THE SPECIAL CARE UNIT: IMPROVING THE EXPERIENCE OF SERIOUSLY ILL HOSPITALIZED PATIENTS

by

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DNP Capstone Project Approval Form

This is to certify that Michele Avent successfully defended his/her Capstone project entitled:

The Special Care Unit: Improving the Experience of Seriously Ill Hospitalized Patients on August 15, 2018.

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Committee Member 2*

Committee Member 3*

*If applicable
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Abstract

Objective

Examine outcomes for hospitalized adults age 65 and older with advanced chronic obstructive pulmonary disease or heart failure admitted to either a Special Care Unit (SCU) or Intensive Care Unit (ICU) within an urban community hospital.

Background

Advanced chronic conditions when treated in the ICU versus a SCU can cause lengthy hospitalizations that reduce quality of life and increase costs.

Theoretical Framework

Donabedian’s Structure-Process-Outcome Conceptual Model

Methods

Retrospective descriptive chart review explored and compared differences in health care utilization, length of stay (LOS), and documented goals of care (GOC) and end-of-life (EOL) planning conversations within the two units. Outcomes were analyzed using independent sample t-test, chi-square and Fisher’s exact test.

Results

Eighty-eight percent of SCU patients had decreased utilization compared to 8% in the ICU (p<0.001). GOC and EOL documentation was statistically significant (p<0.001). Eight percent of ICU patients had documented EOL planning discussions compared to 100% in the SCU. The sample t-test was not statistically significant (t (48) = 1.4, p = 0.16), but SCU LOS was higher.

Conclusion

The redirection of resources from an ICU setting to a more appropriate environment could be beneficial in improving quality of care and lead to improved outcomes and reduce costs.
Acknowledgements

I would like to express my sincere gratitude to my advisor, Dr. Dianne Loomis (enjoy your retirement), Drs. Paplham and Bruce, and all the faculty and staff for your substantial influence and crucial role in my academic achievements at the University at Buffalo School of Nursing. I especially would like to thank Dr. Loralee Sessanna and Dr. Mary Ann Meeker for their insightful comments and valuable feedback. A special thanks as well to Dr. Nancy Campbell-Heider for her fundamental role in the progression of my capstone project.

I would like to extend my sincere thanks and appreciation to my colleagues at work. Your words of support have been a significant source of encouragement and motivation. Thank you to my Director, Eileen Gillespie for giving me the opportunity to join the team and work in the Special Care Unit. Without your support, it would not have been possible to conduct this research. I must give special thanks to Patrick Murphy, Rosemarie Robinson, and Nicholas Dacosta for assisting me with my data collection. I also would like to thank Dr. Kevin Mascik for mentoring me and generously sharing his expertise through stimulating discussions, guidance and support that allowed me to reach such a tremendous milestone.

Nobody has been more important to me in the pursuit of this project than my family and close friends. Thank you all for being a much-needed pillar. A special heartfelt thanks to my cousin Carol, mom Doris, and daughter, Niya. Thank you all for your love, support and the enormous amount of help and time you contributed to the success of this project.

Lastly, I would like to thank my heavenly father who guided me through it all.
In 2017, the Coalition to Transform Advanced Care (CTAC), defined advanced illness as one or more conditions becoming serious enough that general health and functioning begin to decline, curative treatments loses its effectiveness, and care becomes increasingly oriented towards comfort; this process extends to EOL. The psychological and financial burden on families and society that advanced illness and EOL care imposes can be very costly and quite overwhelming (Dunlay & Strand, 2016). The Center for Disease Control and Prevention (2105) reported that chronic obstructive pulmonary disease (COPD) and heart failure (HF) are among the top ten leading causes of death and hospitalization for adults aged 65 and older in the United States. COPD and HF are chronic progressive illnesses associated with significant physical and psychological burdens, high morbidity, mortality, and increase health care utilization (Gelfman, Bakistas, Warner Stevenson, Kirkpatrick, & Goldstein, 2017). Twenty percent of all Medicare beneficiaries have five or more chronic conditions, and two-thirds of Medicare spending goes to cover their care (Center to Advance Palliative Care, 2018). The increasing number of elderly Americans with multiple chronic illnesses and functional limitations add to the growing concern for the quality of EOL care in this country (Institute of Medicine, 2015). According to Halpern (2015) in the last month of life, one in two Medicare beneficiaries visits an emergency department, one in three is admitted to an ICU, and one in five has inpatient surgery. Advanced chronic conditions often lead to unfavorable health outcomes, increased health care needs, and high medical costs which add a burden to the overall national healthcare expenditure (Hansson et al., 2016). Patients with advanced COPD and HF have special palliative care needs characterized by progressive functional decline, reduced quality of life (QOL), worsening dyspnea, recurrent disease exacerbation, and increasing dependency on caregivers and the healthcare system. Although hospitalization of older adults often results in poor outcomes, Medicare patients account for over 50% of hospital days at
the cost of over one trillion dollars per year (UnitedHealth Center for Health Reform and Modernization, 2013). Lyngaa et al. (2015) discussed how intensive care at EOL is not associated with better survival or improved QOL, and many older adults are dying following unwanted care, in distress, and with their treatment preferences not discussed or adequately documented. Unless we learn how to present patients with informed consent and realistic treatment options, the default is to do everything even if the result is no different from doing less.

