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Evidence Based Toolkit to Improve Oncology Referrals to Palliative Care

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Evidence Based Toolkit to Improve Oncology Referrals to Palliative Care

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Abstract

As cancer related mortality decreases, the number of patients living with cancer symptoms and the side effects of cancer treatment will continue to grow. In 2016, over 1.5 million Americans were newly diagnosed with cancer (American Cancer Society, 2016). Several major medical organizations including the American Society of Clinical Oncology (ASCO), the National Comprehensive Cancer Network (NCCN), and the World Health Organization (WHO) endorse the integration of palliative care into cancer care (Ramchandran, 2015). Although many cancer centers report offering palliative care, this remains largely limited to inpatient services.

The stakeholders of the hospice and palliative care division of a large Midwest healthcare system have identified that there are many cancer patients who may benefit from palliative care, but fail to receive these services. This is substantiated by a low number of oncology palliative care referrals, a large portion of inpatient palliative care referrals occurring when patients are critically ill, low median length of hospice enrollment among oncology patients, and a low rate of oncology patients completing advance care planning prior to a hospice referral. The development of an evidence-based toolkit to improve oncology referrals to palliative care could improve timely and appropriate oncology referrals to palliative care. The Theory of Symptom Management and the PARIHS framework were used to develop a toolkit to increase timely and appropriate referrals to palliative care in this Midwest healthcare system. The toolkit includes a cost savings analysis, referral recommendations based on analysis of current oncology quality measure performance, marketing and educational materials for referring providers, an implementation protocol, and a sustainability plan.

Keywords: “Oncology”, “palliative care”, “referrals”, “integration”, “collaboration”, “end of life”

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Evidence Based Toolkit to Improve Oncology Referrals to Palliative Care

Executive Summary**Background**

According to recent studies, although the majority of patients reported a preference to die at home, 60% of deaths occurred in the hospital and the median hospice length of stay was a mere 17.4 days (Gomes et al., 2013; National Hospice and Palliative Care Organization, 2015). Furthermore, nearly a quarter of all Medicare spending incurred in beneficiaries' last year of life (Riley & Lubitz, 2010). Palliative care is one proposed solution to improving end of life care (IOM, 2015).

Purpose

The physical and psychosocial symptom burden of cancer is high and can have detrimental effects on patient and family quality of life (Greer et al., 2013). Consequently, several major medical organizations including the American Society of Clinical Oncology (ASCO), National Comprehensive Cancer Network (NCCN), and the World Health Organization (WHO) endorse the integration of palliative care into standard cancer care (Ramchandran, 2015). Unfortunately, although many organizations offer both oncology and palliative care services, many are not fully integrated. The purpose of this DNP project is to propose a solution to the current gap in care delivery.

Significance

Currently, despite widespread recommendations for the early integration of palliative care into oncology care, patients are often referred to palliative care late in their disease course or even worse, not at all (Rauenzhan et al., 2017; Reville et al., 2013; Schenker et al., 2014). This represents a significant failure to provide evidence-based care to oncology patients as palliative

care improves advance care planning (Kavalieratos et al., 2016), increases use of hospice (Kerr et al., 2016; Lustbader et al., 2017), and lowers healthcare utilization (Lustbader et al., 2017).

Current Practice

The hospice and palliative care division of a large Midwest healthcare system has identified a problem in patient access to palliative care services, specifically among oncology patients. This is substantiated in data from the hospice and palliative care clinic collected from December 2015 to September 2017, which demonstrated a low number of oncology palliative care referrals (34.7% of total referrals), a large portion of inpatient palliative care referrals occurring when patients are critically ill (18.9% in critical care and 12.9% in telemetry/step down), low median length of hospice enrollment (mean 63 days, median 10 days), and only 31.2% of oncology patients completing advance care planning prior to a palliative care referral.

New Evidence

Evidence for the creation of the toolkit was systematically reviewed. First, barriers to oncology referrals to palliative care were identified. Second, characteristics of successful strategies to improve timely referrals to palliative care were evaluated. These analyses are depicted in Appendix A. Finally; grey literature was reviewed for financial considerations. This review identified a key area of opportunity in upcoming reimbursement changes (Appendix B).

Financial Considerations

Historically, oncology has been exempt from performance measures focused on hospital readmission rates (Boccuti & Casillas, 2017). This will change with the implementation of The Medicare Access and CHIP Reauthorization Act of 2015 (MACRA), which will introduce comprehensive Medicare reimbursement changes for healthcare services (CMS, 2017).

These reimbursement changes usher in an era of new oncology performance indicators that are quality, not volume focused. High priority measures for oncology include:

- Proportion of patients who have completed an advance directive
- Proportion of patients admitted to hospice for less than three days
- Proportion of patients admitted to intensive care in the last 30 days of life
- Proportion of patients who died from cancer without being admitted to hospice
- Proportion of patients who received chemotherapy within 14 days of death
- Proportion of patients who died from cancer with more than one emergency department visit in the last 30 days of life (CMS, 2017).

Intervention

Considering this identified opportunity, given the current reimbursement climate, an evidence-based toolkit was developed to improve oncology referrals to palliative care. The toolkit includes:

- Cost savings analysis based on current high priority oncology quality measure performance
- Referral guidelines
- Marketing and educational tools for referring providers
- Protocol for implementation of toolkit
- Sustainability plan

Cost Analysis

Cost considerations for completion of the project include staff member time, DNP student time (which is without cost to the organization) and costs of resources provided. The

proposed project will result in a net gain of labor and resources for the organization. Appendix K provides a detailed description of the project budget.

Recommendation

After the organizational assessment and literature review were complete, a recommendation was made to create an evidence-based toolkit to improve timely and appropriate referrals from oncology to palliative care. The toolkit was presented and accepted by stakeholders within the hospice and palliative care division.

Results

Quality Measure Performance and Cost Savings Analysis. Current oncology quality measure performance was assessed using a retrospective chart review. The results were used to calculate current performance and resultant points under MACRA reimbursement criteria. A potential Merit-based Incentive Payment System (MIPS) report card was produced. The lowest performing quality measure was advance directive completion with 61.88% (N=160) of patients assessed as not having an advance directive documented in their medical chart (Appendix N).

If current performance continues, the highest possible score if all points are awarded for the remaining categories of improvement activities and advancing care information is 84.94%, which will result in a 4% positive payment adjustment in 2019. However, if not all points are awarded for the remaining two categories, the organization could receive no positive payment adjustment or a negative payment adjustment if the total points awarded is less than 25 or no data is reported. This analysis is depicted in Appendix O.

Referral Recommendations. The analysis did not determine the patient diagnosis, extent of metastasis, or functional status to be independently associated with quality measure performance. However, patients in the deceased group were more likely to have advanced

disease and a lower functional status and for that reason, these populations in particular should be considered for referral. Furthermore, this analysis supports that there were patients who performed well in terms of functional status and metastasis and still performed poorly in quality measure performance and vice versa. This supports current recommendations as set forth by the National Academy of Medicine (IOM, 2015) that palliative care is offered to all patients with serious illnesses. Final recommendations for referring providers are a combination of current National Academy of Medicine recommendations and the results of the data analysis and are summarized in Appendix Q.

Substantiated Value of Palliative Care. One result of this analysis was the demonstrated benefit of palliative care on quality measure performance. For all analyses, a p value of $<.05$ was considered significant. Among deceased patients ($n=45$), palliative care was significantly associated with advance directive completion (60% vs 40%, $p=.0189$) and lower intensive care unit (ICU) utilization (100% vs 0%, $p=.0435$). There were only 5 patients who were admitted to the ICU in the 30 days preceding death and this small sample size does limit this significance. Nonetheless, the results are promising and support that palliative care can improve quality measure performance and ultimately reimbursement. This analysis is located in Appendix R.

Marketing and Educational Tools. Index cards were produced to succinctly communicate recommendations to referring providers. The de-identified version of the marketing material is located in Appendix U. Palliative care clinicians also received printouts of the data analysis with detailed explanations of results.

Implementation Protocol. A protocol for implementation of the toolkit was also presented and accepted by hospice and palliative care stakeholders. The implementation

protocol utilized the PARIHS framework for guidance. The theoretical outline of the implementation plan is located in Appendix S. Appendix T contains stepwise instructions for implementation. The stepwise instructions refer to feedback forms for both palliative care clinicians and referring providers to evaluate the toolkit once it is implemented. These forms are located in Appendix V and Appendix W respectively.

Sustainability. The hospice and palliative care division has a plan for program growth, which includes hiring new physicians, nurse practitioners, and nursing staff as well as innovative ways to deliver care such as through telehealth and expansion of home based care services. In order for service lines to continue to develop, the division will need to continue to increase in patient referrals. Both referral data and quality measure performance should be monitored after implementation of the toolkit to measure success of the toolkit. Timelines for evaluation are included in the implementation protocol. Evaluation tools are located in Appendix X.

Conclusion

As cancer mortality decreases the number of individuals living with cancer will continue to grow. Oncology patients stand to greatly benefit from the early integration of palliative care. Unfortunately, the stakeholders of a hospice and palliative care division of a large Midwest healthcare system have observed that oncology patients are being referred late in their disease course to palliative care services, or even worse not at all. A quality improvement project completed by a DNP student included the development of an evidence-based toolkit to improve timely and appropriate referrals from oncology to palliative care.

Introduction

Advances in healthcare have led to longer life expectancies for individuals with chronic and life limiting illnesses. Consequently, the field of palliative care is growing to meet the demands of this population (Kamal et al., 2016). Palliative care is the management of physical and psychosocial symptoms due to a serious or life limiting illness. The goal of palliative care is to improve patient and family quality of life (National Hospice and Palliative Care Organization, 2017). Over the past 15 years, the field of palliative care has grown exponentially. Over 1700 hospitals with more than 50 beds now offer a palliative care team and in more recent years palliative care has expanded into the community (Center to Advance Palliative Care [CAPC], n.d).

Although palliative care services are becoming more widespread, patient access to palliative care remains limited. The shortcomings in end of life care were addressed in the 2015 National Academy of Medicine (formerly the Institute of Medicine [IOM]) report), *Dying in America*. The report recommended expanding palliative care programs (IOM, 2015). According to recent studies, although the majority of patients reported a preference to die at home, 60% of deaths occurred in the hospital and the median hospice length of stay was a mere 17.4 days (Gomes et al., 2013; National Hospice and Palliative Care Organization, 2015). The United States is home to the most expensive healthcare system in the world with a price tag that will account for 20% of the gross domestic product (GDP) by 2020 (Institute for Healthcare Improvement, 2017). Much of this is spent on end of life care with nearly a quarter of all Medicare spending incurred in beneficiaries' last year of life (Riley & Lubitz, 2010).

Cancer patients may greatly benefit from palliative care. In 2016, over 1.5 million Americans were newly diagnosed with cancer (American Cancer Society, 2016). The physical

and psychosocial symptom burden of cancer is high and can have detrimental effects on patient and family quality of life (Greer et al., 2013). Consequently, several major medical organizations including the American Society of Clinical Oncology (ASCO), National Comprehensive Cancer Network (NCCN), and the World Health Organization (WHO) endorse the integration of palliative care into standard cancer care (Ramchandran, 2015). Although many cancer centers report offering palliative care, this remains largely limited to inpatient services. Furthermore, even fewer oncology clinics are fully integrated with palliative care (Hui et al, 2010).

Problem Statement

Currently, despite widespread recommendations for the early integration of palliative care into oncology care, patients are often referred to palliative care late in their disease course or even worse, not at all (Rauenzhan et al., 2017; Reville et al., 2013; Schenker et al., 2014). This represents a significant failure to provide evidence-based care to oncology patients as palliative care improves advance care planning (Kavalieratos et al., 2016), increased use of hospice (Kerr et al., 2016; Lustbader., 2017), and lower healthcare utilization (Lustbader et al., 2017). In addition, the national hospice median length of stay remains low at 17.4 days and 60% of patients are dying in acute care settings although the majority preferred to die at home (Gomes et al., 2013; National Hospice and Palliative Care Organization, 2015). Thus, the cost of care at the end of life remains high while the quality of care provided is low.

