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Post Discharge Follow-up Telephone Calls for Patients who Received Hospital Based Palliative
Care Services to Improve Quality of Care and Outcomes: A Pilot Study

Katherine Adams

University of New Hampshire, Durham

Faculty Mentors: Raelene Shippee-Rice PhD, RN & Joanne Samuels, PhD, CNL, RN

Practice Mentor: Jill Hunter, MSN, APRN, ACHPN

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Abstract

There is a rising number of patients with chronic health conditions concurrent with an increasing number of hospital readmissions within 30 days and emergency department visits. Predominantly based in acute care facilities, palliative care services have been effective in improving the quality of life in patients with chronic health conditions. However, the largest population that could benefit from palliative care services is community based in the home setting. The purpose of this project was to implement and evaluate follow-up telephone calls made in addition to visiting nursing (VNA) services to detect in early decline in patients who have received in-patient palliative care services compared to a 12-month retrospective analysis of a mirror population. Five telephone calls were made over a 30-day time frame using the palliative performance scale as the method of measurement to augment VNA services with an additional layer of monitoring for early detection of decline. A 12-month retrospective analysis of a mirror population was performed for baseline comparison. Emergency department (ED) visits, 30-day hospital readmissions, hospice admissions, and hospice lengths of stay were the methods of outcome. One participant was included in the implement telephone calls for inconclusive results. While, the retrospective data populations of 45 patients accounted for 141 hospitalizations, 71 30-day hospital readmissions, 65 ED visits, 15 hospice admissions, and an average hospice length of stay of 58.3 days. Patients who receive palliative care services in the hospital would benefit from the extension of in-person palliative care into the home setting for better symptom management and advanced care planning to improve quality of care and outcomes.

Keywords: Palliative care, follow-up telephone calls, 30-day readmissions

Post Discharge Follow-up Telephone Calls for Patients who Received Hospital Based Palliative Care Services to Improve Quality of Care and Outcomes: A Pilot Study

Introduction

Problem Description

Over the past several decades, the complexity and chronicity of patient medical illnesses has increased. In response, health care has progressed with the continued advancement of medications, interventions, and the vast understanding of the disease process. Palliative care services have become an integral part of the chronically ill patient's hospital care. The World Health Organization ([WHO], 2018) defines palliative care as:

Palliative care is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial and spiritual. (WHO, 2018, para 1)

The focus of palliative care to enhance patient comfort and quality of life by relieving symptoms and preventing complications in turn reduces patient stress, caregiver burden, improves functionality, promotes autonomy, and decreases suffering ultimately improving patient outcomes (Miller, 2015). Palliative care providers include physicians, advanced practices nurses, registered nurses, chaplains, and social workers.

The traditional and most prevalent setting for palliative care services is hospital based. The availability of hospital based palliative care services has increased in response to the rising prevalence of patients with chronic and serious illnesses needing expert care to manage disease processes and improve quality of life. In 2012, approximately half of all adults in the United

States, 117 million people, had at least one chronic health condition (CDC, 2018). The number of patients with at least one chronic illness is expected to increase to 157 million Americans by 2020 (National Health Council, 2014). The Center to Advance Palliative Care ([CPAC], 2018c) reported that six million Americans could benefit from Palliative care services. Patients with chronic illness often require increased access to healthcare to improve quality of life and maintain functionality by persistent adherence to therapeutic regimen in order to alleviate and manage symptoms and prevent crises. The CPAC (2018a) reported that the number of palliative care programs in hospitals with at least 50 beds within the United States has increased 125.8% from 2000 to 2008 and is expected to continue to expand. However, once a patient is discharged from the hospital, there is often limited continuity of the care plan established with palliative care due to the current framework of care delivery. The continuity in the plan of care provides consistency for the patient, family, and health care team to determination of effective medications regimens and interventions, recognize early signs of decline, and increase advanced care directive discussions.

The largest population of chronically ill patients lives in the community outside of the acute care setting of the hospital and hospice care, where palliative care is less available. The most recent palliative care report card by CPAC (2015) calls for an integration of palliative care out of the hospital and into the community to deliver the much-needed quality, specialized care in long term care facilities (LTC), assisted living facilities (ALF), and home care. According to the National Palliative Care Registry ([NPCR], 2018), 47% of patients who receive palliative care in the hospital are discharged to a home setting. While patients may have visiting nurse (VNA) services at home, fewer resources are available compared to other discharge destinations: skilled nursing facilities (SNF) 25.9%, inpatient hospice 13.7%, and LTC 6.4% (CPAC, 2018b).

Additionally, the goal of VNA services or home care is to rehabilitate the patients, restoring function to the highest possible levels. These goals are not consistently in line with palliative care goals.

Palliative care involves frequent evaluation and revising of patients' goals due to the chronic, progressive nature of disease processes indicating an increase in difficulty to achieve these goals. Patients who receive palliative care patient often have the goal to achieve the highest possible level of health and function but requires specialized care due to the flux in patient's condition and need for fluctuating symptom management. The differences in specialized services that patients who receive palliative care versus visiting nursing services impacts the ability to meet these goals. Thus, the limited access palliative care outside of the hospital, created gaps and decreases the quality of care of these patients. The diminished continuity of care and follow up may be attributing to poor outcomes, unnecessary emergency department (ED) visits, unwanted readmissions to the hospital, delay in hospice admissions, and short hospice lengths of stay. "Without reliable and quality palliative care support in the community, patients and families will continue to resort to 911 calls, emergency departments and hospitals when the next crisis strikes" (CPAC, 2015). There is limited literature available about home based palliative care and continuity of hospital-based palliative care into home-based palliative care.

The expertise of palliative care teams is integral in assisting the patient and family in the approach to the end of life by facilitating the goals of care including uncomfortable and crucial conversations. Attending to a patient's goals by including the patient and involved decision makers' understanding of the progress of the disease and illness can improve patient quality of life by reducing unwanted hospital readmissions and emergency room visits, provide support for transition to hospice care as health status changes, increase admissions to hospice, and increase

hospice days of care. Hospice services are a Medicare benefit to patients whose health condition has declined to a prognosis of six months or less to live. A healthcare provider must certify that a patient has a terminal prognosis under a qualifying medical diagnosis by evaluating functional decline, weight loss or poor nutritional intake, and laboratory data. The goal of hospice services is to increase the patient's comfort but not include curative treatment in the domains of physical, emotional, and spiritual needs. Hospice cares emphasizes quality of life over quantity of life. Since hospice is part of the Medicare insurance benefit, the services can reduce financial burden of families by increasing access to health care and providing additional support services.

According to the National Hospice and Palliative Care Organization ([NHPCO], 2017), the average length of service for hospice patients in 2016 was 71 days of service with a median of 24 days of service. However, the largest percentage of patients, 27.9%, received less than seven days of hospice services (NHPCO, 2017). This indicates that by the limited days of service compared to the intended six-month prognosis that more than a quarter of patients on hospice services expire before reaping the full benefit of hospice care in the end of their lives.

The expectations of insurance companies have also evolved with time as healthcare has advanced and patient conditions have increased in severity. Preventable hospital readmissions is a subject that has elicited increasing focus in the health care industry to avoid unnecessary patient distress, preserve patient and family resources, and decrease the financial impact. Jencks, Williams, and Coleman (2009) identified from October 1, 2003 to December 31, 2004, hospitals with more than 1000 Medicare discharges that 19.6% of the 11,855,702 patients were re-hospitalized in 30 days. The investigators further determined that 34.0% patients were re-hospitalized within 90 days, and 56.1% patients were re-hospitalized within one year (Jencks et al., 2009). In the past decade, the national rate of hospital-wide unplanned readmissions has not

changed much in comparison to the 2003-2004 rate of 19.6% over 15 months (15.68% for 12 months) to the current annual rate of 15.2% (Hospital Care Data, 2018). The unchanged national rate of unplanned readmissions despite improvement in health care and technology has been a motivating factor to improve patient outcomes and prevent hospital readmissions. Most of the diagnoses leading to unplanned hospital readmissions are associated with chronic illnesses and the need for specialized care. The top five conditions at discharge that are associated with the highest 30-day rehospitalization rates, in order of highest to lowest are heart failure, pneumonia, chronic obstructive pulmonary disease, psychoses, and gastrointestinal problems (Jencks et al., 2009). The increased incidence of chronic illness will continue to challenge health care facilities prevention of 30-day readmissions and the quality of care delivered leading organizations to design more effective patient centered post hospital care planning especially for patients discharged home.

Local problem. In 2012, the Center for Medicare and Medicaid Services ([CMS], 2018) began the roll out the Hospital Readmissions Reduction Program (HRRP) as an incentive to decrease patient readmissions to the hospital for similar reasons as the previous admission. This program reduces the reimbursement of both hospitals and health care facilities, such as SNF, for care of patients that require readmission within 30 days of discharge. HRRP has challenged many health care facilities to improve the quality of care provided to patients to not only promote better outcomes but also to prevent return for similar treatment within 30 days.

Currently, at a local, community based Northeast hospital, in-patient palliative care practice ceases when the patient is discharged from the hospital, often leaving the patient and family with no to minimal follow through on the palliative care team care plan and recommendations. Although patients may have follow-up services with VNA, the agency may

not have nurses with palliative care experience or expertise. For example, at a local VNA, to be referred to as MVNA, there is only one Registered Nurse (RN) with training on hospice and palliative care. The nurse leads the collaborative care program at MVNA. The program consists of the nurse accompanying a home health nurse on one home visit to educate the patient and, if applicable, the family on hospice care and the associated benefits with the aim of increasing hospice admissions. Outside of this one RN, no other health care provider making home visits is trained or certified in palliative care.

The palliative care team at the local, community hospital noticed trends, without supporting data that patients who received palliative care services during their hospital stay were experiencing readmissions to the hospital within 30 days of discharge, frequent ED visits, limited hospice admissions, and short length of stay on hospice. These poor patient outcomes may be attributed to the limited access to the needed specialized care due to the chronicity in condition requiring continuity and frequent care plan revision. The specialization of palliative care is outside the expectations and expertise of home health nursing.

To augment the resources of MVNA, the palliative care team based in the local, community hospital is to initiate an advanced hospice and palliative care nurse practitioner (ACHPN) driven in-home follow-up post hospital discharge supportive care program. The patients who received palliative care services during their hospital stay and are discharged to the home setting with MVNA services on the collaborative care program would receive in-person ACHPN follow up visit(s). The patients who would receive the ACHPN follow up would be part of the collaborative care program at the discretion of the discharging local, community hospital palliative care team. Initially, a visit would be conducted within 72 hours of discharge and at additional intervals determined by the ACHPN. The purpose is to bridge the gap between

inpatient and outpatient palliative care establishing continuity of care and thus improving the quality of care delivered. The aim is to bridge a portion of the current gap between in-patient palliative care services and MVNA services. Improving the quality of care delivered and the patient's quality of life includes identification of patient decline and increasing support services. These care interventions could potentially decrease hospital readmissions and ER visits and increase hospice admissions increasing hospice lengths of stays.