Significance of Problem & Gap in Practice

This capstone project compared outcomes for adult patients age 65 and older with advanced COPD or HF in the SCU and ICU within a 312-bed community hospital in Queens, NY that serves an aging population to which traditional models of care are no longer beneficial in meeting their complex needs. Seriously ill patients are vulnerable and at high-risk for receiving potentially unwanted interventions; especially at EOL. Aslakson, Curtis, & Nelson (2014) discussed how some patients spend their final days in the ICU because planning for care in a more suitable or preferred setting is inadequate. Terminally-ill patients are no longer predominately cancer patients, and now include elderly patients with multiple chronic conditions and complex needs that must be appropriately addressed. These patients need intensive, open, and honest conversations about their diagnosis, prognosis, and treatment preferences. The idea that GOC and EOL planning conversations should only be reserved for patients with terminal cancer is a misunderstanding that prevents people with non-malignant life-limiting illnesses (LLI) from receiving the felicitous care they deserve. Chiarchiaro, Olsen, & Tulsky (2013) discussed how multiple studies have shown that interventions such as intensive communications, proactive palliative care, and ethics consultations can decrease ICU LOS without adverse effects on mortality. The most significant impact can be made by improving patients’ understanding of their disease process and providing assistance with
making informed decisions. Heyland et al. (2013) suggested that educating patients and family members regarding diagnosis, prognosis, and appropriate treatment options will help to improve both patient and system outcomes by decreasing hospital admissions, re-admissions, and health care utilization; especially at EOL.

**Intensive Care Unit**

The ICU in this urban community hospital has 18-beds and serves critically ill adults age 18 and older who require life support or intensive monitoring and therapies. The unit is led by an intensivist and has a 1:2 nurse patient ratio. A considerable amount of elderly patients with end-stage chronic disease and poor prognosis were observed occupying a substantial number of the ICU beds. Critical care resources are limited and expensive and the appropriate utilization of ICU beds is essential. Improving value in critical care is of vital importance as it represents a significant portion of health care spending, has high rates of adverse events, and inconsistently delivers evidence-based practices (Murphy, Ogbu, & Coopersmith, 2015).

**Special Care Unit**

The SCU is a six-bed nurse practitioner (NP)-led unit created in 2015 to decompress the ICU and designate a space for patients with advanced illness who would likely benefit from palliative interventions. The goal of this unit is to improve care and outcomes by aligning treatment and services with patients’ GOC preferences. Older adults with advanced illness often have multiple comorbid conditions, a high symptom burden, and limited life expectancy. The intensive patterns of care that many of these patients receive during disease exacerbation and EOL are not always aligned with their values and preferences. Inappropriate utilization of needless surgery, artificial nutrition, antibiotics, and cardiopulmonary resuscitation (CPR) including intubation and mechanical ventilation can unnecessarily drive up costs and cause
unwarranted pain and suffering. The SCU is a strategy designed to reduce overuse of resources while promoting efficient use of health care services. Health care utilization variables for this project include LOS, use of antibiotics, surgery, central lines, vasopressors, hemodialysis, artificial nutrition, cardiopulmonary resuscitation (CPR), intubation, and mechanical ventilation. Delivery of care in the SCU focuses on patients’ needs and wishes. It is an environment based on effective communication, empathy, and partnerships between the interdisciplinary team, patients, and family members. These seriously ill patients have complicated requirements that exceed the capability of the medical floor, but still not medically appropriate for ICU level of care. Before the SCU, the average LOS in the ICU was 9.4 days. Some patients choose to pursue life-sustaining therapy while not wanting or requiring aggressive medical care in an ICU setting. SCU patients receive patient-centered care that combines curative and palliative measures from a multidisciplinary team that includes chaplaincy. The SCU provides an opportunity to offer appropriate care to patients who are burdened with serious illness but not yet imminently at EOL. SCU candidates are identified with the aid of the SCU screening tool (Appendix A) that risk-stratifies patients based on advanced illness criteria consisting of LOS, readmissions, comorbidities, functional status, and emergency department utilization. Initially reserved for select patients in the ICU, the SCU now accepts patients who meet the requirements for advanced illness from the emergency department and medical-surgical floors. Measurable goals include:

- Reduction in ICU LOS
- Increase number and quality of GOC and EOL planning discussions
- Decrease health care utilization (Do not Resuscitate (DNR), Do not Intubate (DNI), use of vasopressors, hemodialysis, antibiotics, IV hydration, artificial nutrition, central lines, and surgery)
Statement of Purpose

The purpose of this capstone project is to analyze and examine the efficacy of the SCU in improving the experience of seriously ill hospitalized patients aged 65 and older with advanced COPD and HF. Also, to increase advanced practice nurses’ awareness and knowledge of the benefits of palliative interventions on patient and system outcomes when integrating palliative care with standard care for patients with non-malignant LLIs. The specific aims of the SCU model include:

- Increase palliative measures and referrals through the initiation of early and compassionate conversations regarding treatment options and prognosis.
- Increase the number and quality of GOC and EOL planning discussions in the ICU with the intent to not only improve communication but also to change the advanced illness paradigm.
- Decompress the ICU

Capstone Question

What is the relationship between the SCU when compared to the ICU on outcomes of LOS, health care utilization, and GOC and EOL planning conversations among hospitalized adults aged 65 and older with advanced COPD and HF?

Literature Review

The articles presented in this literature review matrix (Appendix B) aimed to analyze the effect of palliative care interventions on outcomes for adults with advanced chronic disease; in particular, older adults with COPD and HF. Each article included in this literature review matrix was published within the past five years. Most of the articles examined the impact of palliative interventions on outcomes of QOL, health care utilization, and EOL care for older adults with an advanced chronic illness. Three studies discussed the need to establish guidelines and improve referral criteria for patients with advanced chronic disease in need of palliative interventions (Ambias-Novellas et al., 2016; Gelfman, Bakistas, Warner Stevenson, Kirkpatrick, & Goldstein,
Although palliative care historically focused on the care of patients with cancer, Siouta et al. (2016) discussed how several studies empirically showed that palliative interventions could significantly improve QOL for patients with advanced chronic conditions. Doorenbos, Levy, Curtis, & Dougherty (2016) compared outcomes of patients with advanced illness who received palliative interventions against those who didn’t. There was a statistically significant increase in GOC conversations for the patients who received palliative interventions. The authors also found a higher quality of EOL communication in the GOC group. Duenk et al. (2017), Fawole et al. (2013), and Gelfman et al. (2017) discussed and emphasized the significant impact of enhanced communication on outcomes for this patient population. Studies by Ambias-Novellas et al. (2016), Bostwick et al. (2017), Kavalleratos et al. (2016), and Schroedi et al. (2014) discussed the importance of identifying specific symptoms as early indicators for timely palliative interventions as well as the benefits of early referral. Orford et al. (2016) aimed to describe the prevalence, characteristics, long-term outcomes, and GOC discussions for patients with objective indicators of LLIs referred to the ICU. The researchers performed a prospective, observational, cohort study of all adult inpatients referred to the ICU by the medical emergency team or through direct referral during the period August 2012 to February 2013 at a tertiary teaching hospital in Australia. The primary outcomes measured were mortality, LLIs, discharge destination, and GOC conversations in the medical record. The most common LLIs were heart disease (52.2%), COPD (24.8%), and frailty (23.7%). The authors discovered that a high proportion of patients referred to the ICU had an LLI associated with prolonged hospital LOS and high 1-year mortality, and only one-quarter had documented GOC discussions. Bostwick et al. (2017) compared the palliative care needs of non-cancer patients to that of cancer patients. The authors found that patients with COPD and HF were less functional and more likely to be hospitalized at the time of referral to palliative
care than cancer patients. Seventy percent of the studies used in this review discussed the effect of GOC and EOL care planning discussions on improving patient outcomes. Most of the studies addressed QOL and health care utilization as primary outcome measures of effectiveness. Overall, the results from these studies suggest palliative interventions are associated with improvement in patient outcomes and is rapidly integrating into the care of patients with non-cancer serious illness. Even though studies by Duenk et al. (2017) and Doorenbos et al. (2016) found that palliative care practices did not result in improved in QOL among patients with advanced chronic illness, both studies found that more advanced care planning choices were made which ultimately may lead to improved quality of care, improved QOL, and improved EOL care. Ambias-Novellas et al. (2016) described how early access to palliative care could help to clarify GOC and treatment preferences, improve care delivery and symptom control, reduce distress, reduce use of non-beneficial aggressive care, lower spending, and possibly lengthen survival. Most of the studies reported that palliative interventions increased engagement in advance care planning among hospitalized patients with end-stage chronic illness. There were a variety of methods used to measure these interventions. Most of the methods were qualitative and mixed measures. A limitation of several studies in this review was that the heterogeneity of populations, interventions, and outcomes did not allow for quantitative synthesis. Designs of the studies in this review included retrospective, cross-sectional, and pragmatic cluster control. Several articles were systematic reviews that analyzed studies with various research designs that included prospective and retrospective randomized controlled studies along with descriptive and interventional studies. The many heighten appeals to incorporate palliative care into standard care for adults with advanced illness and near EOL warrants a systematic re-examination of the evidence base. The findings from these
studies support the need for more programs designed to improve patient-centered care, communication, and palliative measures for critically chronically ill hospitalized patients.