The stakeholders of the hospice and palliative care division of a large non-profit Midwest health care system have identified a similar problem with the quality of care provided to oncology patients within the organization. Patient access to palliative care services, specifically among oncology patients is limited. This is substantiated by a low proportion of new referrals coming from oncology providers, a large portion of inpatient palliative care referrals occurring

when patients are critically ill, low median length of hospice enrollment among oncology patients, and a low rate of oncology patients completing advance care planning prior to a hospice referral. Considering this, what is an evidence-based toolkit to improve timely and appropriate oncology referrals to palliative care that is feasible within this organization?

Evidence Based Initiative

Evidence for the creation of the toolkit was systematically reviewed. First, barriers to oncology referrals to palliative care were identified. Second, characteristics of successful strategies to improve timely referrals to palliative care were evaluated. A search was conducted of the databases CINAHL and PubMed from September 20, 2017-September 27, 2017 for articles published between 2007 and 2017. Key words for the search were “oncology”, “cancer”, “palliative care”, and “referrals”. Studies selected for inclusion in the review were from peer reviewed academic journals, adult patients, English language, and in the United States. Articles that were not specifically about barriers or interventions to improve palliative care referrals to oncology were eliminated. An initial search included 213 results after removal of duplicates, of which 145 did not meet inclusion criteria, and 58 were excluded due to low statistical or methodological rigor or were position papers or practice guidelines. The remaining 10 articles’ reference lists were reviewed resulting in an addition of 3 more articles. A total of 13 articles were included in the review.

The studies included: one prospective cohort, one quasi experimental, multiple retrospective chart reviews, and multiple qualitative studies including surveys, focus groups, and structured interview. There could be several explanations for the level of evidence that is available. First, palliative care patients are patients with severe and life limiting illnesses which make them a population not amenable to rigorous randomized control trials that could jeopardize

receiving the best level of care. Second, the disparity of oncology and a palliative care referrals remains despite well-published research regarding the benefits of integrating palliative care into oncology care and recommendations for the utilization of palliative care services from several major medical organizations (Ramchandran, 2015). Thus, qualitative research regarding what the referring providers perceive as their reasons for not referring is necessary to understand the continued low referral rate. This disparity also represents a mismatch of evidence-based practice and current practice that may explain the high volume of quality improvement interventions as opposed to experimental research (American Academy of Family Physicians, n.d). Appendix A displays both barriers and facilitators identified in the literature. Finally, financial considerations for the integration of palliative care into oncology care were explored and are displayed in Appendix B.

Barriers to Palliative Care Referrals

Access. Provider perceived burden on patients to spend more time at the clinic as well as financial and disease concerns limiting ability to attend palliative care appointments were commonly identified barriers in the literature (Rabow et al., 2016). Lack of oncology provider awareness about locally available services was also identified as a potential barrier (Schenker et al, 2014). Finally, long wait times for palliative care appointments were identified by oncologists as a reason for not referring patients to palliative care (Feld, Horn, & Phillips, 2016). This implies that having palliative care services physically close to an oncology clinic or even within an oncology clinic alone is not a sufficient intervention to increase patient referral to palliative care. Oncology provider awareness of available services is crucial as are timely appointments and options to limit patient travel such as community based palliative care (CBPC) and additional visiting clinic sites.

Oncology Provider Knowledge. Results of several studies showed that oncology providers' knowledge about palliative care to be inadequate (Schenker et al., 2014; Walbert, Glantz, & Pudvali, 2016; Feld, Horn, & Phillips, 2016). This included misconceptions about the difference between hospice and palliative care, the inability to combine palliative care with aggressive treatment, and the belief that palliative care could be adequately provided by oncologists. This knowledge discrepancy also extended to nurses (Autor, Storey, & Ziemba-Davis, 2013). Oncology providers also expressed hesitancy in discussing a palliative care referral with patients and felt that the referral would not be well received by patients (Feld et al, 2016), that a referral may alarm patients and their families (Smith et al., 2012), and even that patients would equate a palliative care referral with death (Rabow et al., 2016). Thus, referring providers need to be well equipped to discuss palliative care referrals with their patients and to be well informed of the characteristics and features of palliative care.

Ease of Collaboration. Finally, the ease of which referrals are initiated as well as the quality of ongoing collaboration between palliative care and oncology providers may impede palliative care referrals. In a focus group of oncology clinicians, referrers felt that they needed to feel confident in the quality and capability of the palliative care providers as well as to have defined responsibilities and clear team communication (Le et al., 2014). In an analysis of organizational factors influencing palliative care utilization at an academic cancer center, an unwieldy referral process, lack of same day appointments, and inadequate communication between palliative care and oncology providers were all identified as potential barriers (Le et al., 2014). This supports the need for a referral process that is user friendly, fits in to office workflow, establishes what services each specialty will provide, and sets clear expectations for communication between oncology and palliative care providers.

Effective Strategies to Improve Referrals to Palliative Care

Patient Screening and Defined Referral Criteria. Two studies implemented the Edmonton Symptoms Assessment Scale (ESAS) to better identify patients who may benefit from a palliative care referral. Hui et al. (2017) collected data pre, during, and post implementation of the scale, which was administered by a medical assistant prior to appointments and reviewed by a provider during the appointment. There was an increase in palliative care referrals from 12% prior to the intervention to 28% after, however this was not deemed statistically significant. Rauenzhan et al. (2017) implemented the ESAS in five oncology clinics after a brief staff education session about the tool and the consultation ordering process. Referrals prior to the intervention were an average of one patient per month and increased to an average of 10.8 patients per month.

Another study implemented eligibility criteria for automatic palliative care referrals to expedite referrals to palliative care among patients with cancer identified in the literature to be at high risk for uncontrolled symptoms, emotional distress, and prolonged hospitalization. Criteria included advanced cancer (stage IV solid tumor or stage III lung or pancreatic cancer), prior hospitalization within 30 days, hospitalization greater than 7 days, and active palliative complaints. The result was a statistically significant increase in palliative care consultations (39% to 80%) and hospice referrals (24% to 26%), as well as declines in 30-day readmission rates (35% to 18%) and chemotherapy after discharge (44% to 18%) (Adelson et al., 2017). This suggests that having established referral criteria may be a timely and easy to implement intervention to increase referrals.

Provider Education. As identified above, lack of provider knowledge about palliative care is a significant barrier to palliative care referrals. In a small but significant study of

attending oncologists, one nurse practitioner, fellows, and house staff, a didactic presentation, an education outreach visit, and pocket sized cards with referral criteria increased referrals from 24.9% to 31.5% in the 7.5 months post intervention. Interestingly, prior to the intervention the majority of palliative care referrals were for end of life issues (44.1%), goals of care (37.3%), and pain management (34.9%). After the intervention this was reversed with more referrals for pain management (47.2%), goals of care (34.9%), and end of life issues (29.2%) (Reville, Reifsnyder, McGuire, Kaiser, & Santana, 2013). These results support that enhancing provider knowledge about the services palliative care providers can provide as well as their competence to provide these services and providing defined referral criteria may be a useful intervention in increase oncology referrals to palliative care.

Branding. There are several studies that support that changing the name of palliative care to “supportive care” may increase both referring provider and patient acceptance. In a survey of 17 oncologists at an academic cancer center, providers perceived that their patients were more receptive to being offered supportive care rather than palliative care although they did not feel that this would change their referral patterns (Rhondali, Burt, Wittenberg-Lyles, Bruera, & Dalal, 2013). Walbert et al. (2016) conducted an anonymous survey of 239 physicians, nurse practitioners and physician assistants at an annual neuro-oncology meeting and found equivocal results with 51% preferring the name supportive care rather than palliative care.

In a retrospective chart review of 4710 consecutive oncology patients seen for first time palliative care consultations, consultations prior to a name change to supportive care were compared to those after the name change. After changing the name of the service from palliative to supportive care, 41% more palliative care consultations occurred, inpatient referrals increased from 733 to 1451, outpatient referrals occurred sooner from hospital discharge, and median time

from advance cancer diagnosis to palliative care consultation decreased 1.7 months (Dalal et al., 2011).

Finally, in a randomized telephone survey of 169 patients with advance stage cancer, patients were randomized into four groups that differed by name (supportive care versus palliative care) and (patient-centered versus traditional). When compared to palliative care, the term supportive care was associated with better understanding, more favorable impressions, and higher future perceived need (Maciasz et al, 2013). Although there may be other environmental and organizational changes occurring during these interventions that may have influenced these results, this is promising evidence in support of including the term “supportive” care in the clinic name or department description.

Financial Considerations

Several retrospective studies have demonstrated the relative cost savings of palliative care from a health system perspective. This is largely due to increased use of hospice (Kerr et al., 2014; Lustbader et al., 2017), fewer hospitalizations (Greer et al., 2016; Khandelwal et al., 2016; Lustbader et al., 2017; Penrod et al., 2010) and lower direct costs accrued during hospitalizations (McCarthy et al., 2015; Penrod et al., 2010; Starks et al., 2013; Whitford, Nilay, & Moriart, 2013). Cost savings could be used to bolster the argument in support of early integration of palliative care. However, this may not be enough to motivate individual referring providers and has been presented before by this organization to referring oncology providers to no avail.

Historically, oncology has been exempt from performance measures focused on hospital readmission rates unlike other life-limiting illnesses such as heart failure and chronic obstructive pulmonary disease (Boccuti & Casillas, 2017). This will change with the implementation of The Medicare Access and CHIP Reauthorization Act of 2015 (MACRA), which will introduce

comprehensive Medicare reimbursement changes for healthcare services (CMS, 2017). These reimbursement changes usher in an era of new oncology performance indicators that are more quality, not volume focused. High priority measures for oncology include:

- Proportion of patients with a completed Advance Directive
- Proportion of patients admitted to hospice for less than three days
- Proportion of patients admitted to intensive care in the last 30 days of life
- Proportion of patients who died from cancer without being admitted to hospice
- Proportion of patients who received chemotherapy within 14 days of death
- Proportion of patients who died from cancer with more than one emergency department visit in the last 30 days of life (CMS, 2017).

These changes may be powerful motivators for oncology providers as several of the high priority oncology quality measures are directly related to palliative care (Howie & Peppercorn, 2013).

Summary of Evidence Based Initiative

The cause of the current disparity in oncology referrals to palliative care is multifactorial. The solution will need to address numerous barriers in order to effectively improve oncology referrals to palliative care. The most feasible strategy for this organization is the incorporation of defined referral criteria. This was determined based on oncology provider preferences as well as input from the stakeholders at the hospice and palliative care organization. This intervention was also demonstrated to be effective in multiple studies in the literature review. The solution also needs to demonstrate financial benefit to the organization as a whole. Thus, the clinical question that was addressed is: what is an evidence-based toolkit to improve timely and appropriate referrals from oncology to palliative care that is feasible within the identified Midwest healthcare system?

Conceptual Models

Conceptual models provide a lens through which to view and understand a phenomenon of interest. This is done through a network of concepts and their relationships (McEwen & Wills, 2014). The development of an evidence-based toolkit to improve timely and appropriate oncology referrals to palliative care is the phenomenon of interest. The conceptual model that was used to better understand this population of patients and the symptoms that they experience is the Theory of Symptom Management. Similarly, a framework for implementation can guide the translation of evidence into practice. The Promoting Action on Research Implementation in Health Services (PARIHS) provided the framework for the development of an evidence-based toolkit to improve timely and appropriate oncology referrals to palliative care.

Theory of Symptom Management

The Theory of Symptom Management is a middle range nursing theory developed by faculty at the University of California, San Francisco (UCSF) (UCSF School of Nursing Symptom Management Faculty Group, 1994). The theory was originally developed to guide nurses to manage distressing symptoms by eliminating the symptom or removing the distress of the symptom (Humphreys et al., 2014). The theory has three major interactive concepts: symptom experience, symptom management strategies, and symptom status outcomes (UCSF School of Nursing Symptom Management Faculty Group, 1994).

Concepts. Theoretical concepts are defined as “the components of a phenomenon necessary to understand the phenomenon” (McEwen, M., & Wills, E., 2014, pp.27). The concepts of the Theory of Symptom Management are displayed in Appendix C and include symptom experience, symptom strategies, and outcomes.