The palliative care team is in the early planning process of the project development. Thus, the aims of, this Doctor of Nursing Practice (DNP) project, to be referred to as the DNP project are to 1) develop a data baseline specific to patient who received palliative care services that will be used for program evaluation and 2) pilot test a telephone follow up call intervention. The purpose of the DNP project will be to establish baseline data to assess the effectiveness of the second part of this study and the future full project by the hospital palliative care team. The phone calls are intended to further validate the need for the transitional service.

Available Knowledge

Discussion of findings. The outcome of patients receiving a palliative care follow up intervention at home post hospital discharge was investigated in a review of the literature (Table 1). The studies included in the review each indicated improvement in quality of patient care delivered while at home through a variety of interventions. Two of the five studies provided measurable improvement in reducing hospital readmission rates (Morrison, Palumbo, & Rambur, 2016; Wong et al., 2016).

Wong et al. (2016) and Morrison et al. (2016) investigated hospital readmission rates, both determined effectiveness of their intervention. Wong et al. (2016) had the largest difference in reduction between the intervention and control group findings at three months at 0.68 (1.10

control group, 0.42 intervention group) compared to Morrison et al. (2016) difference of 0.13 (0.34 control group, 0.21 of intervention group). This is likely due to the characteristics of the control group. The control group in Wong et al. (2016) had no contribution to care. Whereas, the PS control group in Morrison et al. (2016) followed up in home and by telephone with patients. However, the study conducted by Morrison et al. (2016) provided data that APN's had better outcomes as the method of intervention versus physicians in reducing hospital readmission rates (difference of intervention 0.82 and control 0.38) and reducing ED visits (difference of intervention 0.71 and control 0.39). Wong et al. (2016) provided data that the longer that intervention remained in place the lower the readmissions rates (intervention at four weeks 0.21 and 12 weeks 0.42 compared to control at four weeks 0.41 and 12 weeks).

Uitdehaag et al. (2014) provided data that the intervention group of specialist nurse-led home visits were preferable for patient satisfaction compared outpatient clinic visits. The nurse intervention had higher patient satisfaction at both 1.5 months (8.4 versus 7.5) and four months (8.5 versus 7.1). Additionally, the study had a high dropout rate due to death. At 13 months, three patients of the original 70 remained in the nurse-led group and two patients of the original 68 remained in the control group (Uitdehaag et al., 2014). This potentially skews the results in favor of the nurse-led home visit group as patients may have been too ill to physically make it to the outpatient clinic finding more satisfaction in their home setting with continued, convenient access to care. Patient satisfaction rates may also have been skewed by the higher number of visits made by the nurse-led group and the longer amount of time permitted on a telephone call for the same price (15 minutes for nurse-led vs nine minutes for surgeon = €7.65).

The study by Uitdehag et al. (2014) also determined that nurse-led follow up visits were 38% lower in cost per visit when compared to the standardized surgeon-led outpatient clinic

visits (€89.97 vs €148.48). However, when the number of visits were calculated into the costs, the nurse-led follow up method more than double the cost due to the high volume of visits negating the cost-saving aspect (€336.91 vs €144.48) (Uitdehaag et al., 2014). The outpatient control group performed 80 visits (35 in-person visits and 45 telephone calls) compared to the nurse-led group with 255 visits (157 home, 95 telephone) (Uitdehaag et al., 2014). The authors identified that there were higher costs associated with repeated travel costs (€7.88), time costs traveling to home visits (€18.87), time costs at the home visit (€28.82), and nurse-made 15-minute telephone calls (€7.65) compared to the cost of one surgeon-led outpatient visit (€129.00) and surgeon-made 9-minute telephone calls (€7.65) (Uitdehaag et al., 2014).

Fischer, Cervantes, Fink, and Kitner (2015) determined that patient navigators with sufficient training were effective in conducting in home follow up visits in increasing completion of advanced directions, compliance in attending health care system follow up visits, discussing pain management, and increasing hospice length of stay. The study by Fischer et al. (2015) reported there was close to double the length of hospice stay with the use of patient navigators (36.4 days vs 19.7 days), while there was not a significant difference in hospice admissions (seven intervention group vs six control group).

Mitchell et al. (2016) provided data to support the effectiveness in symptom and medication management with in home NP follow up visits. However, this may be skewed favorably for NP since visits were performed only when needed. NP's made 18 patient visits resulting in all 18 patients having a combined 33 prescription updates consisting of 24 medications initiated and nine medication changes. Due to the inconsistent determination of when NP visits would be made, the 100% prescription updates may indicate that NP visits should have been elicited in more patients. While, the number of medication modifications does not

signify effectiveness in symptom and medication management, it does indicate the NP recognized the need for an intervention potentially reducing the risk for unwanted, preventable hospital readmission or ED visit.

Limitations of findings. Three studies had limited inclusion into the study based on patient characteristics (Wong et al., 2016; Fischer et al., 2016; Uitdehaag et al., 2014). While Wong et al. (2016) had data indicating the chosen intervention has an improvement in reducing hospital readmission rates, the population investigated patients only with congestive heart failure (CHF). These results are limited to this specific diagnosis and may not be consistent with the other palliative care diagnoses. Fischer et al. (2015) study included only self-identified Latinos appropriate for palliative care via the CARING criteria. The effectiveness of the intervention of patient navigators is limited to the Latino culture. Also, Fisher et al. (2015) did not include the framework of the patient navigator visits within the study. The study population of Uitdehaag et al. (2014) was limited to patients with non-curative cancer. The results may not be consistent in all palliative care patients due to the specialized physical and psychosocial care aspects of non-curative cancer. The high dropout rate of Uitdehaag et al. (2014) limited confidence in results. The study was further limited due to no delineation in outcomes between in-person visits and telephone call follow-ups (Uitdehaag et al., 2014).

Two of the studies had inconsistent study design (Morrison et al., 2016; Mitchell et al., 2016). Morrison et al. (2016) had differing population size, demographic areas, and frequency and type of intervention indicating the results are unreliable. Mitchell et al. (2016) altered the study characteristics after initiating the project due to low participant enrollment causing inconsistent study protocols and interventions. The study planned to use measurement instruments, but due to the inconsistencies the results could not be determined. The study design

had varying number of SMCC, telephone calls, in person nursing visits, and in person NP visits (Mitchell et al., 2016). These inconsistencies indicate the results are unreliable.

Rationale

The DNP project used the transitional care model (TCM) as the conceptual framework. The TCM began at the University of Pennsylvania as a structure for low-birth-weight infants to be discharged home earlier with APNs follow up (Brooten et al., 1986). The TCM was test with multiple susceptible populations and eventually evolved into a framework of care for chronically ill, high risk patients (Naylor, 2012). The TCM is centered on the relationship between the patient and the APN surrounded by eight components: screening; engaging elder and caregiver; managing symptoms; educating/promoting self-management; collaborating; assuring continuity; coordinating care; and maintain relationships (Hirschman et al., 2015). Evidence has been collected to establish the benefits of using the TCM model to reduce preventable hospital admissions, improve health outcomes, enhance patient satisfaction, and reduce health care costs (Naylor, 2012). The DNP project is in alignment with the TCM outcome to reduce hospital readmission and ED visits and increase hospice length of stay to reduce health care costs, improve quality of care, and enhance patient satisfaction.

Methods

Context

The Northeast based local, community hospital, comprised of 296 beds, was founded in 1890 (EHS, 2018). It is a level II trauma center supporting the city it is in, as well as the surrounding regions (EHS, 2018). The hospital owns a visiting nursing agency, to be referred to as MVNA in the remainder of the paper. The case management department is responsible for supporting patients by advising on care options, coordinating services, and planning discharges.

The hospital supports one of the seven palliative care teams in the state (NHHPCO, 2018). The palliative care team is comprised of three full time physicians, two nurse practitioners, one social worker, and one administrative assistant. The palliative care team provides consults and care predominantly to the in-patient population with approximately 20 to 25 patients on service at a time. Additionally, the providers see patients in SNFs. Over the course of September 1, 2017 to August 20, 2018, the palliative care team provided care to several thousand patients between inpatient and outpatient consultation. Currently, the palliative care team does not provide care to patients in the community outside of the SNF setting.

The current hospital-wide unplanned 30-day readmission rate at the local, community hospital is 15.6%, 0.4% higher than the national average (Hospital Care Data, 2018). It is unknown the percentage of palliative care patients that account for the 30-day readmission rate. It is also unknown if patients who have received palliative care services have unnecessary, preventable ED visits. A portion of the project will consist of a retrospective analysis of patients cared for by the palliative care team over the past one year to establish the baseline.

Intervention

Data were collected in a two-part pilot DNP project. To meet the first aim, extensive analysis of baseline data was warranted to better understand the population of patients who received in-patient palliative care services at the hospital and were discharged home with MVNA services. The second part of the project was to implement APN conducted telephone calls over the span of 30 days upon discharge home with MVNA services. The purpose of the retrospective chart audit portion of the project was to determine the baseline to compare the effectiveness of APN conducted telephone calls. The two-parts of the DNP project occurred concurrently.

Retrospective Data Collection. Data were collected retrospectively over the 12 months period of September 1, 2017 through August 30, 2018. The population of interest were those who received a palliative care consult while hospitalized and discharged home with MVNA. Those included in the data collection were patients over the age of 18. Excluded were those admitted to the community hospital for care on the geriatric psychiatric unit. Patients who did not speak and understand English or were mentally incapacitated were excluded.

Determining the retrospective data population. The electronic medical record system used by local, community hospital was EPIC®. Organizational informants relayed that the capability to generate a report of patients that received palliative care services or a report to determine patient discharge locations was limited. Fortunately, the palliative care department administrative assistant was able to provide a monthly billing report of every palliative care consult. The report included the patient's name, medical record number, dates of palliative care services, and billing information. Upon review of the palliative care services report, it did not differentiate patient who received in-patient palliative care services from those who received outpatient consultations. The report also did not differentiate which hospital admission a patient received palliative care services. It was noted that several patients were hospitalized more than once in a month and one of the discharge locations had not been noted.

A master document was created from the monthly reports generated from September 2017 to August 2018 in Microsoft Excel. Duplicate names and billing information was removed. Based on this list, each patient's EMR was reviewed through EPIC® to determine the admission and discharge dates of each hospitalization, the patient's discharge location, if palliative care services were received, and if the hospitalization could be considered a 30-day readmission. The case management discharge note was reviewed to determine the discharge

location. If case management did not have a note, then the nursing discharge note was reviewed and if needed, the healthcare provider discharge note.

APN telephone calls. The intervention of APN telephone calls was piloted in the DNP project. The purpose of the telephone calls was to augment VNA services with an additional intervention to monitor patient status in the home for early signs of decline. The Palliative Performance Scale (PPS) tool was used for quantitative measurement of the patient's status.