**Conceptual Framework & Justification**

Donabedian’s Structure, Process, Outcome (SPO) conceptual framework was chosen to help guide this capstone project. Dr. Avedis Donabedian, a physician, and public health pioneer is known as the founder of the study of quality in healthcare and medical outcomes research. In his landmark article entitled, *Evaluating the Quality of Medical Care* (1966), Dr. Donabedian suggested using the triad of structure, process, and outcome to evaluate the quality of healthcare. He proposed that relationships exist between structure, process, and outcome and each component is directly affected by the former. According to the SPO model, improvements in the structure of care should lead to improvements in clinical processes that should, in turn, improve patient and system outcomes (Jones, 2016). Each domain in the SPO model has specific characteristics that are useful when identifying metrics.

**Structure**

Delivery of care for patients in the SCU and that provided in the ICU involves inherent structural differences. These fundamental differences may explain why vulnerable patients could experience compromised quality of care. Elderly patients with advanced COPD and HF in the ICU often receive aggressive treatments that yield no benefit and are subject to increase pain and suffering as a result of these treatments. The focus of care in the ICU is to prolong life. The focus of treatment in the SCU is to promote comfort with less health care utilization. The SCU model alters the care setting to provide a more appropriately balanced alternative to address the physical, social, and emotional needs of critically chronically ill patients who would benefit from palliative
interventions. The SCU aims to provide appropriate care through the use of palliative interventions, collaboration, and education.

**Process**

Once patients are downgraded, transferred, or admitted to the SCU, the SCU comprehensive care guidelines (Appendix C) are followed. The SCU NP along with members of the interdisciplinary team will meet with patients and their health care proxy or surrogate to establish personalized treatment goals and ensure goals are aligned with appropriate treatment options and discharge dispositions. GOC and EOL planning conversations involve more than just establishing code status. It necessitates in-depth discussions about diagnosis and prognosis to assist patients and their family members determine appropriate medical, social, economic, and spiritual treatment options in both the hospital and community setting. SCU patients fall into one of two categories; patients for whom medical treatment have lost their effectiveness and EOL care is now the priority, or patients who are experiencing an exacerbation of their advanced illness, will likely recover, but require careful discharge planning back to the community. Emphasis is placed on providing patients with the necessary services in the community for a safe and appropriate discharge. Attention is also placed on ensuring patient’s treatment preferences are properly documented and communicated to community providers and caregivers. Palliative consults are encouraged for patients with complex symptom management or decision-making needs. Great effort is placed on improving patients’ understanding of their disease process and finding out what matters most to these patients and their family. The process in the SCU allows for decompression of the ICU, enhanced communication, relief of symptoms with less health care utilization, and improvement in clinical outcomes which ultimately may lead to reduced costs. The goal is to foster an environment based on effective communication, empathy, and partnerships, and not just treating
and treating until death. The processes in the SCU helps to protect vulnerable patients from inappropriate and unnecessary treatments that yield no benefit.