Symptom experience. Symptom experience is how individuals perceive, evaluate, and respond to what they are feeling (UCSF School of Nursing Symptom Management Faculty Group, 1994). Putting this in the context of oncology patients who may benefit from palliative care, cancer patients suffer from a wide array of physical and psychosocial symptoms of their disease as well as side effects from their treatment (Greer et al., 2013). The goal of palliative care is to understand the symptoms that patients experience and create plans of care that specifically address these symptoms (National Hospice and Palliative Care Organization, 2017).

Symptom strategies. Next, symptom strategies are methods to minimize the symptom experience (UCSF School of Nursing Symptom Management Faculty Group, 1994). When applying this to oncology patients who may benefit from palliative care, palliative care providers are trained to treat the symptoms of individuals living with chronic or life limiting illnesses and are thus uniquely prepared to implement care plans to eliminate or minimize symptoms. These strategies can include both pharmacological and non-pharmacological interventions and are often a combination of both (National Institutes of Health [NIH], 2010).

Outcomes. Finally, outcomes refer to physical wellbeing, psychological wellbeing, and quality of life (UCSF School of Nursing Symptom Management Faculty Group, 1994). Palliative care comprehensively addresses all of these outcomes. Palliative care is associated with improved patient quality of life, patient and caregiver satisfaction, and increased advance care planning (Kavalieratos et al., 2016) as well as improved symptom burden (Shamieh et al., 2017). Outcomes particular to this project are quality measure performance.

Domains. An updated version of the UCSF Theory of Symptom Management further refined the three major concepts of the model by placing them within the context of three nursing domains: person, health and illness, and environment (Dodd et al., 2001). Personal aspects refer

to demographic factors such as age, gender, and race (Dodd et al., 2001). These factors were collected to assess whether patient demographic variables affect palliative care referral or quality measure performance. Environmental aspects refer to culture, beliefs, and the location individuals live or access care (Dodd et al., 2001). The organization has identified that the current visiting palliative care clinic at a metropolitan oncology office has left many patients without access to palliative care services and that this is further exacerbated by a low rate of oncology referrals to palliative care. Expanding palliative care services to include an additional visiting clinic site or offering CBPC services to oncology patients could help address this gap in care. However, an adequate referral base would need to be established. Finally, health and illness refers to the current state of individuals' health bearing in mind current diagnosis and disease course (Humphreys et al., 2014). Palliative care clinicians treat patients holistically, all the while assessing their current overall health status the current course of their cancer.

The concepts of the Theory of Symptom Management will be used to address barriers to palliative care referral. Symptom strategies will be used to explain the conditions and symptoms that palliative care clinicians treat including referral recommendations and to explain the services included with palliative care to referring providers. Outcomes will be used to analyze the cost savings of palliative care particularly as they are related to the new MACRA reimbursement criteria. Finally, the domains provided further criteria to consider when creating the toolkit to improve oncology referrals to palliative care. The personal domain was used to identify at risk populations where current care discrepancies exist such as those outside the area of the current visiting clinic and those demographic groups who receive fewer palliative care referrals. The health and illness domain was used to explain the balance between the respective care of palliative and oncology providers. This helps set boundaries and expectations and identifies

barriers to effective oncology and palliative care collaboration. Finally, the environment domain was used to describe the setting for implementation of the toolkit such as the main hospital campus and regional sites.

The PARIHS Framework

The Promoting Action on Research Implementation in Health Services (PARIHS) framework was designed to assist with the translation of evidence into practice (Kitson, Harvey, & McCormack, 1998). Because incorporating palliative care into standard oncology care is the best practice recommendation from numerous medical organizations, the PARIHS framework is appropriate to use to develop an evidence-based toolkit to improve timely and appropriate oncology referrals to palliative care (Ramchandran, 2015). The three major concepts of the PARIHS framework are evidence, context and facilitation (Appendix D). The concepts are directly related, so that the strongest environment for change occurs when evidence, context, and facilitation are strong and the weakest environment for change occurs when evidence, context, and facilitation are low (Kitson, Harvey, & McCormack, 1998). The concepts of the PARIHS framework were applied to the hospice and palliative care division of a large Midwest healthcare system in which the evidence-based toolkit was developed. The framework was also used to develop an implementation protocol for the toolkit and will be discussed in the results section. The relationships in the framework are displayed in Appendix D.

Evidence. Evidence includes research, practitioner expertise and experience, community/intended population, and the local environment; all forms of evidence should be assessed and evaluated for strengths and weaknesses. There is a wealth of research evidence in support of the early integration of palliative care into standard oncology care. Palliative care is associated with improved patient quality of life, advance care planning, patient and caregiver

satisfaction, and lower healthcare utilization (Kavalieratos et al., 2016). Early palliative care may lengthen survival time in certain patient populations, particularly cancer patients (Temel et al., 2010). Finally, palliative care has also been demonstrated to decrease healthcare costs (McCarthy et al., 2015; Penrod et al., 2010; Starks et al., 2013; Whitford, Nilay, & Moriart, 2013).

The organization stakeholders have identified that there are many cancer patients who may benefit from palliative care, but fail to receive these services. Having cohesive and ardent clinical views among staff is consistent with having strong practitioner expertise and experience. Patient preference also generates evidence. Again, palliative care improves patient and caregiver satisfaction (Kavalieratos et al., 2016).

Context. The context is the setting or environment in which a proposed intervention takes place (Kitson, Harvey, & McCormack, 1998). This includes the culture and leadership infrastructure of an organization. The Burke-Litwin (1992) model was used to conduct an organizational assessment of the identified Midwest healthcare system and included an assessment of culture and leadership.

The mission and values of the healthcare system influence the hospice and palliative care division culture. The mission of the healthcare system is to improve the health of the communities served and the system-wide vision is to be a national leader in healthcare. Both the mission and vision of the healthcare system along with the support of the organization suggest that creating an evidence-based toolkit to improve timely and appropriate oncology referrals to palliative care is highly relevant and important to the organization.

The leadership within the organization is a vertical chain of command. The measurements the organization uses are reported frequently and include national benchmarks such as average length of stay on hospice and admissions to the hospice and palliative care

programs. Of significance, is that the organization is not currently tracking the new Centers for Medicare and Medicaid Services (CMS) high priority oncology measures. Baseline CMS measures related to oncology were gathered as part of the project and assessed to assist with the cost analysis proportion of the toolkit as well as to create sustainability of the movement to improve oncology referrals to palliative care. These findings are discussed in the results section.

Facilitation. Facilitation includes the internal support provided by an organization to promote and sustain change (Kitson, Harvey, McCormack, 1998). The organization is comprised of individuals who are passionate about the work that they do and about ensuring that patients have access to their services. The organization has repeatedly invested in quality improvement and expansion as evidenced by the new CBPC program. The organization is also part of the initial cohort of organizations implementing the Centers for Medicare and Medicaid Services Medicare Care Choices Model (MCCM), which started in 2016 (Centers for Medicare and Medicaid Services [CMS], 2017). Finally, the organization has hosted two prior Doctor of Nursing Practice (DNP) students to implement change at the organization. Thus, the buy in and the willingness to assist with change are high.

The PARIHS framework (Kitosn, Harvey, & McCormack, 1998) was used to assist with the translation of evidence in to practice to create an evidence-based toolkit to improve timely and appropriate oncology referrals to palliative care within an identified organization. The evidence in the literature and clinician experience, context of the organization, and strong facilitation within the organization were utilized to successfully create and disseminate the toolkit to stakeholders within the organization.

Need and Feasibility Assessment of the Organization

Assessment of Organizational Needs and Resources

The hospice and palliative care division of a large Midwest healthcare system has identified a problem in patient access to palliative care services, specifically among oncology patients. This is substantiated in data from the hospice and palliative care clinic collected from December 2015 to September 2017, which demonstrated a low number of oncology palliative care referrals (34.7% of total referrals), a large portion of inpatient palliative care referrals occurring when patients are critically ill (18.9% in critical care and 12.9% in telemetry/step down), low median length of hospice enrollment (mean 63 days, median 10 days), and only 31.2% of oncology patients completing advance care planning prior to a palliative care referral. Implementing an evidence-based toolkit to improve oncology referrals to palliative care is one way to help bridge this gap in the current care delivery.

An organizational assessment of the hospice and palliative care division and the encompassing healthcare system was completed using the Burke Litwin Model of Organizational Performance and Change (1992). The model provided a comprehensive assessment of the organization through the evaluation of 12 variables, which explore organization structure and feasibility. The variables are displayed in Appendix E (Burke & Litwin, 1992). As demonstrated by the multidirectional arrows shown in the diagram, relationships between the variables may occur through both positive and negative feedback and are interrelated. The variables located towards the top of the diagram have a stronger influence on change than those located near the bottom. The organizational assessment identified strong context and strong facilitation within the organization.

SWOT Analysis of Proposed Intervention

A SWOT analysis was conducted after the organizational assessment. A SWOT analysis is a tool used to evaluate the strengths, weaknesses, opportunities, and threats to a project (Zaccagnini & White, 2017). This helps to plan for and appropriate resources to weaknesses as well as to maximize strengths and areas for growth. The SWOT analysis for development of an evidence-based toolkit is displayed in Appendix F.

Strengths. The hospice and palliative care division stakeholders identified this problem as well as expressed interest and support in finding a solution. This represents support to complete the project. Secondly, the clinic is one of the largest palliative care programs in west Michigan and under the umbrella of one of the largest healthcare systems in the Midwest, both lending to financial and structural support. Finally, this organization has recently invested in expanding community palliative care services and offering the Medicare Care Choices program. This will provide some clinical infrastructure for growth that is already in place.

Weaknesses. The largest weakness was a reported history of reluctance among oncology providers to refer patients to palliative and hospice services. The existing confusion within the organization as well as the healthcare system about the differences between palliative care and hospice and the programs currently offered also weakens the referral base. Confusion about what palliative care entails was also identified as a barrier in the literature (Autor, Storey, & Ziemba-Davis, 2013; Feld, Horn, &Phillips, 2016; Schenker et al. 2014).

Opportunities. Oncology has long been exempt from performance measures focused on hospital readmission rates unlike other life-limiting illnesses such as heart failure and chronic obstructive pulmonary disease (Boccuti & Casillas, 2017). The Medicare reimbursement changes that will follow the implementation of MACRA usher in an era of new oncology performance

indicators that are more quality, not volume focused. This represents an opportunity for the hospice and palliative care division to tactfully market their services as providing services targeted towards improving not only patient satisfaction but also, quality measures and ultimately reimbursement (Howie & Peppercorn, 2013).

Threats. The largest threat to the proposed project was the cost analysis not demonstrating significant value of palliative care services. There was also the potential for inadequate planning for program growth. Because of this, an implementation and sustainability plan were included in the toolkit.

Overall, the hospice and palliative care clinic stakeholders identified a gap in palliative care delivery to oncology patients within their organization and were ready and willing to participate in a solution to this problem. Strong evidence, context, and facilitating factors to support this initiative were identified through an integrative literature review, organizational assessment, and SWOT analysis.

Project Plan

Purpose of Project

The purpose of this DNP scholarly project was to develop a toolkit to improve timely and appropriate oncology referrals to palliative care. This was accomplished by answering the clinical question: What is an evidence-based toolkit to improve timely and appropriate oncology referrals to palliative care that is feasible within this organization?

Objectives

An evidence-based toolkit to improve timely and appropriate oncology referrals to palliative care completed the following objectives:

- Collect baseline data to establish the current state of oncology measures

- Perform a cost savings analysis of current high priority oncology quality measure performance utilizing MACRA reimbursement criteria to substantiate value by February 22, 2018
- Establish referral recommendations for oncology providers utilizing a regression analysis with the consultation of a Grand Valley State University graduate statistics student to determine which patient demographics and disease characteristics are associated with poor quality measures performance by February 22, 2018
- Create protocol plan by February 23, 2018 for implementation of toolkit which includes:
 - Cost savings analysis based on current quality measure performance
 - Referral recommendations for oncology clinicians
 - Marketing and educational tools for referring clinicians
 - Implementation protocol for palliative care clinicians
 - Sustainability plan for palliative care clinicians
- Create marketing and educational tools for referring oncology clinicians and present this to organizational stakeholders on February 22, 2018
- Create sustainability plan by February 22, 2018
- Disseminate work to key stakeholders for acceptance for implementation on February 22, 2018.