Supporting evidence. Based on the evidence extracted from the literature review, the intervention utilized to improve the quality of care and outcomes for patients discharged home after hospitalized with palliative care services in the DNP project is APN conducted follow up telephone calls at set time intervals. The literature did not indicate a difference in patient outcomes for in-person visits compared to telephone follow up calls (Fisher et al., 2015; Mitchell et al., 2016; Morrison et al., 2016; Uitdehaag et al., 2014; Wong et al., 2016). The least invasive intervention of telephone calls was trialed alone to determine effectiveness in improving patient care outcomes. Furthermore, the literature indicated that patients had positive outcomes with an initial follow up contact within 48 hours (Morrison et al., 2016) and recurrent weekly contacts (Morrison et al., 2016; Wong et al., 2016). The intervals of telephone calls were made at 48 hours, 7 days, 14 days, 21 days, and 30 days using measurement instruments to standardized results. See measurement section for details on the measurement instruments. Grounded on the positive results of CNS and NP interventions, an APN conducted the follow up telephone calls (Mitchell et al., 2016; Morrison et al., 2016).

Telephone call description. The telephone calls were initiated by asking the patient informal, open-ended questions, such as "How are you feeling today?" Then more specific questions were asked to complete the PPS tool. A final question was asked "if the DNP student

could notify MVNA of any concerns?” No advice or orders were given to the patient during the phone calls. The phone calls lasted between one and ten minutes. If the patient did not answer the telephone call, a second telephone call was made on the same day. If there was not an answer, the telephone follow-up calls resumed at the next scheduled interval. Voicemails or telephone messages were not left requesting return telephone calls due to inconsistent phones, phone numbers, and times of day the DNP student was able to conduct the telephone calls.

The PPS score was determined and compared to the last PPS. Any decline in the measurement instrument score either from the time of discharge or previous follow up telephone call to the newly calculated PPS score triggered the DNP student to notify MVNA of potential decline in the patient’s condition to initiate an early intervention. MVNA was also contacted per patient request. The community hospital palliative care team was not notified if the patient had a decline as they were not involved in the patient’s care after discharge.

Study of the Intervention

There was one patient included in the implemented intervention between September 1, 2018 and October 31, 2018. While three patients met the inclusion criteria of being discharged home with MVNA services and received palliative care services during their hospitalization, the DNP student was not notified in enough time to meet with the patients prior to discharge. One patient was discharge before the DNP student was notified, while the other patient was to be discharged within 15 minutes. The number of potential participants was also limited to the MVNA stopping referrals due to limited staffing.

The five phone calls were made at the intervals anticipated, at 48 hours after discharge, then 8 days, 16 days, 23, days, and finally 30 days. During the initial phone call, at the 48-hour post discharge phone call, the patient was in the ED seeking care for intractable back pain. While

the patient answered the phone call at 15:48 in the ED, we were unable to communicate due to poor telephone connection. The patient did not answer the phone call at the 9-day post-discharge phone call, on the first or second attempt. The patient did answer the call at the 16 days post-discharge interval. The patient reported that she has been struggling with her health but, trying to remain positive with recurrent urinary tract infections (UTIs) and daily radiation for cancer treatment. She scored a 50% with the PPS tool. A PPS score had not been performed during her in-patient palliative care consult at the hospital, so there was not a score to compare in order to determine if MVNA should be notified. The patient was offered to have MVNA notified and the patient declined. The patient did not answer the 23-day or 30-day post-discharge phone calls on the first or second attempt.

The intervention implementation data was evaluated for statistical significance to determine if follow up telephone calls improved the quality of care and patient outcomes. Due to the participant numbers, statistical significance was unable to be calculated. Patient outcomes that were interpreted were hospital re-admissions rates, the number of ER visits, the number of hospice admissions, and hospice length of stay. Data analysis was conducted to identify the cause and timeline for readmission. Data analysis was performed by the DNP student using Microsoft Excel.

Measures

Determining the retrospective population. The EMR of all patients that were billed for palliative care services were reviewed to determine the retrospective data collection population. During the timeframe of September 1, 2017 to August 30, 2018, 557 patient's records were review for a total of 1,075 encounters (Figure 1). One-hundred twenty-nine encounters were immediately ruled out for the following reasons: 48 patients received palliative care services

outside of the hospital, 30 patients were under the age of 18, 49 patients were on the geriatric psychiatric unit, one patient remained in the hospital for the duration of data collection, and one patient was considered a privacy patient so the record was not reviewed.

The records for the remaining patients were reviewed to determine the admission date, discharge data, hospital length of stay, discharge location, if palliative care services were provided during that same hospital stay, and if the hospitalization was a readmission within 30 days. The remaining 947 hospitalizations were reviewed to determine if palliative care services were provided. This excluded 391 more hospitalizations.

Lastly, the collected data was sorted in Microsoft Excel to determine the discharge disposition of the remaining 556 hospitalizations. Four-hundred ninety-one hospitalizations were excluded from the retrospective population due to location of discharge. It was determined that 214 patients were discharge to SNF, 44 patients were discharged home without VNA services, 89 patients died during their hospital admission, 89 patient were discharged to hospice with 28 going to a hospice house and 61 discharge home with hospice services, 21 patients were discharged home with VNA services besides MVNA, 11 patients were discharged to acute rehabilitation facility, 10 patients were transferred to another acute care facility, seven patients were discharged to assisted living facilities, and six clients were transferred to the GPU.

Retrospective data collection. A full chart review in the EMR was then conducted on the patients identified as meeting the criteria from September 1, 2017 to August 30, 2018. During this period of time, the 45 patients were hospitalized 141 times. Data was collected through existing information in patient EMRs using a Microsoft Excel spreadsheet. The data collected consisted of demographic and hospital admission information. This included: date of each hospital admission and discharge, hospital length of stay, discharge destination and dates of

services if MVNA, date of palliative care consult, quantity of palliative care visits, in-hospital PPS score, code status, completion of advanced care directives, date of birth (DOB), age, sex, admitting diagnosis, past medical history (PMH)/comorbidities, and if the admission was suspected as a 30- day readmission. Any diagnosis that was included in the admission note, discharge summary, or palliative care notes were recorded. Data for ED visits was also collected including date, time, length of stay, and purpose for visit. Race, ethnicity, religion, and marital status were planned to be included, however were not consistently available in the EMR so these pieces of data were not included in the collection process. The 30-day readmission rate was calculated by comparing the number of hospitalizations that occurred within 30-days of another discharge for a similar reason to the total number hospitalizations for the retrospective population.

Intervention data collection. Baseline demographic information about the patient and the hospital stay was gathered from EPIC[®] and compiled into a Microsoft Excel spreadsheet. Data collected included the date of admission, date of discharge, hospital length of stay, date of palliative care consultation(s), in-hospital PPS score(s), discharge destination, number of caregivers at home, code status, completion of advanced care directives, DOB, age, sex, race, ethnicity, religion, marital status, admitting diagnoses, and PMH/co-morbidities. Data was collected on any ED visits, hospital admissions, or hospice admission that occurred during the project.

Additionally, each telephone call was logged into a separate spreadsheet in Microsoft Excel. The spreadsheet included the date, time, and duration of telephone call, the PPS tool, final PPS scorings, changes in PPS scoring, an “other” column, and if MVNA was notified. The purpose of the other column was to record subjective data shared by the participant.

PPS tool. Anderson et al. (1996) developed the first version of the PPS tool as an alteration to the Karnofsky Performance Scale. The Karnofsky Performance Scale uses a similar scoring system to the PPS but, included multiple categories for better accuracy in rating the patient's condition (Anderson et al., 1996). The Victorian Hospice Society (2001) introduced the second version of the PPS, which is now the accepted version. The second version of the PPS tool was the measurement instrument utilized in this DNP project. Utilizing a validated, quantitative measurement instrument ensures that data will be collected in a more objective manner to rate the patient's status upon hospital discharge consistently. While the telephone interviews were discussion oriented, the information obtained from the interviews were numerically scored using the PPS tool (Figure 2).

Tool description. The PPS tool has five categories: ambulation, activity and evidence of disease, self-care, conscious level, and nutritional intake. Each category is scored as one of 11 intervals of 10% that start at 0% indicating death up to 100% as normal activity. Each scale has a definition for every category for clear impartial rating. The higher the score, the better the patient is doing, thus indicating less severe palliative problems. Lower scores indicate poor patient status, thus indicating higher severity in palliative problems. The PPS is currently used by the community hospital palliative care team during consultation as an indicator of the patient's status. By continuing to use the PPS tool, it allows for continuity of tracking patient progress as the patient should already have a baseline score before discharge. Changes in scores will indicate an improvement, stability, or decline in condition from discharge.

Tool validity and reliability. The PPS is a validated, reliable, objective provider rated assessment tool (Cai, Guerriere, Zhao & Coyte, 2018; Grossman et al., 2014; Morita et al., 1999). Utilizing a validated, quantitative measurement instrument ensure that data will be

collected in a more objective manner to rate the patient's status upon hospital discharge consistently. Cai et al. (2018) conducted a study to determine the validity of the PPS tool. From November 17, 2013 to August 18, 2015, 1,472 PPS assessments were completed on 194 participants (Cai et al., 2018). Cai et al. (2018) determined there was a correlation between declining PPS scores and declining patient condition in proximity to death. The study authors also determined patients with an initial PPS greater than 40 had the highest survival rate, followed by PPS scores of 30, and patients with PPS score of 20 had the lowest survival rate.

Morita et al. (2018) conducted a study to determine validity of the PPS tool. From September 1996 to August 1997 and October 1997 to April 1998, 245 patients had 588 PPS assessment completed upon admission and every three weeks by a physician (Morita et al., 2018). Morita et al. (2018) determined that patients with PPS scores of greater than 60 survived longer than patients with PPS scores of 30-50. Patients with PPS score of 10-20 survived the shortest amount of time indicating the validity of the PPS tool (Morita et al., 2018).

Grossman et al. (2014) determined interrater reliability of the PPS tool. A team of four health care providers comprised of one gerontologist, one palliative care physician, and two APNs complete the PPS tool on 120 participants within 24-48 hours (Grossman et al., 2014). Grossman et al. (2014) calculated the unweighted kappa coefficients to be substantial and the weighted kappa coefficients to be almost perfect indicating validated, interrater reliability of the PPS tool.

Analysis

Retrospective data analysis. Descriptive statistics were used to construct outcome measures and to identify gaps in the patient trajectory post discharge. The focus was on identifying patterns in PMH, number of hospital admissions, hospital readmission rates, hospice

admission. The co-morbidities were analyzed in total numbers, in comparison to sex, and by age range. The percentage of palliative care patients that account for the local, community hospital readmission rates, as well as any trends in reason or diagnosis for re-admission was determined. Patient outcomes that were interpreted were hospital re-admission rates, the number of ED visits, the number of hospice admissions, and hospice length of stay. Data analysis was done by the DNP student using Microsoft Excel.

Ethical Considerations

The process of obtaining project approval and Institutional Review Board (IRB) approval from local hospital and the University of New Hampshire occurred in August 2018. The clinical agency approved the project as an expedited review, and the University of New Hampshire Nursing Department approved the project as quality improvement. All patients were protected by following the law of the Health Insurance Portability and Accountability Act of 1996. All patients included in the project were provided with an associated study identification number. Patient information was tracked in the spreadsheets utilizing the study identification number. The list of patient names with associated study identification numbers were locked at the community hospital per the facility policy. All files that contained data gathered in both the retrospective data collection and intervention implementation were password protected to maintain confidentiality. Data was backed up daily on an encrypted USB drive and stored in a locked cabinet in the Palliative Care office at the community hospital. The DNP student's personal laptop was kept either on their person or locked up at the community hospital or the DNP student's home.