**Outcome**

Important structure and process metrics are closely associated with important outcomes such as decrease LOS and mortality, reduce costs, satisfaction, and improved function (Murphy et al., 2015). Kelley et al. (2017) revealed that undesirable outcomes may be modifiable with specialized clinical interventions and are frequently associated with inadequately managed symptoms, low patient satisfaction, and preference-discordant treatments. Furthermore, Kelley et al. (2017) also pointed out that a large number of seriously ill patients are not quite at EOL when identified so time may allow specialized interventions to improve the quality and preference concordance of care provided. Planning for transitions of care is vital to achieving best outcomes. A substantial number of SCU patients have improved outcomes as evidenced by their lengthened survival, improved symptoms, clarification of GOC preferences, and successful discharge dispositions. The SCU comprehensive care guidelines are helpful in establishing appropriate post-discharge resources and care settings. Examining the impact of interventions on processes alongside outcomes can provide a balanced picture of health care delivery as well as determine whether successful implementation of processes positively impacts the delivery of care and outcomes (Waller, Dodd, Tattersall, Nair, & Sanson-Fisher, 2017).

**Justification**

Donabedian’s SPO model provides a roadmap to enhance quality by illustrating that there must be a focus on metrics as well as improving structure and process to enhance patient and organizational outcomes (Naranjo & Kaimal, 2011). Also, the SPO model provides a framework that will help influence the consistent use of evidence-based practice, provide transparency
surrounding patient outcomes, and focus efforts on improving the quality of outcomes. This conceptual framework enables understanding of the importance of metrics and can also assist with improving the appropriateness of the care delivered. Figure 1 demonstrates how well this framework fits within the SCU model.
Figure 1. Donabedian, A. (1966). Structure, Process, Outcome Model Adapted from Structure, Process, Results (Infographic). Retrieved from http://primarycare.imedpub.com/articles-images/primarycare-Conceptual-framework-25-6-386-g001.png
Methods

Study Population & Design

A retrospective descriptive chart review was used to explore the relationship between LOS, GOC and EOL planning conversations, and health care utilization in the SCU compared to the ICU to help answer the research question. Information for this study was collected using the electronic medical record (EMR). Each chart was searched for the use of progress notes and or Medical Orders for Life Sustaining Treatment (MOLST) forms to document treatment preferences and GOC and EOL planning conversations. The data were de-identified and abstracted from the EMR for analysis in IBM Statistical Package for the Social Sciences (SPSS) software. A collection tool (Appendix D) was used to gather the information. A unique ID entered in numeric order was applied to code patients. All information was verified at the time of collection for accuracy, and patients’ data was validated to ensure the inclusion criteria were met:

- Patient in the ICU between January 2012-January 2014 or SCU between January 2015-January 2018
- Age 65 or older
- Diagnosis of COPD or HF

The first 25 charts that met the inclusion criteria for each unit were selected; N=50. Collected material was de-identified so that there could be no possible way the information could be linked to a patient and there was no need to re-access the data. Protected health information (PHI) was not abstracted beyond what exists in the EMR. The data was only shared in the aggregate. Medical records or patient account numbers were only used to access the chart in the EMR and was not collected. The data were abstracted into a health insurance portability and accountability act (HIPPA) compliant database that was password protected and encrypted. This study was approved by the Institutional Review Board (IRB) of the University of Buffalo, IRB assurance ID # FWA00008824.
Study Variables

Patients’ charts in the ICU meeting the inclusion criteria from January 2012-January 2014 (before the development of the SCU) were reviewed and compared to charts of patients in the SCU meeting the inclusion criteria from January 2015-January 2018. The charts were evaluated against hospital billing data to confirm an HF or COPD diagnosis. Appendix D details the data collection tool used to gather the information about age, gender, race, ethnicity, unit, discharge disposition, diagnosis, and the primary outcome variables of health care utilization, LOS, and GOC and EOL planning documentation.