Type of Project

The project was a quality improvement project. Quality improvement is defined as a “systematic, formal approach to practice performance and efforts to improve performance” (American Academy of Family Physicians [AAFP], n.d). Quality improvement involves analyzing organizational culture, identifying and prioritizing practice problems, collecting and analyzing

data, communicating results, and ongoing evaluation (AAFP, n.d). Organizational culture and the practice problem were identified through the organizational assessment and SWOT analysis. The data collected was current high priority oncology quality measures, which were analyzed for cost savings potential utilizing MACRA reimbursement criteria and underwent a logistic analysis, Chi-Square, or Fisher's exact test where appropriate to identify high-risk populations that should be considered for early referral to palliative care. Finally, the results of the analysis were incorporated into the toolkit that included an implementation and sustainability plan. The toolkit was disseminated to key organizational stakeholders.

Setting and Needed Resources

The hospice and palliative care division of a large Midwest healthcare system was the setting for this DNP scholarly project. The resources for this project included access to electronic medical records to obtain patient data related to oncology quality measures as well as a laptop with access to a secure hard drive and an organizational e-mail address. Staff time commitment included time from quality improvement, administrative, and clinical staff to participate in meetings and project discussions. A team was established at Grand Valley State University to assist the DNP student in completing the project and included an organizational mentor (Department Chief of the hospice and palliative care program), a committee member with an expertise in palliative medicine, a committee member that is a practicing palliative care APRN, and a committee chair with an expertise in the DNP scholarly project. An informal team was also established and included the manager of hospice and palliative care program development and a graduate GVSU statistics student.

Design for Evidence-Based Initiative

The PARIHS framework (Kitson, Harvey, & McCormack, 1998) was used to guide the development of an evidence-based toolkit to improve timely and appropriate oncology referrals to palliative care:

- Evidence from a comprehensive literature review as well as clinician expertise guided the development of the toolkit. Evidence from grey literature, which is literature that is not published commercially and often includes reports, market research, and memoranda was also used to further investigate CMS reimbursement and quality measures (Grey.Lit.org, n.d).
- Context also played a role. The current culture at the hospice and palliative care division is strong and supportive of change and growth. The purpose of the toolkit is to address a problem that clinicians have identified as a current gap in care.
- Facilitation was also considered when developing an implementation and sustainability plan. This included a cost analysis, referral guidelines, as well as an implementation and sustainability plan including how and when to track quality measures and referral rates in the future.

Participants

Participants for the project were the 418 patients whose charts were retrospectively reviewed and the stakeholders and palliative care staff members who were presented the toolkit for acceptance. The patient population are patients who were treated at one of the healthcare system's cancer centers from September 1, 2016- September 1, 2017. The stakeholders who were presented the toolkit are the division chief, manager of program development, and at least one clinician of the hospice and palliative care clinic.

Measurement: Source of Data

Data collection to inform the toolkit was performed by the DNP student and administrative staff. The data collected was used as a baseline and to perform a cost analysis of what current reimbursement impact will be utilizing the new MACRA criteria. Data collected was also used to perform an analysis to determine which patient demographics, cancer diagnoses, and disease characteristics were associated with poor quality indicator performance to guide referral recommendations. The cancer diagnoses that were analyzed were selected by determining the cancers with the highest incidence in the U.S according to the National Institutes of Health (NIH, 2014) in conjunction with cancer diagnoses that have been shown to perform poorly for the quality measures being assessed. A literature review of cancers and quality measure performance is located in appendix H.

Functional status was also frequently assessed in the literature as a potential independent variable affecting quality measure performance. Due to the ease of use and demonstrated validity in the literature, the Eastern Cooperative Oncology Group (ECOG) performance status was used to assess functional status of the reviewed patients (Oken et al., 1982; Cleeland et al., 2013). The ECOG tool is depicted in Appendix I. Whenever possible ECOG scores were taken directly from clinician documentation. If a score was not explicitly stated, the DNP student scored the patient based on their most recent office note physical assessment and self reported symptom assessment sheet. The final list of collected variables is located in Appendix J.

The DNP student was required to complete and sign an *Acknowledgement of Training in Patient Privacy in Research* training. The DNP student also completed electronic medical record (EMR) training and was granted access to the EMRs used within the hospice and palliative care division. These EMRs include EPIC and Cerner. Finally, the DNP student was granted access to

the network where all of the documents for the hospice and palliative care division are stored and shared. The data collected was for all patients treated at one of the healthcare system's cancer centers from September 1, 2016-September 1, 2017. Patients treated for a non-oncology diagnosis were excluded. Sample size was calculated to be 160. A randomized selection was used and pulled from the 418 charts reviewed meeting inclusion criteria. Charts were reviewed to determine:

- Age
- Gender
- Primary cancer diagnosis
- Metastasis status
- ECOG score (0-4)
- Admission to palliative care services status
- Advance Directive completion
- Deceased status
- Admission to hospice status
- Hospice length of stay
- Admission to intensive care in the last 30 days of life
- Chemotherapy in the last 14 days of life
- More than one emergency department visits in the last 30 days of life.

Appendix G contains the spreadsheet for data collection. A number was assigned to patients to de-identify patient information. Data was stored on the organization's network and password protected.

Budget. A budget was created to demonstrate time needed from hospice and palliative cares team members to implement and sustain the toolkit as well as needed materials (Appendix K).

Cost Savings Analysis. The toolkit includes an assessment of current quality indicators and the reimbursement implications that will start in 2019 under MACRA. There is a 4% penalty or reward depending on quality measure performance. In addition, this cost adjustment will biannually increase until 2022 to a penalty or reward of 9% (CMS, 2017b).

Steps for Toolkit Development

The completion of this DNP scholarly project included (Appendix L):

- Data collection retrospectively from patient charts utilizing EMRs to collect: Primary cancer diagnosis, age, gender, metastasis, ECOG score, deceased status, admission to hospice status, hospice length of stay, admission to palliative care services status, admission to intensive care in the last 30 days of life, receipt of chemotherapy within the last 14 days of life, and more than one visit to emergency department visit in the last 30 days of life
- A cost savings analysis of current high priority oncology quality measure performance utilizing MACRA reimbursement criteria to substantiate value
- Referral recommendations for oncology providers utilizing a logistic analysis, Chi-Square, or Fisher's exact test where appropriate with the consultation of a Grand Valley State University graduate statistics student demonstrating any patient demographics, disease characteristics, or functional status associated with worse quality measure performance
- Protocol plan for implementation of toolkit which includes:

- Cost savings analysis based on current quality measure performance
- Referral recommendations for oncology clinicians
- Marketing and educational tools for referring clinicians
- Implementation protocol for palliative care clinicians
- Sustainability plan for palliative care clinicians
- Presentation of the toolkit to key stakeholders for acceptance for implementation
- Upload the toolkit to a digital folder within the protect hospice and palliative care network drive
- Defense of the final toolkit at Grand Valley State University
- Upload the toolkit to ScholarWorks©.

Project Evaluation Plan

The evidence-based toolkit to improve timely and appropriate oncology referrals to palliative care within a hospice and palliative care division of a large Midwest healthcare system was evaluated based on acceptance by key stakeholders within the organization. Stakeholders, which include the medical director, manager of business and program development, and an organizational nurse practitioner, accepted the toolkit, which was the final outcome of this DNP scholarly project.

Ethics and Human Rights Protection

The health system's Institutional Review Board (IRB) determination was obtained and concluded the project to be non-human research on 11/20/2017. Grand Valley State University accepted the healthcare system's determination and ruled equivocally on 11/26/2017. All data was de-identified and kept on the health system's internal drive and password protected.

Business Model

This DNP scholarly project is the formation of a toolkit to increase appropriate referrals to the organization. The time and work completed by the DNP student is without cost to the organization. However, the organization invested time spent by administrative staff and clinicians to attend meetings, project defense, and final defense as well as by providing a laptop for the student from September 2017-April 2018. This budget is demonstrated in Appendix K.

Stakeholder Support

The key stakeholders within the hospice and palliative care division, which include the medical director, manager of business and program development, and an organizational nurse practitioner, identified a practice problem in oncology referrals to palliative care. They have accepted a toolkit to address this problem. A letter indicating the organization's support is located in Appendix M.

Project Outcomes

Current Quality Measure Performance and Cost Savings Analysis

Current oncology quality measure performance was assessed using a retrospective chart review. Of the 418 charts reviewed, 160 were included in the total population group using randomization. There were 45 deceased patients and all deceased patients were used to assess quality measures related to end of life. Advance directive completion is the only quality measure that can be applied to the total population. The remaining five quality measures are all directly related to end of life and only deceased patient data was utilized.

The results were used to calculate current performance and resultant points under MACRA reimbursement criteria. A potential Merit-based Incentive Payment System (MIPS) report card was produced. The lowest performing quality measure was advance directive

completion with 61.88% of patients assessed as not having an advance directive. This was followed by proportion not admitted to hospice and proportion admitted to hospice for less than three days, both at 33.33%. Proportion of patients with greater than one emergency room visit and proportion of patients admitted to ICU in the last 30 days of life followed at 11.11% each. The best performing quality measure was proportion of patients who received chemotherapy in the last 14 days of life with an occurrence rate of 8.89%. It is important to note that quality measure performances are awarded points based on each score's percentile to in relation to other hospitals. Because these are new quality measures, these percentiles will not be established until after the first performance year (2019). The target for these measures is estimated based on similar quality measure percentiles, which have historically set stricter targets for measures associated with higher costs such as hospitalizations and emergency room visits. This report card is located in Appendix N.

If current performance continues, the highest possible score if all points are awarded for the remaining categories of improvement activities and advancing care information is 84.94%, which will result in a 4% positive payment adjustment in 2019. However, if not all points are awarded for the remaining two categories, the organization could receive no positive payment adjustment or a negative payment adjustment if the total points awarded is less than 25 or no data is reported. The monetary analysis of these adjustments is based on average cost for one emergency department visit as quoted by the organization's insurance company and the average cost of acute hospitalization per day in Michigan (Rapple, 2015). It is imperative that performance be improved while reimbursement adjustments are low, as 2019 cost adjustments will be \$40.00 for emergency room visits and \$85.20 per ICU day but will increase to \$90.00 per emergency room visit and \$191.70 per ICU day in 2022. If this trend continues, the current

performance of five ICU hospitalizations is currently a negative adjustment of \$426.00 per day with an average length of stay of three days, ultimately accruing a \$1,278.00 negative payment adjustment for 2019. In 2022, this same performance will result in a negative adjustment of \$958.50 per day total for the five patients, reaching \$2,875.50 based on the current average length of stay of three days. Similarly, the current emergency room visit performance of four visits will result in a total of \$160.00 negative adjustment in 2019 and will increase to \$360.00 in 2022. This analysis is depicted in Appendix O.

Referral Recommendations

There were not enough observations among deceased patients run a logistic regression. For categorical variables chi-square tests or Fisher's exact test was used where appropriate. A two- sample t-test was used to assess the relationship between patient age and quality measure performance. All analyses considered a p value of less than .05 to be significant. There was no significant relationship between gender or age for any of the quality measures aside from females and hospice length of stay less than three days ($p=0.022$). There was no significant relationship between metastasis, primary disease, or functional status and quality measure performance. Thus, there is no easy way to predict which patients will ultimately perform poorly in the assessed quality measures.

The deceased patients were more likely to have metastasis than the total population (93.18% vs 41.25%) and more likely to have higher ECOG scores (51.11% ECOG 2 & 22.22% ECOG 3, vs 56.88% ECOG 0 & 31.88% ECOG 1). This indicates that deceased patients were more likely to have advanced disease and lower functional status. The ages between both groups were equivocal with a mean age of 68.09 for the deceased group and a mean age of 67.43 for the total group. Tables describing both groups are located in Appendix P.

Based on this analysis, although metastasis and functional status were not independently associated with poor quality measure performance, both variables were more common in the deceased group and for that reason these populations should be considered for referral. Furthermore, this analysis supports that there were patients who performed well in terms of functional status and metastasis and still performed poorly in quality measure performance and vice versa. This supports current recommendations as set forth by the National Academy of Medicine (IOM, 2015) that palliative care is offered to all patients with serious illnesses. Final recommendations for referring providers are a combination of current recommendations and this analysis and are summarized in Appendix Q.