The DNP student met with potential project participants in the patient's hospital room. The project was explained in detail and the informed consent was reviewed. Areas that were

reviewed with the patient were the frequency of phone calls including the expected dates, purpose, topics included in the phone calls, when MVNA would be notified, and how to stop the phone calls from occurring. Potential participants had the opportunity to ask questions during this meeting. The participant signed two copies of the informed consent. The patient kept one copy and the other copy was locked in a filing cabinet in the palliative care office. At the time of signing the informed consent, the patient was asked for the best phone number to call and if there was a preferred time of day to be called to better facilitate the phone calls. Participation in the pilot study was voluntary and the participants were able to withdraw at any time for any reason.

Results

Timeline

The project consisted of six phases. All phase from the planning stage to completion with presentation to the clinical agency occurred in the six-month span of June 2018 to December 2018 (Table 2).

Process Measures and Outcomes

Retrospective data analysis.

Demographic information. Results reveal that 45 patients who had palliative care in the hospital were also provided with MVNA services on at least one of their 141 hospitalizations (Table 3). Of the 45 patients, 30 were female (66.7%) and 15 were male (33.3%). Patient ages ranged between 30 and 97. Ages ranged among females 30 to 97 and among males ages 32 and 90. The highest incident of hospital admission consisted of females aged 70-79 and accounted for 12 hospitalizations. This accounted for 22.2% of the total population hospitalizations.

Co-morbidities. Of the 45 patients, 17 patients had anemia, 16 had cancer, 14 had CHF, 13 had chronic obstructive pulmonary disorder (COPD), 12 had chronic respiratory failure, nine

patients had diabetes mellitus (DM), nine had dysthymias, nine had chronic kidney failure, eight had liver failure, and five had a history of pulmonary embolism or deep vein thrombosis (Graph 1). Anemia accounted for the most prevalent diagnoses in females followed by cancer and chronic respiratory failure. While cancer accounted for the most prevalent in males followed by CHF and anemia. For the patient to be included with the diagnosis of anemia, lab results were reviewed for hematocrit and hemoglobin levels below normal parameters by sex.

The other diagnoses considered to be significant to hospitalizations occurred only once in each of the six different patients. Females were affected by fibromyalgia (age 50), pulmonary fibrosis (age 77), and rheumatoid arthritis (age 70). Males were affected by cerebral palsy (age 32), after care of a double lung transplant (age 40), and Chron's Disease (age 56). There were no identified patterns between co-morbidities to sex. However, males were affected at a younger age by diagnoses appropriate to palliative care services.

Hospital admissions and length of stay. Patients had an average length of hospital stay of 6.6 days, which varied by co-morbidity. Patients with a diagnosis of cancer experience a longer average length of stay of 8.2 days. Patients with CKD had the shortest average length of stay of 5.2 days. The average length of stay for the other co-morbidities were anemia 7.5 days, liver failure with 7.1 days, chronic respiratory failure at 6.9 days, COPD 6.8 days, patients with a history of blood clots 6.6 days, DM 5.9 days, and CHF and dysrhythmias at 5.6 days.

Advanced directives. Completion of a code status and paperwork for a durable power of attorney (DPOA) or living will were included in the review of advanced directives. Twenty-eight patients were do not resuscitate (DNR), 10 were full code (FC), two were partial code, four did not have a code status in place, and one patient was unable to decide on code status. Ten of the 28 patients who had a DNR in place completed this order with a palliative care provider. All 40

patients who had an established code status also had advanced directive complete. Five patients did not have a DPOA or living will in place.

Palliative care services. Of the 141 hospitalizations, the patients received palliative care services during 81 hospitalizations for a total of 242 palliative care visits. There was an average of three palliative care visits per patient per hospitalization ranging from one visit and six visits. Patients had an average length of stay of 2.1 days before a palliative care consult was requested. The PPS tool was used in 66 (79.5%) patient palliative care visits for an average score of 50%. The scores ranged from 10% to 70%. Palliative care services were provided in the ED on one occasion, to a patient that was admitted to hospice.

Patients received palliative care services an average of 5.2 days before discharge. However, there was a significant range of time between the same day as discharge and 35 days from discharge, resulting in a large standard deviation. There were three discharges that accounted for significantly longer than the population of 25 days, 26 days, and 35 days. If these three hospitalizations are excluded, then the average length of stay before discharge is 4.2 days and a mode and median of 3 with a standard deviation of 3.8. Approximately one-third (35.8%) of the of the consultations occurred within two days of discharge and 51.9% within three days.

Discharge disposition. The 45 patients were discharged home with MVNA services 95 times (Figure 3). During, the remaining 46 hospitalizations, patients either died during the hospitalization, were transferred to another acute care facility or were discharged home without services, to a SNF, or acute rehabilitation. The average length of service for a patient discharged home with MVNA was 18.7 days. However, only 32 of the admissions to MVNA services were discharged upon meeting VNA discharge criteria for achieving health outcomes. These patients had an average length of services of 34.2 days. The majority of patients ended services through

another route, most often readmission to the hospital. Forty-six patients experienced readmission with an average length of services of 14.8 days before readmission. Fifteen patients transition from MVNA services to hospice services after an average length of 11.5 days of VNA services. Two patients died during MVNA services, one after six days of service, the other after 29 days of service for an average of 18 days.

Hospice. Fifteen patients were admitted to hospice services. Eleven patients were discharge home with MVNA and transitioned to hospice. Whereas four patients were discharged from the hospital directly to hospice services. The average length of stay on hospice was 58.3 days. However, 8 of the 11 patients were on services for less than 60 days (Graph 2). Eight females out of a possible 29 were admitted to hospice for an incidence of 27.59%, while 7 of the possible 12 male patients were admitted to hospice for an incidence of 50%. The average age for a patient to be admitted to hospice was 72.4 years with ages of 53 to 90. Females had the higher average admission age of 73.38 with ages ranging between 53 and 85. Men had a lower average admission age of 71.29 with ages ranging between 55 and 90.

30-day readmissions. Approximately half of the retrospective population experienced at least one hospitalization that could be considered a 30-day readmission. Twenty-four patients accounted for 71 hospitalizations within 30-days (Graph 3). Nine patients had one 30-day admission, while five patients had two, three patients had three, two patients had four, two patients had five, one patient had six, one patient had seven, and one patient had twelve 30-day readmissions. Twenty-one (46.7%) of the patients did not experience a return admission to the hospital, at any time, after receiving initial palliative care consult.

The most common co-morbidity to associated with 30-day readmissions was patients who had a history of PE or DVTs (68.8%). The least prevalent co-morbidity in patients who

were readmitted within 30 days was CKD (26.1%). The other co-morbidities accounting for the 30-day readmission were anemia (64.2%), chronic respiratory failure (51.2%), COPD (40%), dysrhythmias (48.4%), liver failure (48.3%), cancer (46.7%), CHF (43.4%), and DM (37.2%).

ED visits. Of the 45 patients included in the retrospective population, 25 patients had at least one ED visit (55.56% of patients). The 25 patients had a total of 65 ED visits for an average of 2.6 ED visits per patient. There was a diverse range in the number of ED visits per patient. Thirteen patients had one ED visits, five patients had two ED visits, 3 patients had 3 ED visits, and one patient each had four visits, five visits, seven visits, and 17 visits. If the patient with the outlier of 17 visits is removed, then 24 patients account for 48 ED visits for an average of two visits per patient. Seventeen females account for 50 visits and eight males accounted for 15 visits. The majority of the ED visits, 53.8% (35 out of 65 ED visits) occurred within 30 days of a hospital admission. Ten of 35 visits, 28.6%, occurred in-between 30-day hospital readmissions.

Most of the ED visits, 39, occurred during what is considered business hours from 0800 to 1700 when primary care providers and specialists are more readily available. While 26 ED visits occurred during off shift hours from 1700 to 0800 when only on-call healthcare providers are available. The length of ED visit was longer during business hours at 4 hours and 29 minutes, whereas the ED visits that occurred in the off shift lasted 3 hours and 41 minutes.

Twelve patients presented to the ED for evaluation of shortness of breath (7 during 0800-1700 and 5 during 1700-0800). Twelve patients went to the ED for evaluation after a fall (9 during 0800-1700 and 3 during 1700-0800). Twenty patients went to the ED for reports of pain, five for complains of abdominal pain (4 during 0800-1700 and 1 during 1700 to 0800), 9 for dysuria (3 during 0800-1700 and 6 during 1700-0800), and six for general complaints of pain (5 during 0800-1700 and 1 during 1700-0800). Two patients, one during each timeframe, visited the

ED for reports of malaise. Three patients, all during business hours, went to the ED to rule out a complication, one to rule out a GI bleed and two to rule out a DVT. Two patients went to the ED for a blood transfusion during off shift hours. Three patients went to the ED for to have a rash evaluated (one during 0800-1700 and one during 1700-0800). Two patients went to the ED during the off shift due to a dislodged percutaneous feeding tube. One patient went to the ED during business hours due to alternated mental status. One patient went to the ED three times for reports of suicidal thoughts, (2 during 0800-1700 and 1 during 1700-0800). One patient went to the ED three times during business hours to have a urinary catheter changed. One patient went to the ED twice during business hours to received intravenous (IV) antibiotics when the infusion could not be completed at home due to no IV access (Graph 4)

Implemented phone calls. Over the three-month span of September 1, 2018 through November 30, 2018, the DNP student made five follow up telephone calls to one person from the palliative care offices at the local, community hospital in increments of 48 hours, 9 days, 16 days, 23, days, and 30 days after discharge. In order to complete the 30 days of telephone follow up calls, the last day new participants included in the pilot was November 1, 2018. The APN telephone calls tracked the patient's progress in the home setting using the PPS tool as a quantitative measurement to indicate decline, stagnation, or improvement of the patient's condition. A decline in PPS tool scoring triggered a referral for early intervention by MVNA.

Notification of potential participants. The liaison between the community hospital and MVNA notified the DNP student of potential participants. When the liaison would receive a referral from case management for home services with MVNA, she checked to see if the patient was seen by palliative care during the hospital stay. If so, she would send the DNP student an email indicating to call her for the patient information. The DNP student then called the liaison

for the patient information as to not violate HIPPA by exchanging patient information over unsecured email. The liaison informed the student of the time frame of patient discharge and patient room number. The timeframe of notification was between 15 minutes to an hour of anticipated discharge.

Phone call description. The telephone calls were made to the patient. However, the option was provided to the patient to speak with the family or spokesperson instead. This option was provided to the patient during the signing of the informed consent. The participant declined this option, preferring to speak with the DNP student personally. The phone calls lasted between one and ten minutes.