Statistical Analysis

Descriptive analysis (mean, standard deviation), and frequencies graphs and tables were used for visualization and organization of the demographic data. An independent sample t-test was used to compare LOS between the SCU and the ICU, and a chi-square test was conducted to examine GOC conversations in the ICU to GOC conversations in the SCU.

Box 1

Analysis plan to compare unit outcomes

<table>
<thead>
<tr>
<th>Statistical Test</th>
<th>ICU</th>
<th>SCU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Samples t-test</td>
<td>LOS - days</td>
<td>LOS - days</td>
</tr>
<tr>
<td>Chi-Square</td>
<td>GOC and EOL</td>
<td>GOC and EOL</td>
</tr>
</tbody>
</table>

Results

The sample consisted of 50% males and 50% females with an average age of 80.6 (SD=9.1) years. The sample was primarily Caucasian (n=36,72%) with diagnosis of COPD (n=29, 58%) or HF (n=20, 40%). Ten percent of the sample was Multi-racial followed by 8% African American, 4% Asian, and 2% Egyptian and 2% Native American. The characteristics of the study population
are presented in Table 1. This study measured and compared LOS, health care utilization, palliative consults, and MOLST form and progress note documentation in the two units. An independent sample t-test was conducted to analyze the difference in LOS (see Table 2). The results of the independent sample t-test were not statistically significant ($t(48) = 1.4$, $p = 0.16$), but there was higher LOS in the SCU.

Table 1

*Patient Demographics*

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>25</td>
<td>50.0</td>
</tr>
<tr>
<td>Male</td>
<td>25</td>
<td>50.0</td>
</tr>
<tr>
<td><strong>Race</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>4</td>
<td>8.0</td>
</tr>
<tr>
<td>Asian</td>
<td>2</td>
<td>4.0</td>
</tr>
<tr>
<td>Caucasian</td>
<td>36</td>
<td>72.0</td>
</tr>
<tr>
<td>Egyptian</td>
<td>1</td>
<td>2.0</td>
</tr>
<tr>
<td>Multi-Racial</td>
<td>5</td>
<td>10.0</td>
</tr>
<tr>
<td>Native American</td>
<td>1</td>
<td>2.0</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Ethnicity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hispanic</td>
<td>7</td>
<td>14.0</td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>43</td>
<td>86.0</td>
</tr>
<tr>
<td><strong>Diagnosis</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>COPD</td>
<td>29</td>
<td>58.0</td>
</tr>
<tr>
<td>CHF</td>
<td>20</td>
<td>40.0</td>
</tr>
<tr>
<td>Missing</td>
<td>1</td>
<td>2.0</td>
</tr>
</tbody>
</table>
Health care utilization (use of artificial nutrition, antibiotics, surgery, hemodialysis, CPR, intubation and mechanical ventilation, central lines, vasopressors) was examined for all patients (see Figure 2). Eighty-eight percent of the SCU patients had decreased health care utilization compared to only 8% of patients in the ICU. The difference in health care utilization was statistically significant using Fisher’s exact test (p<0.001).

The second analysis to determine differences between documentation of GOC and EOL planning conversations, palliative care consultations, and MOLST form documentation were analyzed using chi-square. Due to sample sizes of less than five in some cells, Fisher’s exact test was used. Table 3 illustrates the results of the GOC and EOL planning comparison. Differences in GOC documentation was statistically significant (p<0.001). Thirty-six percent of patients in the ICU were found to have GOC documentation compared to 100% of the SCU patients. Eight percent (n=2) of patients in the ICU had documented EOL planning discussions compared to 100% (n=25) in the SCU. Chi-square was utilized to analyze palliative care consults and was statistically significant ($\chi^2=5.7$, p<0.05). In the ICU, 8% (n=2) of patients had palliative consults compared to 36% (n=9) of patients in the SCU. Lastly, Fisher’s exact test was used to examine differences in

Table 2

*LOS Comparison ICU vs. SCU*

<table>
<thead>
<tr>
<th>Variable</th>
<th>X</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICU</td>
<td>8.4</td>
<td>7.6</td>
</tr>
<tr>
<td>SCU</td>
<td>11.6</td>
<td>8.3</td>
</tr>
</tbody>
</table>
MOLST form documentation between the two units and was statistically significant (p<0.001). No patients in the ICU had a completed MOLST form compared to 80% (n=20) in the SCU.