Substantiated Value of Palliative Care

One result of this analysis was the demonstrated benefit of palliative care on quality measure performance. Among deceased patients, palliative care was significantly associated with advance directive completion (60% vs 40%, $p=.0189$) and lower ICU utilization (100% vs 0%, $p=.0435$). There were only 5 patients who were admitted to the ICU in the 30 days preceding death and this small sample size does limit this significance. Nonetheless, these results are promising and support that palliative care can improve both quality measure performance and ultimately reimbursement. This analysis is located in Appendix R.

Marketing and Educational Tools for Referring Providers

Index cards were produced to succinctly communicate recommendations to referring providers. The de-identified version of the marketing materials is located in Appendix U. Palliative care clinicians also received printouts of the data analysis with detailed explanations of results.

Implementation Protocol

A protocol for implementation of the toolkit, which includes: cost savings analysis, referral recommendations, marketing and educational tools, implementation protocol, and sustainability plan was presented and accepted by hospice and palliative care stakeholders. The implementation protocol utilized the PARIHS framework for guidance. The theoretical outline of the protocol is located in Appendix S. Appendix T contains stepwise instructions for implementation. The stepwise instructions refer to feedback forms for both palliative care clinicians and referring providers to evaluate the toolkit once it is implemented. These forms are located in Appendix V and Appendix W respectively.

Sustainability

The hospice and palliative care division has a plan for program growth, which includes hiring new physicians, nurse practitioners, and nursing staff as well as innovative ways to deliver care such as through telehealth and expansion of home based care services. In order for service lines to continue to develop, the division will need to continue to increase in patient referrals. Oncology patients are a patient population that has been identified as not receiving palliative services or receiving services late in their disease course. The clinicians within the organization are dedicated to growing this population along with their program, thus supporting the sustainability of a toolkit to drive an increase in oncology patient referrals.

Both referral data and quality measure performance should be monitored after implementation of the toolkit to measure success of the toolkit. The next DNP student at the organization will perform monitoring of new oncology referrals and quality measure performance. Timelines for evaluation are included in the implementation protocol. The organizational nurse practitioner that assisted in the completion of this project has agreed to

continue her involvement in the implementation and sustainability of the toolkit. Evaluation tools are located in Appendix X.

Implications for Practice

The stakeholders of the hospice and palliative care clinic have identified that there are many cancer patients who may benefit from palliative care, but fail to receive these services. The development of a toolkit to improve timely and appropriate oncology referrals to palliative care will improve patient access to palliative care. As a direct result of this DNP project the hospice and palliative care division is enacting a new “opt out” policy for oncology referrals to palliative care to replace the current “opt in” policy. This means that all patients regardless of primary cancer diagnosis, extent of metastasis, or functional status will receive a palliative care referral. This will also improve patient and family satisfaction, increased use and length of stay on hospice, and overall healthcare costs. Finally, as demonstrated by the data analysis, increasing patient access to palliative care will improve oncology quality measure performance and ultimately reimbursement for referring oncology providers.

Strengths

A major strength of the toolkit is that it was developed in cooperation with members of a hospice and palliative care division that are supportive of using the toolkit and ensuring success of the toolkit. The analysis performed demonstrated the value of palliative care in improving the lowest performing quality measure, advance directive completion. This may be a substantial motivator for referring providers. In addition, quality measure performance and the cost analysis demonstrate opportunity for improvement to optimize reimbursement, which again may be used as motivation for referring providers.

Weaknesses

The major outcome of this project was the development of an evidence-based toolkit to improve oncology referrals to palliative care. The major weakness of this project is that the toolkit will still need to be implemented. Doctor of Nursing Practice projects may take on a variety of forms and thus may not always include implementation of a practice change. Most importantly, the DNP project needs to be driven by the clinical question or issue, which this project was. This project is most accurately described as an exploratory DNP project as it assessed the practices of healthcare professionals (oncology providers) and ultimately the healthcare system to provide baseline data that will be used to drive practice improvement (Moran, Burson, & Conrad, 2017).

Although the student has taken great care to include all possible necessities in the toolkit, there is always the possibility that after implementation there may be the need to modify the toolkit. This will be the responsibility of the next DNP student and the organizational nurse practitioner that assisted in the completion of this project. Part of quality improvement work is constant reevaluation.

Relation to Other Evidence/Healthcare Trends

Palliative care has been one of the fastest growing healthcare specialties in the United States. Palliative care has been proven to increase patient satisfaction, improve symptom management, decrease intensive care in end of life, and to lead to cost savings (Hughes & Smith, 2014). Much of the demonstrated cost savings of palliative care in the literature has been through avoidance of cost such as less intensive care. This project has demonstrated additional cost savings in the form of improved quality measure performance to capture optimal reimbursement for services.

Barriers to the incorporation of palliative care into standard oncology care include physician resistance and unrealistic patient and caregiver expectations (Hughes & Smith, 2014). Through the development of the toolkit, the DNP student seeks to decrease physician resistance among referring providers by demonstrating tangible benefit to palliative care services as well as further define patients most likely to benefit. In a recently published proposed research agenda for high value palliative care, the question of how to best change clinician behavior around a palliative care referral was proposed (Courtright, Cassel, & Halpern, 2018). The implementation of this toolkit is one novel approach to answer this question.

Limitations

This project had several limitations. First, the data analysis portion included a small deceased patient population (n=45). This rendered one of the significant relationships, the relationship of palliative care to ICU admission to be significant (p=.0435) but limited by a small cell count. Of the 20 patients that received palliative care services, 16 received services as inpatients and 4 received services as outpatients. Thus, there was not a large enough sample size to determine if earlier palliative care involvement through outpatient services significantly impacted outcome performance. There were two quality measures, admission to hospice and length of stay on hospice that approached but did not reach significance (p=.0897 & p=.0823). A potential future clinical question is: would significance have been reached with earlier palliative care involvement, as this has been demonstrated in the literature. Although these are current limitations, if referrals improve with implementation of the toolkit, there is a possibility that these questions could be answered more precisely with a larger sample size. Therefore, part of the sustainability plan includes monitoring quality measure performance. As the number of

oncology patient referrals grows, this analysis could be replicated to reevaluate this and further substantiate the value of palliative care on additional quality measure performance.

Reflections on Doctor of Nursing Practice Essentials

The American Association of Colleges of Nursing (AACN) has established eight essentials that define the curriculum of DNP programs. These essentials are the foundation upon which a DNP prepared nurse is prepared to practice (AACN, 2006) In completing this scholarly project the DNP student demonstrated all eight of the essentials.

Scientific Underpinnings for Practice

Scientific underpinnings for practice refers to the underlying body of knowledge that governs nursing practice and includes an understanding of the health and illness continuum, the interaction of patients and environment, the nursing interventions that affect these relationships, and the theoretical foundations for practice (AACN, 2006). The DNP student assessed both patient and disease characteristics and the intervention of palliative care to determine how these independent variables affected oncology quality measures in order to inform referral guidelines. In addition, the project was to develop a new practice approach and was grounded in the Theory of Symptom Management.

Organizational and Systems Leadership for Quality Improvement and Systems Thinking

Organizational and systems leadership is demonstrated by the ability to develop and evaluate care delivery with an emphasis on quality and efficiency of care provided (AACN, 2006). The student evaluated the delivery of palliative care at an organization and identified a practice problem. Advanced communication and leadership skills were used to identify a solution to the problem. Consideration was given to budgetary concerns, the diverse populations

involved, and potential barriers to be faced upon implementation of the toolkit. This included an implementation and sustainability plan.

Clinical Scholarship and Analytical Methods for Evidence-Based Practice

Scholarship and research form the foundations of doctoral education. This includes the ability to critically assess evidence, apply relevant evidence to practice, design and implement processes to evaluate practice outcomes, use information technology to collect and analyze outcomes, and to disseminate findings from practice and research to the healthcare community (AACN, 2006). The DNP student performed an integrative literature review to appraise evidence relevant to the phenomenon of interest and used the findings of the review to design a quality improvement project. The DNP student also completed a data analysis that was carried out using the organizational EMR. Findings were disseminated through paper publication, poster presentations, and an oral defense.

Information Systems/Technology and Patient Care Technology

The DNP prepared nurse should also have the ability to use information systems and technology to transform healthcare. This includes the design, selection, and use of information technologies to evaluate care outcomes and financial performance (AACN, 2006). The DNP student utilized the organization's EMR to conduct a retrospective chart review. The DNP student also took great care to collect and store data securely.

Health Care Policy for Advocacy in Health Care

Competency in healthcare policy should include the appraisal of health policies, leadership in the development of healthcare policies, and advocacy for the promotion of healthcare policies as well as for justice and equity across all healthcare settings (AACN, 2006). This project advocated for the availability of palliative care services to all oncology patients and

directly resulted in a change to the current “opt in” referral policy to an “opt out” policy. In addition, the DNP student participated in Nurse Practitioner advocacy day in Lansing, Michigan.

Interprofessional Collaboration for Health Outcomes

Competency in interprofessional collaboration refers to communication, collaborative, and leadership skills to develop, implement, and sustain practice change (AACN, 2006). The DNP student demonstrated interprofessional collaboration through working with palliative care and oncology clinicians as well as administrative staff. Regular meetings were conducted as well as frequent e-mail and phone communication between the DNP student and all participants including physicians, management, nurses, and social work.

Clinical Prevention and Population Health

Clinical Prevention and population health refers to the ability to analyze epidemiological, biostatistical, and environmental data as it pertains to individual and population health as well as to evaluate care delivery models in relation to diverse populations (AACN, 2006). The DNP student analyzed biostatistical data including primary cancer diagnosis, extent of disease, functional status, and patient demographics. The DNP student incorporated the psychosocial dimension of palliative care into this project through the application of the Theory of Symptom Management.

Advanced Nursing Practice

Advanced nursing practice is demonstrated through the ability to perform a comprehensive history and physical assessment, develop an appropriate plan of care, sustain relationships with patients and their families, mentor other nurses, and education and guide individuals through health transitions (AACN, 2006). During the completion of the DNP project, the student spent time in both inpatient and outpatient palliative care settings seeing patients in conjunction with a

nurse practitioner and palliative care physician. Additionally, assessing the clinical problem and designing an effective solution was made possible by the clinical knowledge gained during the completion of the advance practice nurse portion of the degree program. The DNP student has also mentored two DNP students who will be at the same project site next year.

Dissemination of Outcomes

Dissemination of the evidence-based toolkit occurred through presentation to the stakeholders of the hospice and palliative care organization. Project findings were also presented at the Three Minute Thesis Competition at Grand Valley State University on 2/15/2018. The toolkit was presented at Grand Valley State University with the DNP student's project team in attendance as well as other graduate nursing students and faculty. A formal paper detailing the scholarly project will be uploaded to ScholarWorks®. Finally, the DNP student will present a poster detailing the project at the organization's student poster rounds.

Conclusion

As cancer mortality decreases the number of individuals living with cancer will continue to grow. Oncology patients stand to greatly benefit from the early integration of palliative care. Unfortunately, the stakeholders of a hospice and palliative care division of a large Midwest healthcare system have observed that oncology patients are being referred late in their disease course to palliative care services, or even worse not at all. A quality improvement project completed by a DNP student included the development of an evidence-based toolkit to improve timely and appropriate referrals from oncology to palliative care.