Intervention data analysis. After analysis of the data set, one patient was identified and chosen for the pilot testing of the telephone intervention. The patient was a 78-year-old, white, female with liver cancer with metastases into the bone. She identified as Catholic. She was married, living with her husband in a house. She completed durable power of attorney paperwork in 2002. Her co-morbidities included essential hypertension, autoimmune hepatitis, urinary retention, and spinal stenosis. The patient received daily radiation for several weeks of the study. The patient did experience recurrent urinary tract infections and were treated with antibiotics.

The patient was hospitalized three times within the three-month span of the project. However, had no other hospitalizations dating back to the September 2017 retrospective timeframe. The patient was hospitalized for four days twice, and one day once for an average hospital admission length of stay of 3.3 days. The patient was hospitalized for the same reason on all three hospital admissions, intractable back pain. One of the three hospitalizations was a 30-day readmission equaling a 33.3% readmission rate. The patient remained at home for 8 days

in between the first and second hospitalization and 35 days in between the second and third hospitalization.

The patient received palliative care services on two out of three hospitalizations. She was hospitalized once before receiving palliative care services. A PPS score was not done on her second admission, however on her third admission, she received a score of 50%. The patient received a total of three palliative care visits, one on her second admission, and two on her final admission. During the palliative care consultation on hospitalization two and three, she declined need to change or update the advanced directives.

The patient was discharged home with no services on her first admission, then was discharged home with MVNA on the second admission. The patient received seven MVNA visits between her second and third hospitalization. The MVNA nurses noted increased swelling and pain on several occasions. However, when a provider was updated, no orders were received, and no changes were made to the plan of care. The patient had one ER visit during the three-month span of the project, in which MVNA was not consulted before the patient sought out treatment. It did occur during business hours (0800-1700) within two days of discharge of the second hospitalizations, seeking treatment for intractable back pain. The patient was treated with medications, advised to see her oncologist, and was sent home.

The patient was not admitted to hospice services and died in the hospital during her third admission. The telephone calls were not helpful in determining the status of the patient at home. Primarily, due to the limited success of speaking with the patient despite seeking out time of day preferences. The nature of the telephone calls was to seek information from the patient. However, it was challenging to perform an assessment over the phone with exclusively subjective information when nursing often heavily depends on reliable, objective data. The

patient was trying to remain optimistic about her health and future and may not have given accurate information. The DNP student was unable to validate the information the patient reported for accuracy, this led to potential unreliable PPS scores.

Discussion

Interpretation

Extensive variation was identified post palliative care and hospitalization in this data set. Data appeared to show that there was no system in place to meet the changing needs of patients who receive palliative care services in the hospital. Patients were discharged to different levels of care without a clear pattern identified. While, there were downward trends in discharges to home with MVNA as patients were hospitalized multiple times and upward trends in discharge to a SNF, a clear gap in adequate patient management was noted. As the number of hospital admissions patients' experiences increased, there were more patients who died during their hospitalization than discharged to hospice.

Eight of the patients discharged home with a MVNA referral were not admitted to the VNA services, most likely due to home bound status. Regulations surrounding admission to the VNA require documentation that the patient will benefit from services in addition to being homebound. Regardless, the fact that the patients were unable to obtain the VNA services that had been recommended by the hospital team for safe discharge indicates ineffective access to services. The VNA is bound by regulations of the governing body and would not have been eligible for payment for the services rendered if the patients had been admitted to services. Thus, there is a gap in the regulations considering six of the eight patients were re-admitted to the hospital within 30-days. The unplanned, 30 day-readmissions could have potentially been avoided with access to services in the community, such as the VNA.

There also seemed to be limited available healthcare resources while receiving VNA services. The MVNA nurses would note assessment findings that warrant HCP notification and would take the necessary steps to notify either the primary care provider or the appropriate specialist. Unfortunately, the nurses were unable to provide in-time, needed care or adjust orders for better symptom management. The nurses would consistently not receive a return call from an HCP during the patient visit or even within their shift. Nurses for the next shift or on call, who were not first-hand familiar with the patient visits, were tasked to relate the patient issue to providers. The details of the returned calls were not consistently documented leaving it difficult to interpret outcomes of the update. The limited resources in home health care was a challenge to effective symptom management for palliative care patients, which most likely resulted in patients seeking treatment at the acute care facility for a variety of reason often unnecessary, preventable ED visits.

Many of the ED visits may have been prevented given the current evidence regarding symptom management with qualified palliative care providers. ED visits may also have been prevented if the VNA nurses were adequately supported with additional resources and access to HCPs. For example, a patient went to the ED twice to receive IV antibiotics and two different patients went to the ED to have a percutaneous feeding tube replaced. Additionally, 60% of the ED visits occurred during the business hours of 0800-1700 when many other sources of care are available. It was not consistently documented what the patient's options were for access to healthcare services in both the MVNA and the hospital nurses notes. Often, the nurses would document that the patient was educated to return to ED with any symptoms. Thus, leaving the patient to determine what and when symptoms warranted ED treatment.

Furthermore, the focus of home health nursing is on patient education. This is not in line with palliative care for frequent care planning or symptom management. Often, the nurses documented the education provided, which included basic nursing interventions and medication education that only required the patient to verbalize understanding to be considered effective. While this is in alignment with standard home care services and deemed as an appropriate homecare outcome, it was not beneficial to patients who received palliative care services. The chronic nature of managing identified co-morbidities require more frequent involvement of the HCP for updates and order changes and is challenging, if not impossible to do with limited, untimely access to HCP.

Nurses are influential to patient care and positive patient outcomes. RN's have the ability to critically think, assess, and provide patient education. However, RN's are not documenting these crucial conversations and education in the home with VNA or in the hospital. Gaps in nursing care was noted throughout the documentation regarding advanced directives and patient centered care planning. While nurses do not have the ability to write orders on advanced directive, they are integral in facilitating patient goals and wishes. Advanced directives were not in place for five of the 45 patients. While the consulting palliative care provider did review options with the patient no other member of the health care team documented following up on the topic if the patient declined at that time. Ten of the 40 patients (25%) who completed advanced directives did so with a member of the palliative care team. The remaining 30 patients, had already established advanced directives, not requiring further action.

A shift has been made in EMRs from detailed nursing assessments and note to documenting by exception. This practice leaves many pieces of patient information absent from the chart in order to be time efficient and avoid work arounds. Patient education is not an

exception, but a standard. However, much of the documentation by exception, including the hospital studied only have check boxes on the included education. A designated area for the outcome of the education is not included, which could be considered the most critical part. RNs have a responsibility as a counselor, educator, and caregiver to facilitate conversations on patients' goals. As a major contributor in the care patients receive in the hospital, nurses could be considered the most appropriate member of the interdisciplinary care team to have what is considered an essential topic of review for patients, in particular patients who receive palliative care services.

The care demonstrated by the palliative care team benefitted the patients and the hospital. However, palliative care services were provided to the patient too late in their care to allow for maximum benefit. Morita et al. (1999) reported that patients who had a PPS score of 30-50% survived longer than those who scored less than 10-20% and shorter than those who scored above 60%. The patients who scored 30-50% survived an average of 41 days with a standard deviation of 3.3 (Morita et al., 1999). The average PPS score for the patients in the both retrospective and intervention populations consulted by palliative care was 50%. Based on the survival rates of an average PPS score of 50%, according to Morita et al. (1999), the patients could qualify for hospice services solely on the prognosis of less than six months. Thus, indicating patients were already demonstrating significant symptoms when a palliative care consult was placed and experiencing decreased quality of care. Additionally, 100% of the patients who died during their hospitalization received palliative care services. As well as, 100% of patients that were discharged with hospice services received palliative care services. This indicates that palliative care is seen as a form hospice rather than its own independent specialty.

While patients did benefit from the expertise of palliative care, it is not necessary for palliative care providers to be responsible for end of life orders.

There was limited time for palliative care to provide services to the patients while hospitalized resulting in decreased opportunity for advanced care planning and assisting the patients to complete advanced directives. Thus, ultimately decreasing the effectiveness of the services provided. With an average patient length of stay of 6.6 days, this would leave palliative care with close to a week to provide services and follow up with the patients. However, since there is an average length of stay of 2.1 days before a palliative care consult is initiated, the patients are delayed the access to beneficial services. While, palliative care initiates services on an average of 4.2 days before discharge; they do not see patients on Saturdays and Sunday, resulting in the possibility to provide services on only an average of three days before discharge. Thus, there is limited time for advanced care planning, completing advanced directives, and to implement and evaluate interventions for symptom management. To improve the system process at the local hospital level, the patients would benefit from access to palliative care services expanded into the weekend, as well as improving the time between hospital admission and initiation of palliative care services. Additionally, at a community level, the patients would benefit if the palliative care providers had the ability to continue the care initiated at the hospital into the home. Both of these expansions of palliative services would permit for continuity of care, ease of follow-up, improved compliance in completing advanced directives, and better care planning, and ultimately improved quality of care.

There was a substantially higher readmission rate among patients who received palliative care services during the 12-month retrospective data collection (50.4%) compared to the current hospital wide readmission rate (15.6%). There was no trend identified in the descriptive statistics

as cause in co-morbidities, admission diagnoses, or access to care. However, the majority of the ED visits occurred within 30 days of a hospitalization indicating a precursor to the admission. Palliative care services were not consulted on an ED visit, nor were VNA services set-up. Instead, these services would not be started until after one or more hospitalizations. The hospital outcomes may improve if the ED visits were viewed as a precursor to hospitalization. There is the opportunity to provide palliative care services in the ED. This is a major point of interest, as palliative care services have been effective in contributing to the of admission and readmission rates. Of the patients who received palliative care services, 46.7% were not readmitted to the hospital at any point in the 12-month timeframe.

Many of these patients had been hospitalized multiple times, including 30-day readmissions, before receiving an initial palliative care consult despite of have chronic disease and common palliative care conditions. There is no system is in place for triggering palliative care referrals, including a pathway for patients that have been previously seen by the palliative care team. This is another area where hospital outcomes may improve if a pathway is developed to trigger, regulate, and promote palliative care services.

Gaps in documentation were noted in case management discharge planning. The discharge plan that was enacted “last minute” was often differing than what had been documented in the case management notes leading up to discharge. This left limited time to plan for services to be set up and initiated. There were six patients identified from the case management notes as being discharged home with MVNA, but no referral was recorded in the MVNA system and no care was provided by MVNA. It was also noted in the documentation, that case management would identify a patient as a “code R” (indicating high risk for readmission), but there was no documentation on what was done to prevent or address the high

risk for readmission. The gap in documentation extends past case management into the nursing and HCP notes, as well, indicating no plan for safe transitions of care within the hospital system. Thus, resulting in a high 30-day readmission rate and frequent, preventable ED visits in a population that benefits from the expertise of palliative care.