Figure 2. Health Care Utilization. Eighty-eight percent of the SCU patients had decreased health care utilization compared to only 8% of patients in the ICU. The difference in health care utilization was statistically significant (p<0.001).
Table 3

Goals of Care Comparison

<table>
<thead>
<tr>
<th>Variable</th>
<th>ICU n (%)</th>
<th>SCU n (%)</th>
<th>Probability P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goals of Care Conversation</td>
<td></td>
<td></td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td>Documented</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>16 (64%)</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>9 (36%)</td>
<td>25 (100%)</td>
<td></td>
</tr>
<tr>
<td>EOL Planning Discussion</td>
<td></td>
<td></td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td>No</td>
<td>23 (92%)</td>
<td>0.0</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2 (8%)</td>
<td>25 (100%)</td>
<td></td>
</tr>
<tr>
<td>Palliative Care Consult</td>
<td></td>
<td></td>
<td>p&lt;0.05</td>
</tr>
<tr>
<td>No</td>
<td>23 (92%)</td>
<td>16 (64%)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>2 (8%)</td>
<td>9 (36%)</td>
<td></td>
</tr>
<tr>
<td>MOLST Form Completed</td>
<td></td>
<td></td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td>No</td>
<td>25 (100%)</td>
<td>5 (20%)</td>
<td></td>
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<tr>
<td>Yes</td>
<td>0</td>
<td>20 (80%)</td>
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</table>

Discussion

An absence of communication between clinicians, patients, and family members about GOC and EOL planning can result in unnecessary and costly hospitalizations and treatments. The SCU was developed to help fill a void in caring for hospitalized elderly patients with serious illness and poor prognosis. This capstone study examined variables related to LOS, health care utilization, and GOC and EOL planning discussions to determine if the SCU model result in better outcomes. The results from this study support previous findings that early discussions about GOC are
associated with better QOL, reduced use of non-beneficial medical care near death, enhanced goal-consistent care, positive outcomes, and reduced costs (Stanek, 2017). The two patients in the ICU with decreased health care utilization had documented GOC conversations during the end of their ICU stay or on the day of expiration; obviously too late for successful intervention. Results from this study suggest that the redirection of resources from the ICU to a more appropriate environment such as the SCU could be beneficial in addressing the complex needs of vulnerable patients. The SCU model resulted in an increase in the number of documented GOC and EOL planning discussions, increased in palliative referrals, and decreased health care utilization, all of which was statistically significant. The results indicate that treatment that incorporate palliative measures early in the disease trajectory can improve the experience and quality of care for chronically ill patients, and in addition, could also provide substantial cost savings.

A financial analysis revealed a reduction in total variable costs of $703,337 in 2015, $1,031,868 in 2016, and $1,090,213 in 2017 (see Table 4). This cost saving was a function of variable supply (medications, supplies) cost reduction which equaled $447,250 in 2015, $583,436 in 2016, and $803,815 in 2017, and variable labor (equipment, salary) costs which equaled $256,087 in 2015, $448,432 in 2016, and $286,398 in 2017. Between the years 2015 and 2017 there has been a total cost saving of $2,825,418 by avoiding unnecessary ICU utilization. The high costs associated with inpatient care are mostly related to buildings, equipment, salaried labor, and overhead, which are fixed costs. These high fixed costs stress the necessity of allocating resources for appropriate utilization to maintain efficiency. Study findings indicate that patient and family-centered discussions regarding GOC and EOL planning are as crucial in cost-savings as the reduction of unnecessary tests and treatments. The findings from this study also support Ambias-Novellas et al. (2016) statement that palliative measures possibly lengthen
survival. This is evident as only 8% (n=2) of the sampled SCU patients expired, 40% were discharged to a skilled nursing facility, and 28% was discharged home with home care services (see Figure 3). Palliative interventions are consistently associated with lower intensity of treatments and costs in hospitals, better QOL, and less aggressive care in outpatient settings (Miller et al., 2016). Understanding patients’ care goals in the context of advanced illness is an essential element of high-quality care that allows clinicians to align the care provided with what is most important to the patient. The processes in the SCU has resulted in significant improvements in patient and family centeredness of care as well as greatly enhanced the quality of clinician-family communication. The success of the SCU model is evidenced by the increase in GOC and EOL planning discussions as corroborated by the increased use of MOLST forms, increased palliative consults, increased hospital-wide referrals, and decreased healthcare utilization which is substantiated by significant cost savings. Figure 4 demonstrates how the number of patients referred to the SCU has increased over time, and since the creation of the SCU ICU LOS has decreased from 9.4 days to 4.5 days. Figure 4 also display the relationship between ICU LOS and SCU census. As the LOS in the ICU decreased, the census in the SCU increased. Findings from this study suggest that when care goals are aligned with patients’ values and preferences it permits an easier transition to comfort care. In addition, the decompression of the ICU afforded by the SCU has allowed increased bed availability for patients whose GOC preferences and medical conditions are more likely to benefit from intensive care treatments. Inherently, the SCU model is about change; changing the attitudes, skills, and knowledge of all involved stakeholders.
Table 4