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Appendix A
 Barriers and Facilitators of Oncology Referrals to Palliative Care Identified in the Literature

Barriers	Facilitators
<p>Inadequate referring provider knowledge (Autor, Storey, Ziemba-Davis, 2013; Feld, Horn, &Phillips ,2016; Schenker et al ,2014).</p> <p>Belief that referral would alarm patient and/or families (Smith et al. 2012; Feld, Horn, &Phillips, 2016; Le et al (2014).</p> <p>Long wait times for appointments, unsure of locally available services (Feld, Horn, &Phillips, 2016; Schenker et al , 2014)</p> <p>Ease of collaboration (Le et al., 2014)</p>	<p>Name change to supportive care (Dalal et al 2011; Macziasz et al.,2013; Rhondali, Burt, Wittenberg-Lyles, Bruera, & Dalai, 2013; Walbert et al.,2016).</p> <p>Ease of referral (Le et al.2014)</p> <p>Defined communication and expectations (Le et al,2014)</p> <p>Patient screening/ established referral criteria (Rauenzhan et al.,2017; Hui et al., 2017; Adelson et al., 2017)</p> <p>Provider education (Reville, Reifsnyder, McGuire, Kaiser, & Sanana, 2013)</p>

Appendix B
Financial Aspects of Palliative Care: CMS 2017 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

(CMS, 2017)

Appendix C
 Revised Theory of Symptom Management

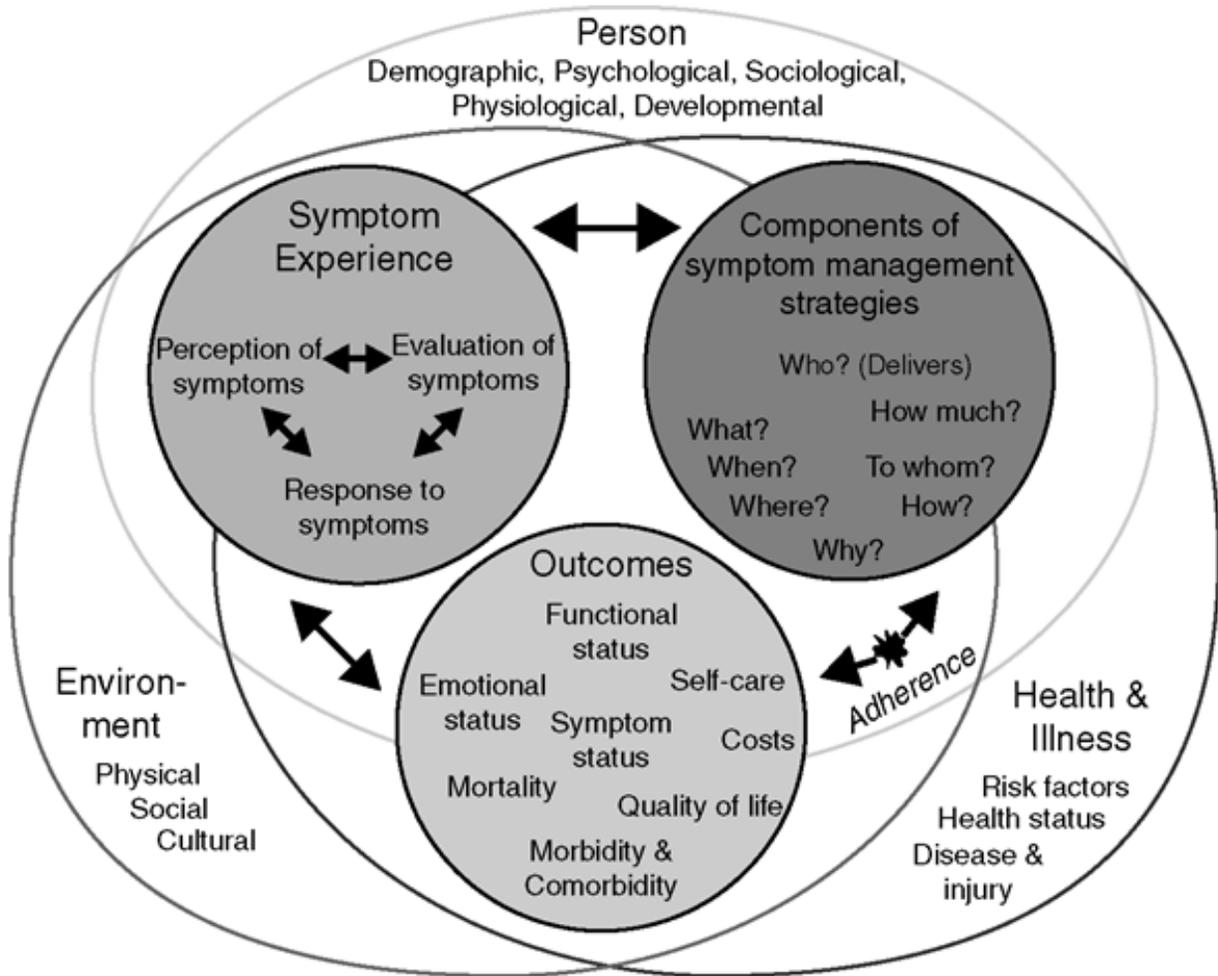


Figure 1. Revised Symptom Management Conceptual Model. Reprinted from “Advancing the Science of Symptom Management”, by Dodd, M., Facione, N., Huphreys, J., Miaskowski, C., & Rankin, S, 2001, *Journal of Advanced Nursing*, 33(5), 668-676.

Appendix D
PARIHS Framework

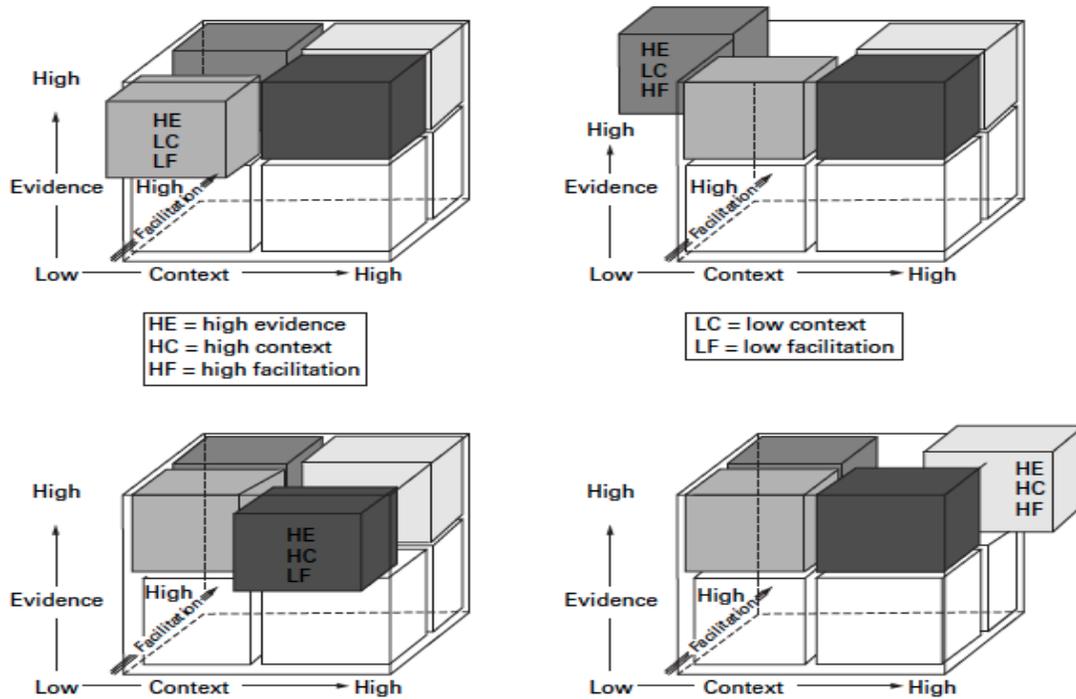


Figure 2. A three dimensional matrix in which evidence, context, and facilitation can either be expected to influence the outcome in a positive or negative way. Reprinted from “Enabling the implementation of evidence based practice: A conceptual framework,” by EA. Kitson, G. Harvey, & B. McCormack, 1998, *Quality in Health Care*, 7, 149-158. Copyright BMJ Publishing Group Ltd.

Appendix E
 The Burke-Litwin Model of Organizational Performance and Change

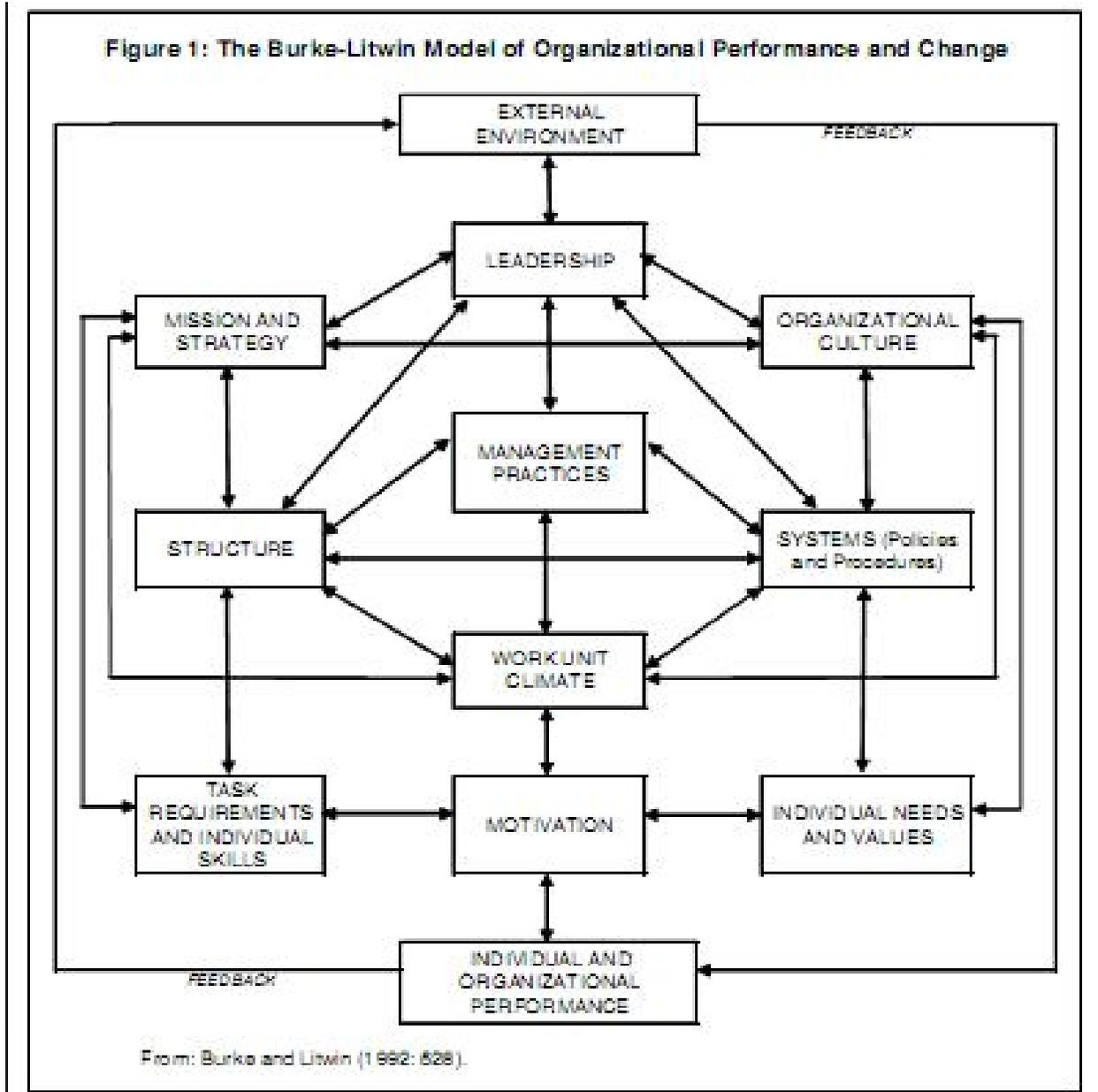


Figure 3. A model of organizational performance and change. Reprinted from “A Causal Model of Organizational Performance and Change.” By W.W Burke and G.H Litwin, 1992, *Journal of Management*, 18(3), 528. Copyright 1992 by Southern Management Association

Appendix F

SWOT Analysis of Project

<p style="text-align: center;">Strengths</p> <ul style="list-style-type: none"> • Staff member support • Size and strength of the organization as a whole • CBPC clinic is already being piloted for Heart Failure patients 	<p style="text-align: center;">Weaknesses</p> <ul style="list-style-type: none"> • History of reluctance among oncology providers to refer patients to palliative care and hospice services. • Confusion within the organization as well as the healthcare system about the differences between palliative care and hospice and the programs currently offered
<p style="text-align: center;">Opportunities</p> <ul style="list-style-type: none"> • MACRA legislation fostering a move towards performance indicators that are more quality, not volume focused. • Building a collaborative relationship with oncology providers 	<p style="text-align: center;">Threats</p> <ul style="list-style-type: none"> • Multiple competing services in the area that • The cost saving analysis not substantiating value • Oncology providers not being receptive • Too rapid of program growth leading to inadequate staffing and resources

Date Request Submitted: Initial Draft 10/18/17

Date by which this data is needed by requestor(s): Wednesday, December 13, 2017 (pending IRB)

Data Requestor(s): Katelyn Gettel, GVSU, Doctor of Nursing Practice (DNP) student

Intent: DNP project – Examining new CMS initiatives and changes to reimbursement with Oncology quality measures. Data will be summarized in aggregate (there is no intent to share individual patient data).