Limitations

The lack of the initial data set for the retrospective population was a limitation of the project. The implementation of the telephone call intervention could have been improved with the baseline data to use as evidence. For example, the implemented intervention population did not match the anticipated population determined by the monthly participant average of the retrospective population. The retrospective population of 45 patients is equivalent to four projected study participants per month, totaling eight patients for the two-month inclusion window. However, there were only three identified patients, with one actual intervention patient. The timing of the patient discharge to home with MVNA was further evaluated to determine if time of year influenced the number of discharges to MVNA. There were four patients that were discharged home with MVNA service in September 2017 and one in October 2017, indicating that this was not the optimal time of year to trial this intervention. If retrospective trends can be used to predict palliative care patterns, then June and July would be a better timeframe with 26 discharges between the two months.

The pathway and timeframe of notification to the DNP student about pending discharges to MVNA was another project limitation. The inconsistent documentation surrounding the time and location for patient discharge by case management made documentation review by the DNP student an unreliable means to identify potential project participants. With the limited discharge planning, it was unknown who would be discharged to MVNA within a reasonable timeframe.

The MVNA liaison would have to take multiple additional steps in order to notify the DNP student of a project participant, which would include reviewing the patient chart for palliative care services, emailing the DNP student, and then a telephone conversation. This is not practical for sustainability. Additionally, since the MVNA liaison was the final part of the discharge process, she would not often know of patient discharges until the patient was already in the process of being discharged.

There was variability noted in the documentation surrounding the use of the PPS tool scoring in the palliative care consults. Three out of the five providers would consistently use the PPS scoring on the initial palliative care consult to determine the patient baseline condition and subsequent visits to monitor for change. However, two of the five providers did not use the PPS scoring during palliative care consults or visits, therefore not establishing a baseline or a quantitative measurement of patient status in follow up visits. This was a further limitation because the patient that was included in the intervention implementation did not have a PPS score calculated during her initial palliative care visit. Thus, there was not a baseline PPS score to compare to the PPS score determined by the DNP student during the telephone call follow up.

Conclusions

An unexpected barrier to the project was the process of data collection. The limited capability of the EMR to generate reports in EPIC resulted in 100-man hours of data collection. This is a significant limitation hindering the ability of the organization for quality improvement with such substantial time and personnel constraints. The existing flawed system would necessitate hours of data collection, which makes similar future quality improvement projects unsustainable. In a time of evidence base practice, the process of data collection must be streamlined in order to identify gaps, as well as trial and evaluate solutions. This barrier to

timely data collection must be broken to support evidence-based patient centered practice changes.

The interdisciplinary team must be educated on palliative care that includes a referral system to guide the HCPs, who order the palliative care consults, and nurses, who advocate for palliative care consults, on patients who would benefit from the services. The referral system is recommended to revolve around the prevalent, chronic illnesses and to include patients who have been previously seen by palliative care. Both of these criteria have been identified as major sources for 30-day readmissions, preventable ED visits, and missed opportunities of hospice admission. With the late initiation of palliative care in both the hospital stay, as evidence by length of stay before the patient receives the consult, as well as in the patient's disease progression, as evidence by the average PPS score, many patients are not being provided with services that could benefit their quality of care and quality of life. The aim of the interdisciplinary team education would be to increase the number of palliative care consults placed and in a more timely manner. This would not only benefit the patients, but also improve outcomes and quality measures for the hospital.

The process of care planning and symptom management in patients identified as appropriate for palliative care requires improvement. The difficult, crucial conversations as the disease progresses must extend past the responsibility of palliative care providers to the hospitalists, specialists, and nurses. Many of the patients seen by palliative care did not have established advanced directives, which is unacceptable. The healthcare team should consider earlier, and potentially more frequent conversations on hospice increase the access to care, quality of life, and prevent unwanted deaths in the hospital. Furthermore, increasing access to HCPs would benefit the patient who need frequent symptom management that are discharged

home with VNA. Another layer of support such as having a NP available to do home visits to continue the crucial conversations and provide orders may prevent 30-day readmission, unnecessary ED visits, and increase hospice admissions is needed. It would be best to have the support available not only during business hours, but also extend into off shift hours and weekend for optimal results.

The process of documentation in both the hospital and VNA needs to be improved upon. In the hospital, the documentation by exception leaves out many pieces of information that can be used for continuity of care, such as education and its effect. Without the clear documentation, it appears that parts of care were not provided, and is unknown what requires follow up. Furthermore, both the hospital and VNA nurses frequently documented that the patient was educated to return to ED with any symptoms. This is inappropriate and may be contributing to the high number of unnecessary, preventable ED visits. Education should be conducted with both the hospital nurses and VNA nurses to bridge the gap in documentation, as well as provide appropriate resources to the patients. For example, the MVNA has a stoplight tool for CHF that indicates the criteria that the patient is considered green and stable, the criteria that is yellow and the patient should call the MVNA, and the criteria that is red and to call 911. None of the nursing notes from MVNA discussed education done with the patients who had CHF on the use of this tool.

Another potential solution is to collaborate with regulatory agencies to relax the criteria for admission to VNA so that patients on palliative care do not have to meet the existing standards. The patients who have chronic illnesses go through periods of exacerbation and stabilization that either do not get admitted to VNA or cannot be justified to stay on service for

the needed period of time. The additional access to the VNA nurses to assess, educate, and provide support to the patients, may improve outcomes by early identification of decline.

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Appendix A

Table 1 *Literature Review Study Characteristics*

Author, Year Country	Design Type	Characteristics	Sample	Intervention	Comparison	Outcome	Notes/ Comments
Fischer et al. 2015 US	RCT	>18 years of age, self-identified as Latino, spoke either English or Spanish as primary language, and were appropriate for Palliative per the CARING criteria	N=64 Control group n=32, intervention group n =32. 299 eligible per criteria, 235 declined (22% participating rate)	Patient navigators trained for one month (~200 hours) with one-on-one trained based on the Education in Palliative and End-of-Life Care modules, experiential learning with the institute’s inpatient palliative care consult service; home hospice visits; and self-study focusing on advance care planning, pain assessment, and myths and barriers to pain management; and hospice care. 5 navigator-initiated home visits per participant following a pre-established framework. Additional phone calls & visits per available per family request	The 32 patients did not receive navigator visits or in-home support	The 5 visits took on average of 2 months with 31% of participants receive all 5 visits; 81% had at least one visit 34% of intervention group completed a form of advanced directives compared with 13% from the control group. 53 patients had follow up with in the healthcare system with 12 months of discharge- 79% of intervention patients and 54% of control patients had discussion about pain management 18 participated died during the 12-month study follow-up period. Of these 7 intervention participants and 6 control group participants had hospice care. The average LOS for the intervention group was 36.4 days, while the control group was 19.7 days	Details of educational or previous training of navigators not discussed Visit framework not provided

Author, Year Country	Design Type	Characteristics	Sample	Intervention	Comparison	Outcome	Notes/ Comments
Mitchell et al. 2016 Australia	Pilot	Initial aim of 30 with frailty, organ failure, or cancer. Poor recruitment after 2 months expanded to any patient identified by the referring practitioner as the pt having an advanced disease and being at risk for dying in the next 12 months	N=62	NP led with GP support SMCC. Patient & caregiver were invited to attend face-to-face or via videoconferencing. This developed the patient's care plan & allocation of responsibility of tasks then delegated as follow up telephone calls by a nurse, home-visits by a nurse or NP, or a combination of telephone calls and home visits by a nurse	No comparison group	42 of the 62 patients received a home visit totally 101 visits. 33 patients received a phone call totally 169 phone calls NP visited 18 patients Patients & caregivers were interviewed by a research assistant not involved in the care for baseline, then at 1 month and 3 months for results	Varying number of phone calls and visits. Every patient that was seen for a NP visit has a medication change (dosage or new medication) If patients were stable, care planning meetings were not held
Morrison 2016 US	Retrospective, descriptive study Pre-post single-patient design without controls	CNS- Small rural community setting with care of any of the 6 PCP's in the area. Excluded-severe dementia, hx of behavioral health, LTC. Physician (PCP)-metropolitan area. Pt of any PCP in surround community. Excluded: home health, hospice, LTC. Patient who died were excluded in data	N=138 CNS n=98 Physician=40 *32 patients died during intervention	CNS-led transitional care model. Home visits in 24-48 hours. Then weekly x4, every two weeks until discharge (approx. 2-3 months)	Physician specializing in palliative care. 1-19 home visits made per patient, averaging 3 visits per patient. PCP office as point of contact, available only Monday-Friday.	CNS- mean number of hospitalizations- before intervention 1.03 per pt in 120 days prior, after 0.21. Mean ED visits per patient 0.93 preintervention, 0.22 postintervention. PCP- mean number of hospitalizations- before intervention 0.72 per pt in 120 days prior, after 0.34. Mean ED visits per patient 0.67 preintervention, 0.28 postintervention.	Inconsistent study design. Diverse population size, and demographic/ geographic area Patients did not have to be previously hospitalized to receive service.

Author, Year Country	Design Type	Characteristics	Sample	Intervention	Comparison	Outcome	Notes/ Comments
Uitdehaag 2014 Netherlands	Randomized Study	<p>Patients were eligible when a multidisciplinary panel concluded that a curative modality or disease modifying anti-tumor therapy was no longer possible</p> <p>Excluded were patients who were admitted to a nursing home, hospice, could not be followed by a physician at the outpatient clinic, or were unable to understand Dutch</p>	<p>N= 138 (68% of the eligible 204)</p> <p>Nurse-led, n=70 @ initiation. At 13 months n=3</p> <p>PCP, n=68 at initiation. At 13 months n=2</p>	<p>Nurse-led home visits by a specialist nurse.</p> <p>Follow up at 14 days, the monthly up to 13 months or death. If necessary, telephone contact was possible.</p> <p>More frequent visits were made to evaluate effect of treatment if increase symptoms</p>	<p>Standardized follow up by surgeon at outpatient clinic.</p> <p>Follow up at one month, then every two months up to 13 months or death.</p> <p>If pt was unable to come to visit, telephone was available</p> <p>More frequent visits were made to evaluate effect of treatment if increase symptoms</p>	<p>268 visits made by nurse leg- 157 home, 95 telephone, 16 referrals to outpatient clinic.</p> <p>Outpatient- 80 follow up groups, 35 visits, 45 telephone calls.</p> <p>Nurse-led- mean overall patient satisfaction at 1.5 months 8.4, 4 months 8.5 compared to 7.5 & 7.1.</p> <p>Nurse-led mean overall satisfaction at 1.5 months 8.0, and 8.5 compared to 6.8 & 6.9.</p> <p>Qualitative, nurse-led group was more satisfied with advice and information given by the care provider, and the involvement of the patient in care planning</p> <p>Cost of nurse-led follow up per patient is 38% lower than conventional (89.97euro vs 144.48euro)</p>	High dropout rate, most often due to death

