priority Health Medicaid

CPT NAME	Sum of QTY	Sum of CHARGES	Sum of TOTAL PMT	Sum of TOTAL ADJ	Sum of Balance
99214 - PR OFFICE OUTPATIENT VISIT 25 MINUTES	2	\$326.00	\$87.96	\$238.04	\$0.00
Grand Total	2	\$326.00	\$87.96	\$238.04	\$0.00

Payment ratio based on closed claims: 27.0%
 Adjustment ratio based on closed claims: 73.0%

Molina Medicaid

CPT NAME	Sum of QTY	Sum of CHARGES	Sum of TOTAL PMT	Sum of TOTAL ADJ	Sum of Balance
99204 - PR OFFICE OUTPATIENT NEW 45 MINUTES	1	\$269.00	-\$92.12	\$176.88	\$0.00
99214 - PR OFFICE OUTPATIENT VISIT 25 MINUTES	1	\$163.00	-\$80.18	-\$82.82	\$0.00
Grand Total	2	\$432.00	\$172.30	\$259.70	\$0.00

Payment ratio based on closed claims: 39.9%
 Adjustment ratio based on closed claims: 60.1%

Appendix Z

Cost Analysis: Two Month Period

Cost Analysis of Telemedicine Palliative Care**Two Month Period****Revenue****New Patient Code**

99204 (X 1)	92.12
-------------	-------

Establish Patient Code

99214 (X 5)	299.05
-------------	--------

99215 (X 1)	132.99
-------------	--------

Facility Charge for Telemedicine

40355401 (X 7)	113.74
----------------	--------

TOTAL INCOME	637.90
---------------------	---------------

Expenses**Healthcare Professional Time**

Overhead Physician (\$98.00/hr X 8 hours per month X 2 months)	1,568.00
--	----------

Nurse Practitioner (\$51.00/hr X 4 hours per month X 2 months)	408.00
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Physician Assistant (\$50.00/hr X 4 hours per month X 2 months)	400.00
--	--------

Medical Assistant (\$12.00/hr X 8 hours per month X 2 months)	192.00
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Front Desk Medical Receptionist (\$13.56/hr X 8 hours per month X 2 months)	216.96
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Telemedicine Specialist (\$30.00/hr X 16 hours per month X 2 months)	960.00
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Palliative Care Nurse Manager (\$40.00/hr X 3 hours per month X 2 months)	240.00
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Palliative Care Registered Nurse (\$27.00 X 2 hours per month X 2 months)	108.00
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Patient Service Representative (\$14.00 X 3 hours per month X 2 months)	84.00
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Equipment (Start Up Costs)

Plantronics blackwire C725	164.99
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Think Labs One Digital Stethoscope with Warranty (\$741.70 / 5)	148.34
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Cisco Telepresence CE DX 80 (\$2,746.00 / 5)	549.20
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Cisco Telepresence CE DX80 (\$2,746.00 / 6)	457.67
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Lenovo Laptop	673.67
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Ongoing Operational Costs

Rural Setting Office Space (\$31.60 per month X 2)	63.20
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Downtown Setting Office Space (\$200.00 per month X 2)	400.00
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TOTAL EXPENSES	6,634.03
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Net Operating Plan	<u><u>-5,996.13</u></u>
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Note: Information regarding average hourly salary of healthcare professionals retrieved within the organization, as well as from Glassdoor, PayScale, and Salary.com

Appendix AA

Projected Cost Analysis for Six Month Period

Cost Analysis of Telemedicine Palliative Care**Two month Period → Six Month Period****Revenue****New Patient Code**

99204 (X 1) (\$92.12 X 3)	276.36
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Establish Patient Code

99214 (X 5) (\$299.05 X 3)	897.15
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99215 (X 1) (\$132.99 X 3)	398.97
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Facility Charge for Telemedicine

40355401 (X 7) (\$113.74 X 3)	341.22
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Cost mitigation

Emergency Department Visit (prevention of 1 ED visit)	1,233.00
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Intensive Care Unit Stay: Average LOS 10 days (\$6,536.00 X 10)	65,360.00
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TOTAL INCOME	68,506.70
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Expenses**Healthcare Professional Time**

Overhead Physician (\$98.00/hr X 8 hours per month X 6 months)	4,704.00
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Nurse Practitioner (\$51.00/hr X 4 hrs per month X 6 months)	1,224.00
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Physician Assistant (\$50.00/hr X 4 hours per month X 6 months)	1,200.00
--	----------

Medical Assistant (\$12.00/hr X 8 hours per month X 6 months)	576.00
--	--------

Front Desk Staff (\$13.56/hr X 8 hours per month X 6 months)	650.88
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Telemedicine Specialist (\$30.00/hr X 16 hours per month X 6 months)	2,880.00
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Palliative Care Nurse Manager (\$40.00/hr X 3 hours per month X 6 months)	720.00
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Palliative Care Registered Nurse (\$27.00 X 2 hours per month X 6 months)	324.00
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Patient Service Representative (\$14.00 X 3 hours per month X 6 months)	252.00
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Equipment (Start Up Costs)

Plantronics blackwire C725	164.99
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Think Labs One Digital Stethoscope with Warranty (\$741.70 / 5)	148.34
---	--------

Cisco Telepresence CE DX80 (\$2,746.00 / 5)	549.20
---	--------

Cisco Telepresence CE DX80 (\$2,746.00 / 6)	457.67
---	--------

Lenovo Laptop	673.67
---------------	--------

Ongoing Operational Costs

Rural Setting Office Space (\$31.60 per month X 6)	189.60
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Downtown Setting Office Space (\$200.00 per month X 6)	1,200.00
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TOTAL EXPENSES	15,914.35
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Net Operating Plan	52,592.35
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Note: Information regarding average hourly salary of healthcare professionals retrieved within the organization, as well as from Glassdoor, PayScale, and Salary.com