Timeframe of data being requested: A retrospective 12-month snapshot sometime in CY2017 (with the ability to stratify by individual month as well)

Base Population Definition: All adult Oncology patients seen/ treated at the [REDACTED] Cancer Center (outpatients) in [REDACTED] location with the ability to stratify by cancer diagnosis/primary site of cancer.

Type of Metric or Measure	Metric or Measure Title (column headings within the report)	Definition	Exclusion(s)	Comparisons (National Best Practice, Benchmarks, etc.)	Data Source & Format	Additional Comments and Notes
Operational - Volume	Primary Cancer Diagnosis/Primary Site of Cancer	Desire the ability to sort by specific primary cancer diagnosis/primary site of cancer	Pediatric patients (age 0-17)		ICD-10-CM (diagnosis) coded data	
Process	Total number of patients who received chemotherapy in the last 14 days of life (if deceased)	Total number of patients who received chemotherapy in the last 14 days of life (if deceased)	Pediatric patients (age 0-17)	CMS	Enterprise Data Warehouse (EDW) for retrospective data -	CPT procedure code.
Process	Total number of patients who had more than one ED visit within the last 30 days (prior to death, if deceased)	Total number of patients who had more than one ED visit within the last 30 days (prior to death, if deceased)	Pediatric patients (age 0-17)	CMS	Enterprise Data Warehouse (EDW) for retrospective data -	
Process	Total number of patients who had an ICU admission at any time in the 3-month timeframe being queried	Total number of patients who had an ICU admission at any time in the 3-month timeframe being queried	Pediatric patients (age 0-17)	CMS	Enterprise Data Warehouse (EDW) for retrospective data -	
Operational - Volume	Total number of patients who were admitted to Hospice and LOS on Hospice.	Total number of patients who were admitted to Hospice and LOS on Hospice.	Pediatric patients (age 0-17)	CMS	Enterprise Data Warehouse (EDW) for	Would like ability to stratify by which Hospice, [REDACTED] Hospice or any

Type of Metric or Measure	Metric or Measure Title (column headings within the report)	Definition	Exclusion(s)	Comparisons (National Best Practice, Benchmarks, etc.)	Data Source & Format	Additional Comments and Notes
					retrospective data -	other area hospices
Outcome or Operational – Volume	Total number of patients who were admitted to a System Hospital	Total number of patients who were admitted to a Delivery System Hospital	Pediatric patients (age 0-17)		Enterprise Data Warehouse (EDW) for retrospective data -	Would like ability to stratify by which Hospital
Outcome	Total number of patients who have expired.	Total number of patients who have expired.	Pediatric patients (age 0-17)		Enterprise Data Warehouse (EDW) for retrospective data – Registry, or State of Michigan Decedent Registry	Would like to know how many died in the hospital and from the State of Michigan Decedent Registry, if possible.

Additional Notes:

Source	Design	Sample	Measurement/Data Analysis	Findings	Limitations	CA dx	Quality Measures
Blechman et al. (2013)	Retrospective chart review	N=69 Pts with metastatic CA admitted to ICU in last 2 weeks of life	EOL quality indicator review	22 reported having an advance directive (22%) however, only 16 were found on chart. 97% did not leave the hospital. 50 (72%) died in ICU, 17 (25%) of patients died in hospital outside ICU, and 2 (3%) were d/c home.	Small sample size. No further characterization of patients beyond "metastatic CA".	Metastatic	AD, ICU admission.
Earle et al. (2004)	Retrospective claims review	N= 28,777 Medicare pts aged 65 and older	Medicare Claims review. Multivariate analysis.	Among pts receiving chemotherapy, 15.7% were still receiving tx at EOL, increasing from 13.8% in 1993 to 18.5% in 1996 (P<.001). Pts with 1> ED visit increased from 7.2% to 9.2% (P<.001). ICU admission w/in 30 days of EOL increased from 8.1% to 9.4%.(P= .009). Use of hospice increased (28.3% to 38.8%, P<.001). However, pts who rec'd aggressive care who entered hospice were more likely to do so w/in 3 days of death (35.6% v 12.1%, P<.001). Greater availability of hospice was associated with less aggressive treatment. No significant association between cancer type/stage and the aggressiveness of care.	Only pts >65. Did not include all CA dx or differentiate disease stage.	Lung (53.1-52.8%)breast (3-3.1%)colorectal (34.1-34.8%), GI.(9.8-9.1%). From 1993-1996. Stage at Presentation Local (9.4-9.0%) Regional (22.8-23.2%) Distant (67.8-67.9%)	Chemotherapy at EOL, ED visits w/in 30 days EOL, ICU admission, use of hospice, LOS on hospice
Green et al. (2016)	Systematic review	12 studies of ED pts, 7 studies were exclusively CA pts.	Empirical studies	Most common CA dx associated with ED visits: Lung, bowel, breast, prostate, & esophageal.	Did not specify what other CA dx were studied or stage of disease. No timeline from ED visit to EOL.	Lung, Bowel, Breast, Prostate, Esophageal	ED visits
Henson et al. (2016)	Mortality Follow back survey	N=681	Analysis of pooled data from 2 mortality follow back surveys	29.7% experienced 2 or more ED visits, 17.1% spent > 30 days in the hospital, & 37.9% died hospitalized. Pts w/ prostate or hematologic were more likely to experience aggressive care (adjusted OR 4.36, 95% CI 1.39-13.70 and 4.16, 95% CI 1.38-12.47). Patients who had >5 GP visits, community nursing, or contact with CBPC were less likely to experience aggressive EOL care (AOR 0.27, 95% CI 0.15-0.49).	Inherent limitations of follow-back design	Prostate & Hematologic	Aggressive EOL care Defined as: 2 or more ED visits in last 30 days of life, Greater than or equal to 30 days in the hospital, or death in the hospital.
Mathew et al. (2017)	Retrospective cohort	N=274 pts with metastatic breast CA tx at university CA Center deceased between 2010-2012	Chart review, Chi Sqaure, Fisher's exact test, Wilcoxon ranks. Multivariate logistic regression	28 (10.2%) rec'd chemotherapy w/in 2 wks EOL& 62. (22.6%) rec'd chemotherapy w/in 4 wks EOL. No difference in baseline characteristics of disease (histology, HR status, HER2 status, CNS disease). However, younger age at metastatic dx and increasing	No account of functional status or QOL	Metastatic Breast CA	Chemotherapy within 2 or 4 weeks of death.

				number of organ systems involved were predictors of both 2 and 4 wk chemotherapy use (age odds ratio 0.94-0.99 & number of organ systems 1.16-1.87).			
Nappa et al (2011)	Control trial	80 incurable epithelial CA pts, 160 control	80 incurable epithelial cancer patients who used the performance Status in palliative chemotherapy questionnaire (PSPC) before palliative chemotherapy (PCT) were compared to 160 controls across 4 cancer centers in Sweden using Chi square and non-parametric Whitney- U test.	No significant difference between PSPC and control in terms of proportion receiving PCT in last month of life. Absolute proportion of patients receiving PCT during last month of life was 25% (PSCP 23.8%, control 26.3%, p=0.68). Most common cancers were colon 23 PSCP 25 control (28.8%,28.1%), Breast 14 PSCP 27 control(17.5%, 16.9%), Upper GI 20 PSCP 41 control (25%, 25.6%)., Urologic 9 USPC 17 control (11.3%, 10.6%), Lung 3 PSCP 8 control (3.8%, 5%). Performance status was documented for 48% of patients with no statistical difference between groups.	Poor documentation of functional status, mismatch in control vs interventional groups size.	Colon, Breast, Upper GI, Urologic, Lung,	Chemotherapy within 30 days EOL
Pacetti et al. (2015)	Retrospective chart review	N=2164 with advanced CA who rec'd chemotherapy from 2010-2012	Descriptive statistic analysis	162 (24.3%) received chemotherapy within 30 days EOL. Median ECOG status 2. All with metastatic dx. Lung CA 49(30.3%), G.I 31(19/2%), Pancreatic 25 (15.4%), ORL 14(8.6%).	Excluded hematologic malignancies, small sample size	Metastatic Lung, GI, Pancreatic, ORL	Chemotherapy within 30 days EOL.
Stuver et al (2016)	Retrospective cohort	N= 674 Pts who died from 7/2010-12/2012 insured by BCBS of MA	Claim data. Chi square	Overall 14.7% > 1 ED visit in 30 days EOL, 15.4% had ICU admission w/in 30 days EOL, 12.2% expired in ICU, 10.4% received chemotherapy w/in 14 days EOL, 59.9% admitted to hospice, 13.6% admitted to hospice for <3 days for a median stay of 14 days. Hematologic malignancies were associated w/ ICU admission, chemotherapy w/in 14 days EOL, more likely to die in the ICU, & less likely to be enrolled in hospice (P<.001). Gynecologic CA were more likely to experience >1 ED visit w/in 30 days EOL (P<.04).	Potential inaccuracy of claims data	Breast, GI, GU, Gynecologic, head/neck Hematologic , Thoracic	ED visit 30 days EOL, ICU admission 30 days EOL, Chemotherapy 14 days EOL, Hospice admission, Hospice LOS, Death in ICU

Appendix I
Eastern Cooperative Oncology Cooperative (ECOG) Tool

ECOG	Description
0	Fully active, able to carry on all pre-disease performance without restriction.
1	Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work.
2	Ambulatory and capable of all selfcare but unable to carry out any work activities. Up and about more than 50% of waking hours.
3	Capable of only limited selfcare, confined to bed or chair more than 50% of waking hours.
4	Completely disabled. Cannot carry on selfcare. Totally confined to bed or chair

Toxicity and response criteria of the Eastern Cooperative Oncology Group. Reprinted from "Toxicity and Response Criteria of the Eastern Cooperative Oncology Group". By Oken, M.M., Creech, R.j., Tormey, D.C., Horton, J., Davis, T.E., McFadden, E.T., & Carbone, P.P, 1982, *American Journal of Clinical Oncology*, 5, 649-655. Copyright The Eastern Cooperative Oncology Group, Robert Comis, M.D., Group Chair

<u>Dependent Variables</u>	Measurement
1. > 1 Emergency Room visits within 30 days of death	Y/N
2. ICU admission within 30 days of death	Y/N
3. Advance Directive Completion Status	Y/N
4. Expire without admission to hospice	Y/N
5. Hospice LOS <3 days	Y/N
6. Chemotherapy within 14 days of death	Y/N

Independent Variables

Breast

Lung/Bronchus

Prostate

Colon/Rectum/Esophageal

Renal/Bladder

Hematologic

Gynecologic

Pancreas

Gender

Age

Metastasis (defined as spread beyond initial organ system and local lymph nodes)

Receipt of Palliative care services (as inpatient or outpatient)

ECOG score (0-4)

Appendix K
Budget for Project

Table 1 Budget for Project

Personnel or Item	Hourly Wage X Projected Time	Cost of Item
Chief of Department	1,200	
Manager of Program Development	400	
APRN	450	
DNP Student	8,400	
Laptop		1200
Total	6350	1200
Net	5,150	

Appendix L
 Timeline for Steps of Program Development

Chart review/ data collection 1/26/18	Referral criteria based on regression analysis 2/23/18	Marketing/educational for referring providers 2/23/18	Present toolkit to stakeholders 3/9/2018	Upload to 3/6/18 Scholarworks©
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Cost savings analysis 2/23/18	Protocol for implementing toolkit 2/23/18	Sustainability plan 2/23/18	Defend final toolkit 3/9/18
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Appendix M
Organization Letter of Support

To whom it may concern,

This letter is to verify that GVSU DNP student, Katelyn Gettel is completing her scholarly project entitled “Toolkit to Improve Oncology Referrals to Palliative Care” at [REDACTED]. She will be working with Dr. Simin Beg as her organizational mentor. The project will be complete in April of 2018.