Author, Year Country	Design Type	Characteristics	Sample	Intervention	Comparison	Outcome	Notes/ Comments
Wong et al. 2016 China	RCT	<p>3 hospitals with the Hospital Authority of Hong Kong.</p> <p>Patients had to meet one of four heart failure criteria, Cantonese-speaking, live within the service area, contactable by phone, referral accepted by PC team.</p> <p>Excluded due to discharge to a facility, unable to communicate, diagnosed with severe psychiatric disorders, recruited to other programs</p>	<p>N= 84</p> <p>Intervention n=43, control n=41</p>	<p>Home visits/telephone calls every week for the first month and less frequently subsequent months for 12 months.</p> <p>Palliative care training nurse case managers conducted weekly visits x 4 on a pre-structured framework, then monthly until the end of 12 weeks</p>	<p>Two attention control social calls from an assistant with light conversation topics unrelated to clinical issues</p>	<p>Number of readmissions at 4 weeks- intervention 0.21, control 0.41.</p> <p>Number of readmission at 12 weeks- intervention 0.42, control 1.10.</p> <p>Readmission within 28 days- intervention 9, control 12.</p> <p>Readmission with 84 days- intervention 14, control 25.</p>	

Table 3 *Demographic Characteristics n (%) and Descriptive Results, Mean (SD) Range*

	Total	
Patient-Related variables		
N		45
Females	29 (64.4)	
Age	69 (16); 30-97	
DNR	28 (62.2%)	
Co-morbidities		
Anemia	17 (37.8)	
CA	16 (35.6)	
CHF	14 (31.1)	
COPD	13 (28.9)	
Respiratory Failure	12 (26.7)	
DM	9 (20)	
Dysrhythmias	9 (20)	
CKD	8 (17.8)	
Liver Failure	8 (17.8)	
Hx of PE or DVT	5 (11.1)	
ER visits		65
Number of Patients with ER Visits	25 (55.6)	
ER visits occurring between 0800-1700	39 (60)	
ER visits occurring within 30 days of an admission	35 (53.8)	
Reason for ER Visit		
SOB	12 (18.5)	
Fall	12 (18.5)	
Pain	11 (16.9)	
Dysuria	9 (13.8)	
Required line change (IV, catheter, feeding tube)	7 (10.8)	
Rule out complications (DVT or GI bleed)	3 (4.6)	
Reports of Suicidal Thoughts	3 (4.6)	
Rash	3 (4.6)	
Blood transfusion	2 (3.1)	
Malaise	2 (3.1)	
Altered mental status	1 (1.5)	
Hospitalizations		141
Received palliative care consultations	81 (57.4)	
30-day readmissions	71 (50.4)	
Palliative Care		242
Average number of PC visits per patient	3 (3); 1-16	
PPS Score	50% (20%); 10%-70%	
Days from admission before patient was seen by PC	2.2 (2.4); 0-11	
Days before discharge consult was placed	5.2 (6.0); 0-35	
Number of advanced directives completed by PC	10 (22.2)	

Appendix B

Figure 1 **Process to Identify Retrospective Population**

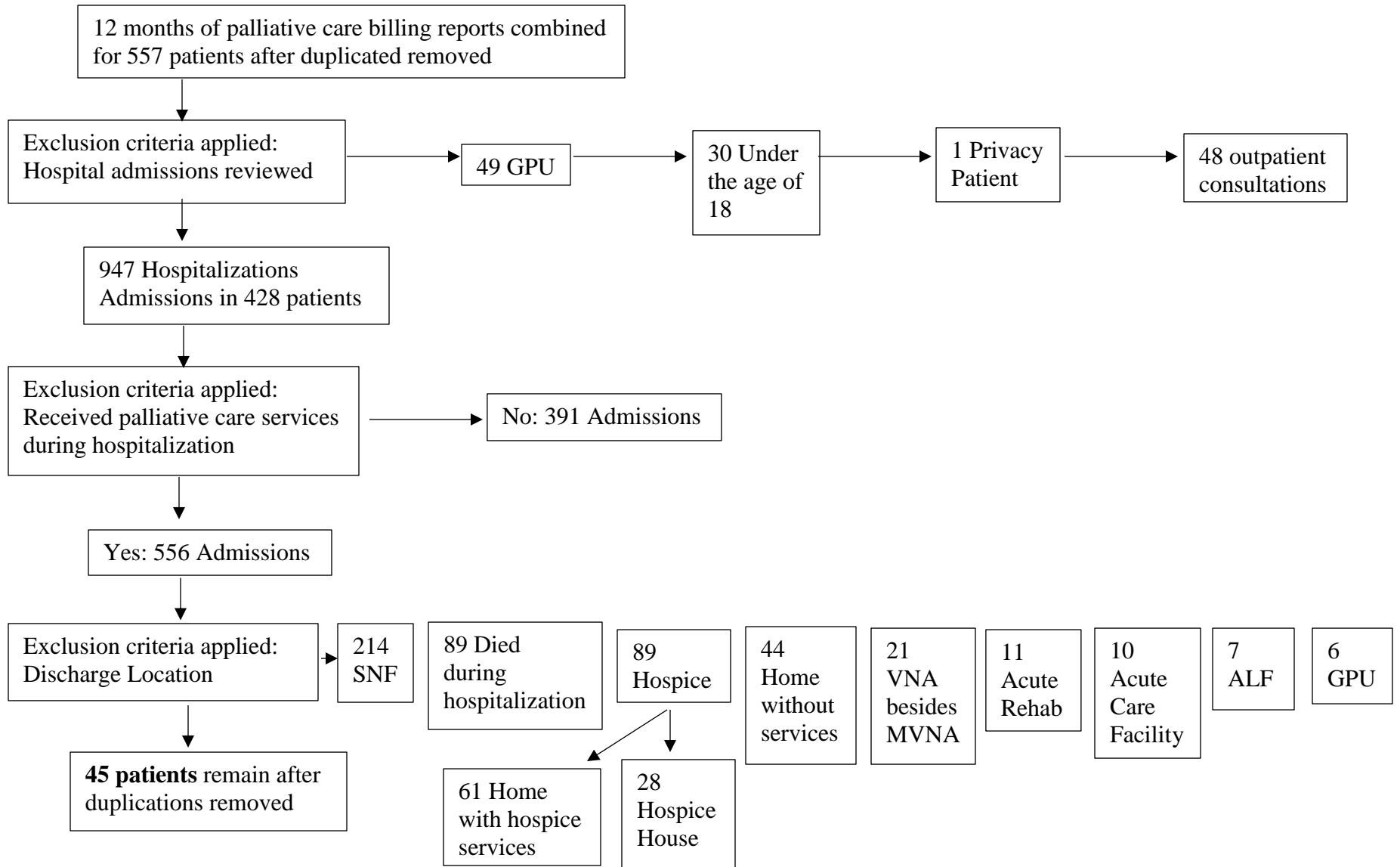
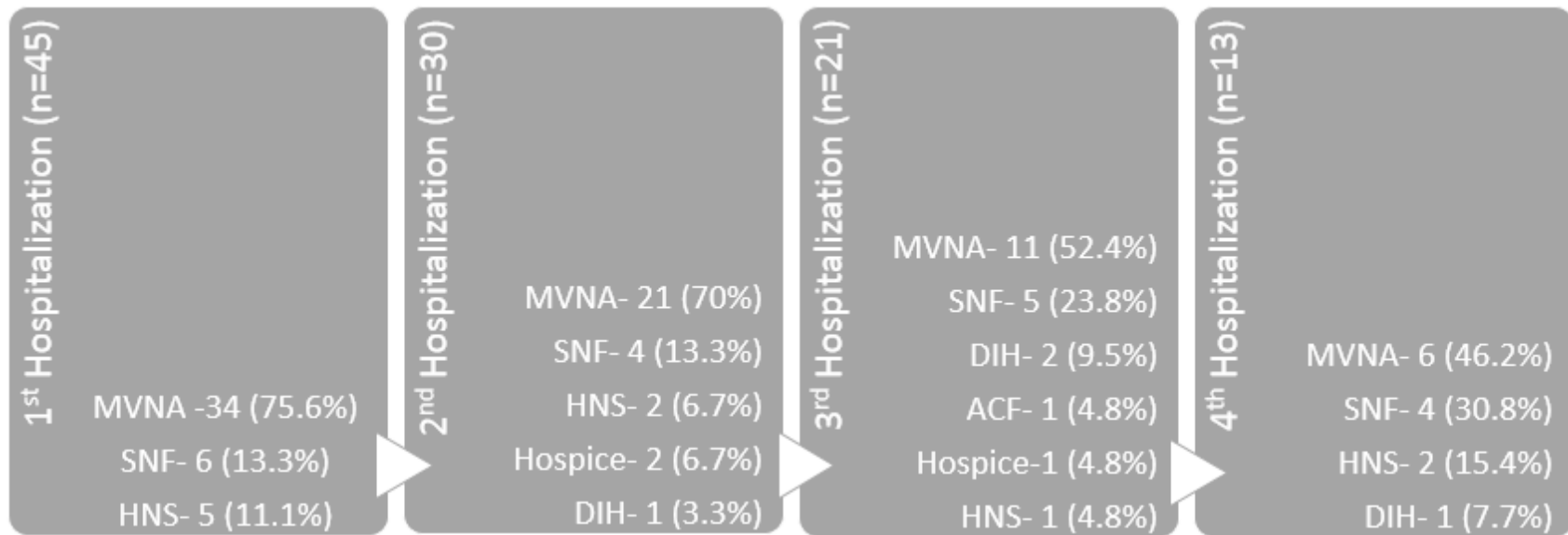


Figure 2 Palliative Performance Score Tool

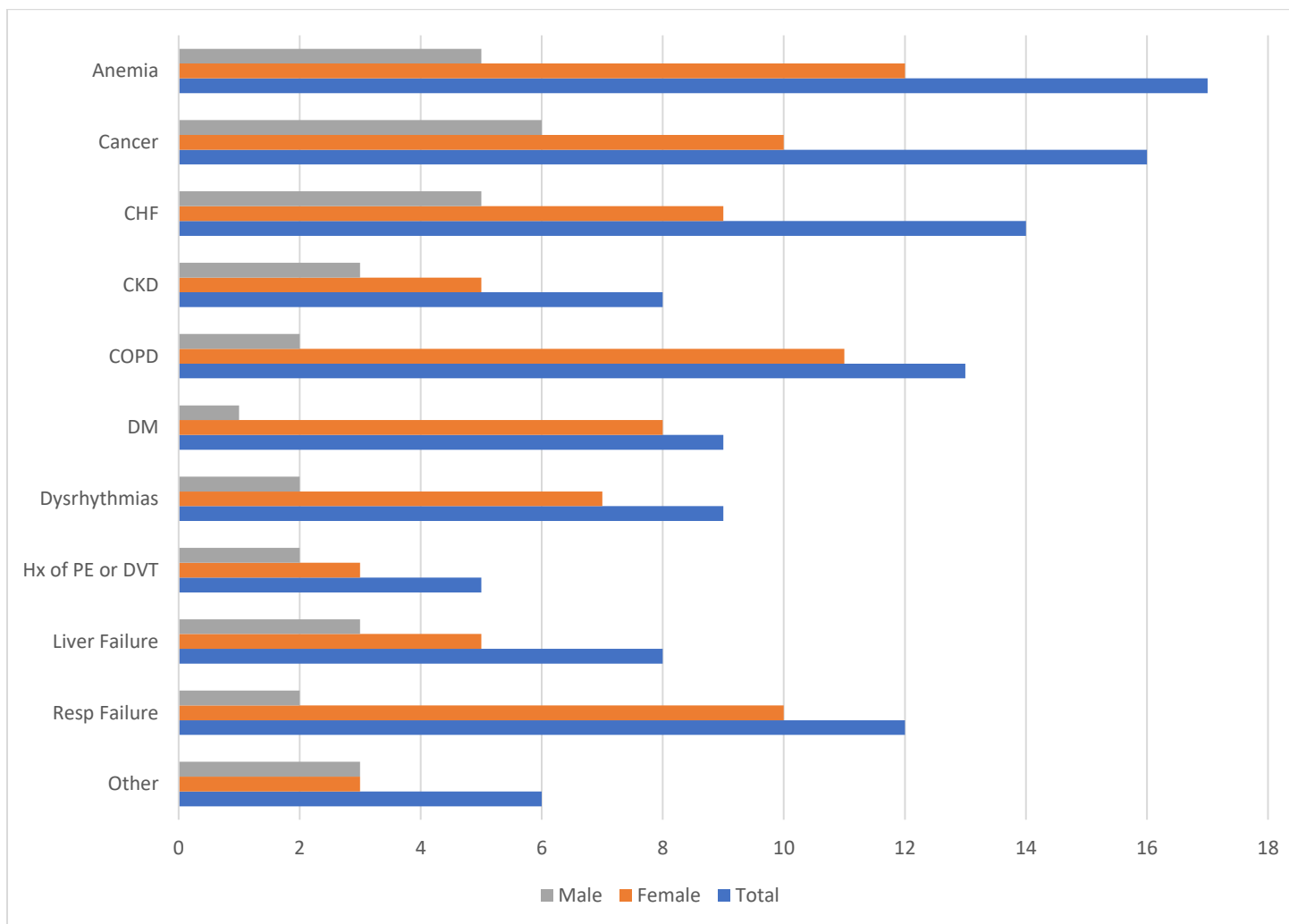
PPS Level	Ambulation	Activity & Evidence of Disease	Self-Care	Intake	Conscious Level
100%	Full	Normal activity & work No evidence of disease	Full	Normal	Full
90%	Full	Normal activity & work Some evidence of disease	Full	Normal	Full
80%	Full	Normal activity with effort Some evidence of disease	Full	Normal or reduced	Full
70%	Reduced	Unable Normal Job/Work Significant Disease	Full	Normal or reduced	Full
60%	Reduced	Unable hobby/house work Significant disease	Occasional assistance necessary	Normal or reduced	Full or confusion
50%	Mainly sit/lie	Unable to do any work Extensive disease	Considerable assistance required	Normal or reduced	Full or confusion
40%	Mainly in bed	Unable to do most activity Extensive disease	Mainly assistance	Normal or reduced	Full or drowsy +/- confusion
30%	Totally bed bound	Unable to do any activity Extensive disease	Total care	Normal or reduced	Full or drowsy +/- confusion
20%	Totally bed bound	Unable to do any activity Extensive disease	Total care	Minimal to sips	Full or drowsy +/- confusion
10%	Totally bed bound	Unable to do any activity Extensive disease	Total care	Mouth care only	Drowsy or coma +/- confusion
0%	Death	-	-	-	-

Figure 3 *Discharge Disposition per last four hospitalizations*

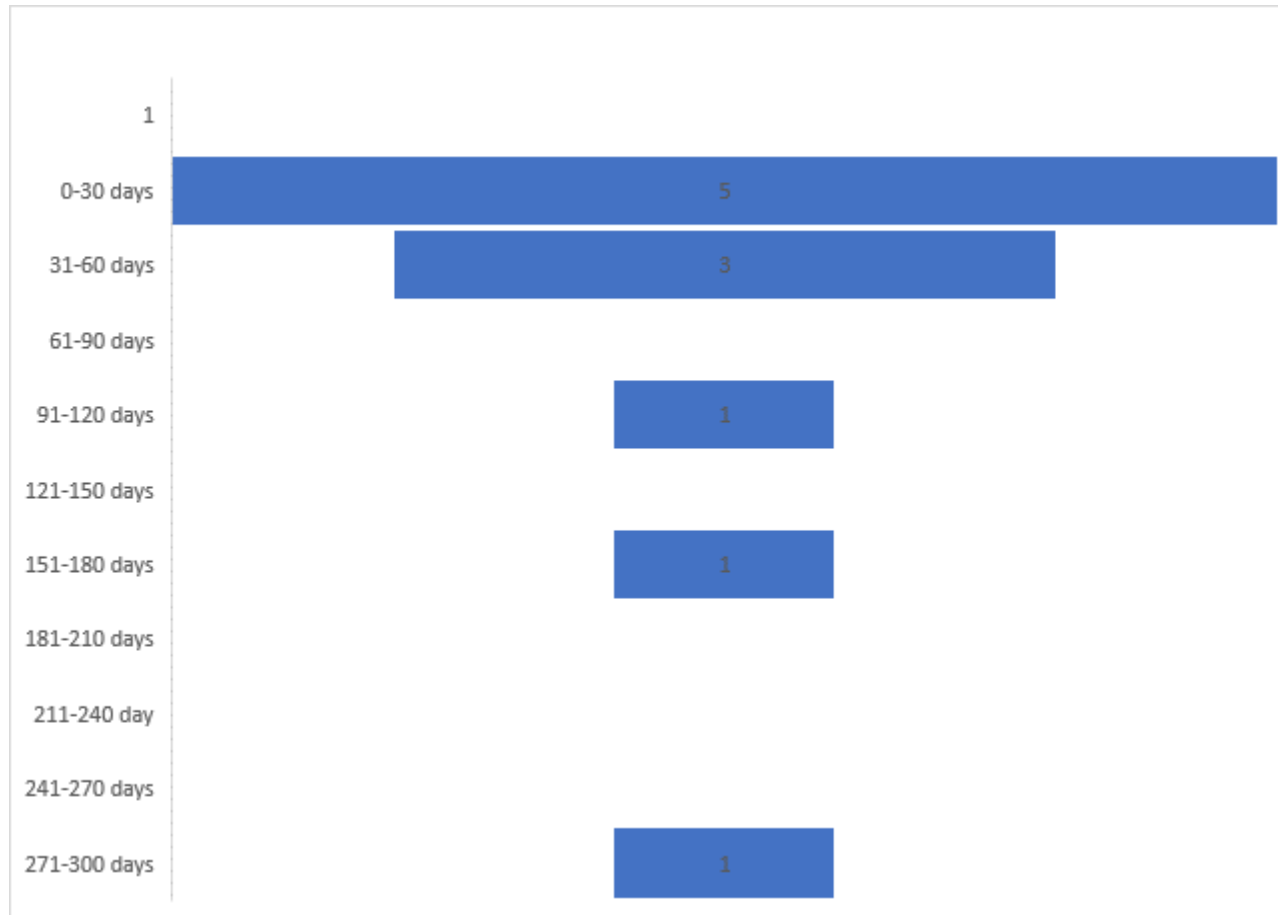


Appendix C

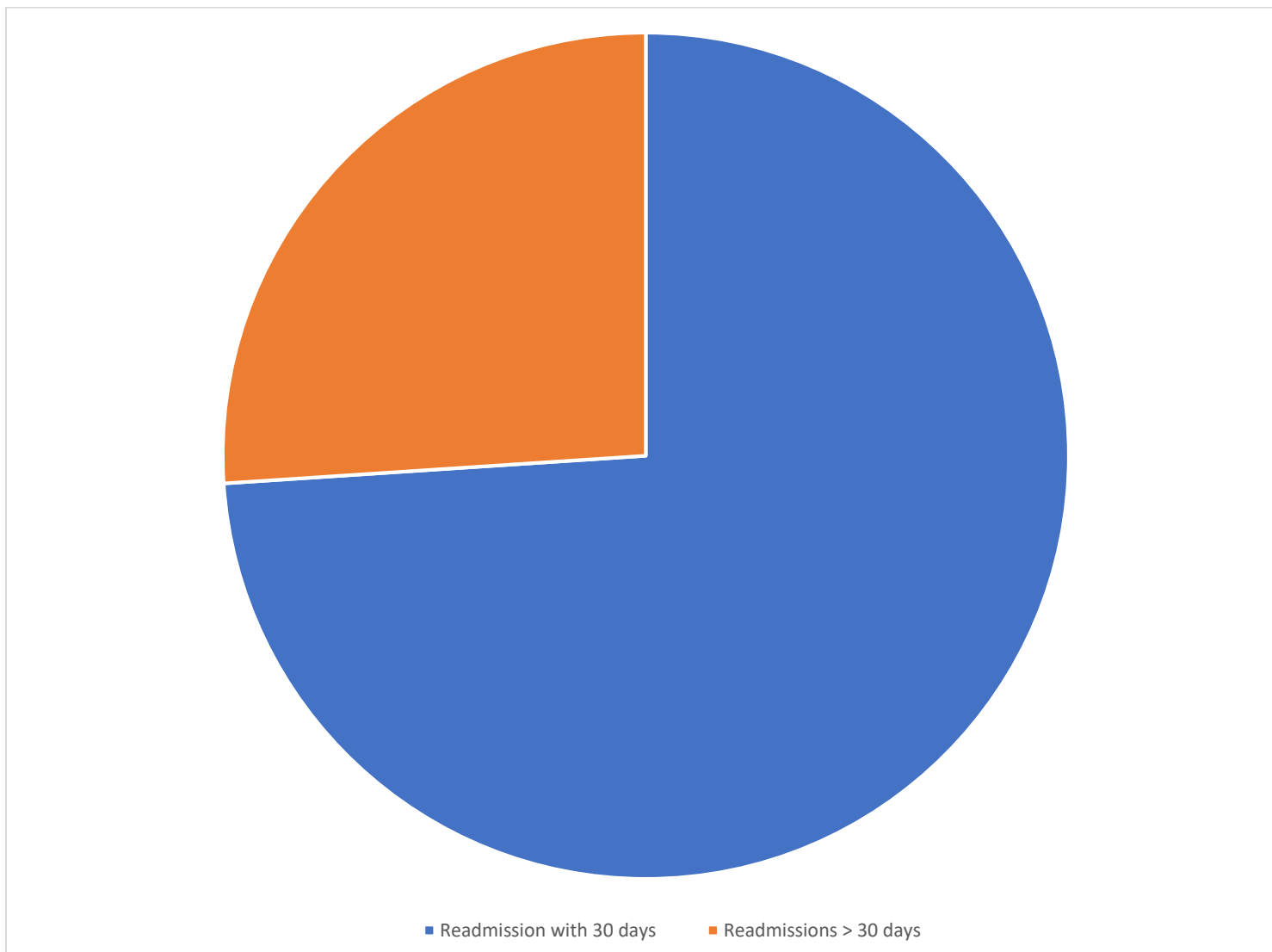
Graph 1 Patient Co-morbidity of Retrospective Population



Graph 2 *Hospice Length of Stay Before Death of Retrospective Population*



Graph 3 *Readmissions within 30-days of the Retrospective Population*



Graph 4 Reasons for ED Visits in Retrospective Population