We appreciate the opportunity to host a DNP student and will provide Kate with the information and resources that she needs to complete her project.

Sincerely,

[REDACTED], RN, BSN

Manager of Business and Program Development

Appendix N
Quality Measure Performance

Table 2 MIPS Scorecard

Category	Weight	Possible Points	Estimated Points	Possible Score	Estimated Weighted Score
 Quality	60%	60	44.94	60	44.94
Improvement Activities	15%	40	40	15	15
Advancing Care Information	25%	100	100	25	25
TOTAL	100%	200	184.94	100	84.94

Table 3 Current Performance with Assigned Points

Sample Size	Measure Number	High Priority Oncology Measure	Current Status	Target	Estimated Points
45	453	Proportion of patients who received chemotherapy in last 14 days of life	8.89%	*Estimated <*20%	10
45	454	Proportion of patients who died from CA with >1 ED visit within last 30 days of life.	11.11%	*Estimated <10%	8.89
45	455	Proportion of patients admitted to ICU in last 30 days of life	11.11%	*Estimated <10%	8.89
45	456	Proportion not admitted to hospice	33.33%	*Estimated <20%	6.67
45	457	Proportion admitted to hospice for less than 3 days	33.33%	*Estimated <20%	6.67
160	047	Proportion without Advance Directive in chart	61.88%	*Estimated <20%	3.82

*percentiles for these quality measures are not yet established

Appendix O
Cost Saving Analysis

Table 4 Payment Adjustment Key

Final Score	Payment Adjustment	Estimated Payment Adjustment
Additional performance threshold >70 points	<ul style="list-style-type: none"> • Positive Adjustment • Eligible for additional adjustment for exceptional performance bonus 	100
4-69 points	<ul style="list-style-type: none"> • Positive Adjustment • Not eligible for additional adjustment for exceptional performance bonus 	75
Performance threshold= 3 points	<ul style="list-style-type: none"> • Neutral Adjustment 	25
0 Points	<ul style="list-style-type: none"> • Negative payment adjustment of -4% • 0 points- does not participate 	0

Table 5 Estimated Cost Adjustments Based on Performance

Cost of Service	Adjustment 2019 +/- 4%	Adjustment X Current performance 2019 (5 patients)	Adjustment 2022 +/- 9%	Adjustment X current Performance 2022 (5 patients)
ED visit \$1,000	\$40.00	\$200.00	\$90.00	\$450.00
ICU Admission \$2,130/day	\$85.20	\$426.00	\$191.70	\$958.50

Appendix P
Description of Total and Deceased Population

Table 6a Total Population Age (N=160)

	N	Mean	Standard Deviation
Age	160	67.43	11.36

Table 6b Deceased Population Age (n=45)

	N	Mean	Standard Deviation
Age	45	68.09	13.08

Table 7a Gender of Total Population (N=160) Table 7b Gender of Deceased Population (n=45)

Gender	Frequency	Percent
Male	59	36.88%
Female	101	63.13%

Gender	Frequency	Percent
Male	25	55.56%
Female	20	44.44%

Table 8a Primary Cancer Total Population (N=160) Table 8b Primary Cancer Deceased (n=45)

Primary	Frequency	Percent
Bladder	3	1.88%
Breast	52	32.50%
Cholangiocarcinoma	1	0.63%
Colon	19	11.88%
Esophageal	4	2.50%
Gynecologic	6	3.75%
Hematologic	22	13.75%
Liver	3	1.88%
Lung	33	20.63%
Pancreatic	3	1.88%
Prostate	6	3.75%
Rectal	4	2.50%
Renal	4	2.50%

Primary	Frequency	Percent
Bladder	2	4.44%
Breast	3	6.67%
Cholangiocarcinoma	1	2.22%
Colon	7	15.56%
Esophageal	4	8.89%
Gynecologic	2	4.44%
Hematologic	3	6.67%
Liver	1	2.22%
Lung	15	33.33%
Pancreatic	4	8.89%
Prostate	3	6.67%

Table 9a Metastasis Total Population (N=160)

Metastatic	Frequency	Percent
No	94	58.75%
Yes	66	41.25%

Table 9b Metastasis Deceased (n=45)

Metastatic	Frequency	Percent
No	9	6.82%
Yes	41	93.18%
Frequency Missing = 1		

Appendix P
Description of Total and Deceased Population

Table 10a ECOG Total Population (N=160)

ECOG	Frequency	Percent
0	91	56.88%
1	51	31.88%
2	11	6.88%
3	7	4.38%

Table 10b ECOG Deceased (n=45)

ECOG	Frequency	Percent
1	6	13.33%
2	23	51.11%
3	10	22.22%
4	6	13.33%

Table 11a Palliative Care Total (N=160)

PC	Frequency	Percent
No	150	93.75%
Yes	10	6.25%

Table 11b Palliative Care Deceased (n=45)

PC	Frequency	Percent
No	25	55.56%
Yes	20	44.44%

Appendix Q
Recommendations for Referring Oncology Providers

All patients with a life limiting illness should be considered for referral to palliative care services. Particularly those patients who:

- Have advanced disease (metastasis) or locally aggressive disease
- Have failed first line therapy
- Have a low functional status ECOG ≥ 2
- Have a need for goals of care discussion or advance care planning
- Have had multiple ED or inpatient admissions for uncontrolled symptoms

Appendix R
Predictors of Quality Measure Performance

Table 12 Deceased Patients Predictors of Outcome Performance (n=45)

Independent	Dependent	P-value	Test	Significant
Gender	AD	0.9465	Chi-Square	No
	ED	0.3577	Fisher's	No
	ICU	0.2799	Fisher's	No
	Hospice	0.6714	Chi-Square	No
	Hospice LOS < 3 days	0.0222	Fisher's	Yes
	Chemo w/in 14 days of death	0.1913	Fisher's	No
Metastatic	AD	0.3443	Fisher's	No
	ED	0.7460	Fisher's	No
	ICU	0.6900	Fisher's	No
	Hospice	0.2299	Fisher's	No
	Hospice LOS < 3 days	0.2209	Fisher's	No
	Chemo w/in 14 days of death	0.7460	Fisher's	No
PC	AD	0.0189	Chi-Square	Yes
	ED	0.3577	Fisher's	No
	ICU	0.0435	Fisher's	Yes
	Hospice	0.0897	Chi-Square	No
	Hospice LOS < 3 days	0.0823	Fisher's	No
	Chemo w/in 14 days of death	0.3087	Fisher's	No

Table 13 Two Sample t-test Deceased Patients Age as Predictor of Outcome Performance(n=45)

Independent	Dependent	P-value	Significant?
Age	AD	0.7906	No

Table 14 Logistic Regression Predictors of Advance Directive in Total Population (N=160)

Predictor	P-value	Significant?
Gender	0.6144	No
Primary	0.9873	No
Metastatic	0.7008	No
ECOG	0.5690	No

Table 15 Two Sample t-test Predictor of Advance Directive using Age Total Population (N=160)

Predictor	P-value
Age	0.0033

Appendix S
Implementation of Toolkit Utilizing PARIHS Framework

Table 16

Concept	Action	Time
Evidence		
Research	Literature review summarizing benefits of incorporating palliative care into oncology care, facilitators and barriers to integration of palliative care in to standard oncology care, and grey literature regarding upcoming reimbursement changes.	10/2017
Clinical experience	Organizational Assessment included review of referral statistics and interviewing administrative and clinical palliative care staff members and demonstrated low number of oncology referrals to palliative care.	9/2017
Local information	A retrospective chart review was completed revealing data about current oncology quality measures in need of improvement.	1/2018
Context		
Culture	Define current values: Providing the best care possible to patients with life limiting illnesses. Resources allocated to growth and development was established in organizational assessment (Currently hiring physicians and RNs, new care choices and CBPC program).	9/2017
Leadership	Vertical chain of command is well established. Both medical director, manager of practice development, and administrative VP are devoted to organizational values as established in organizational assessment.	9/2017
	Current DNP student will service as “champion” for the toolkit followed by another DNP student. Strong support for DNP students within the organization.	5/2018
Evaluation	Success of current project will be measured by acceptance of toolkit.	2/2018
	Implementation of toolkit success will be measured by comparing pre and post oncology referral statistics and quality measure performance	1/2019
Facilitation		
Purpose	The purpose of this toolkit is to promote incorporating evidence based standards into practice (incorporation of PC into standard oncology care). It will be important that this is emphasized in presentation to stakeholders and in communicating with referring providers.	2/2018-ongoing
Roles	APPs and physicians need to provide evidence based palliative care that promotes patient autonomy and ultimately high quality measure performance. This will need to be established during presentation to stakeholders and reinforced periodically. Palliative care staff members should also be encouraged to foster professional relationships with referring oncology providers, as ease of collaboration was an identified barrier in the literature.	2/2018-ongoing
Skills/ Attributes	Marketing Skills: Marketing tools will be produced and distributed. Giving Meaning: Reinforcing the value in both cost savings and quality performance. Disseminating results of implementation.	2/2018 2/2018-ongoing

Appendix T
Steps for Implementation of Toolkit

1. Present toolkit to organizational stakeholders on 2/16/2018
2. Present toolkit to palliative care clinicians on 2/22/2018
3. Await permission from hospice and palliative care manager of practice and development to disseminate marketing/educational materials to referring providers. Note, this will likely be after the new EMR regional go-live (April-May of 2018) and after the posted FTEs for new physicians and nurses have been filled
4. Disseminate marketing and educational tools to referring providers at downtown campus estimated 9/2018
5. Change champion (either volunteer clinician or next DNP student) participate in rounds at hospital with palliative care team to monitor for any questions or feedback using palliative care staff feedback form
6. Collect post implementation data 12/2018 utilizing referral tracking table and quality measure performance tracking table
7. Evaluate post implementation data. If there is improvement in number of oncology referrals proceed to step 8. If no improvement in referrals, proceed with evaluation of referring providers' response to the materials using referring provider feedback form, modify as necessary and return to step 4
8. Disseminate marketing and educational tools to referring providers at regional campuses with access to palliative care services
9. Repeat steps 5-7.

Appendix U
Marketing and Educational Material

Comprehensive Medicare and Medicaid Reimbursement Changes coming in 2019 focus on quality measure performance. There are 6 new high priority oncology diagnoses related to end of life care.

- Proportion of patients with a completed Advance Directive
- Proportion of patients admitted to hospice for less than three days
- Proportion of patients admitted to intensive care in the last 30 days of life
- Proportion of patients who died from cancer without being admitted to hospice
- Proportion of patients who received chemotherapy within 14 days of death
- Proportion of patients who died from cancer with more than one emergency department visit in the last 30 days of life (CMS, 2017).

Considering palliative and supportive care?

In an analysis of 45 deceased patients treated at ***** patient age, primary cancer diagnosis, extent of disease, and functional status were not associated with quality measure performance.

Palliative and Supportive Care

Was **significantly** associated with advance directive completion (60% vs 40%, $p=.0189$)

Was **significantly** associated with lower ICU utilization in last 30 days of life (0% vs 100%, $p=.0435$)*

* limited by small sample size

Appendix V
Palliative Care Staff Member Feedback Form

1. The marketing and educational materials have led to increased awareness about palliative care referrals among oncology providers.

Strongly disagree Disagree Neutral Agree Strongly agree

2. I feel comfortable giving the materials to referring providers who have not already received them.

Strongly disagree Disagree Neutral Agree Strongly agree

3. I feel comfortable discussing or answering questions about the materials with referring providers.

Strongly disagree Disagree Neutral Agree Strongly agree

Appendix W
Referring Provider Feedback Form

1. The marketing and educational materials have increased my awareness about what value palliative care can bring to my practice

Strongly disagree Disagree Neutral Agree Strongly agree

2. The marketing and educational tools have improved my ability to talk with my patients about a palliative care referral.

Strongly disagree Disagree Neutral Agree Strongly agree

3. I believe that incorporating palliative care may improve my end of life quality measure performance

Strongly disagree Disagree Neutral Agree Strongly agree

4. The materials have led me to change my referral practices

Strongly disagree Disagree Neutral Agree Strongly agree