*Yearly and Total Variable Cost Savings*

<table>
<thead>
<tr>
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<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>Total</th>
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<tbody>
<tr>
<td>Labor</td>
<td>$447,250</td>
<td>583,436</td>
<td>$803,815</td>
<td>$1,834,501</td>
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<tr>
<td>Supply</td>
<td>$256,087</td>
<td>448,432</td>
<td>286,398</td>
<td>990,918</td>
</tr>
<tr>
<td>Total</td>
<td>$703,337</td>
<td>$1,031,868</td>
<td>$1,090,213</td>
<td>$2,825,418</td>
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</table>

*Figure 3. SCU Discharge Disposition. 8% expired, 40% discharged to a skilled nursing facility, and 28% discharged home with home care services*
Figure 4. Relationship between SCU Census & ICU LOS. Illustrates how since the development of the SCU in 2015, ICU LOS has decreased from 9.4 days to 4.5 as of 2017. As the census in the SCU increased, the LOS in the ICU has decreased.

Limitations

A limitation of this study is that its focus was elderly patients with COPD or HF in one community hospital and may not be generalizable to larger acute care settings or other non-cancer serious illnesses. More research is needed to determine how disparities limit access to palliative care and to understand the effect of socioeconomic status, ethnicity, culture, and education on outcomes of patients with advanced illness.
Strengths

Findings from this project can be helpful in assisting policymakers in developing appropriate health services, as well as providing researchers with a theoretical framework for future research. The SCU model provides patients with advancing chronic illness an elevated level of care designed to meet their complex needs in a cost-effective and supportive environment. Future implications for nursing practice includes using integrative palliative approaches in daily nursing practice to help improve patient and system outcomes, as well as establishing more palliative educational programs for all levels of nursing.

Conclusion

In this capstone study with a sample size of 50, the SCU model resulted in an increase in the number and quality of documented GOC and EOL planning conversations, a decrease in ICU LOS, and a decrease in health care utilization. This model outlines a process for designing programs that provide quality care that is responsive to all involved stakeholders and is financially and operationally sustainable. Quality care for people with advanced illness should be patient-centered and encompass physical, emotional, social, and spiritual aspects of care that is respectful and delivered by a competent interdisciplinary team. This model successfully uses palliative interventions to optimize the care of adults hospitalized with serious illness by anticipating, preventing, and alleviating suffering across the care continuum. The SCU is an innovative strategy designed to meet the unique needs of hospitalized patients with serious illness by improving communication, collaboration, and care coordination to help enhance patients' experience and QOL.
References


https://www.ncbi.nlm.nih.gov/books/NBK285686/


Appendix A

**Special Care Unit Screening Tool**

Does the patient meet **two or more** of the following criteria for Advanced Illness?

Please check all that apply:

___ **Chronic Illness**

___ **Declining Functional Status**
   ____ Loss of greater than two ADL’s over the past three months
   ____ Complex care requirements (including but not limited to functional dependency, PEG feedings, and chronic ventilator)

**Malnutrition**
   ____ Unintentional weight loss in the past six months
   ____ Poor oral intake or failure to thrive

**Evidence of organ dysfunction**
   ____ Neurology: CVA, Dementia
   ____ Cardiac: EF less than 30%, CHF, Cardiac Arrest
   ____ Pulmonary: Stage III or IV COPD, tracheostomy, vent and/or oxygen dependent (high-flow or bipap)
   ____ Renal: dialysis, Chronic kidney disease
   ____ Cancer, advanced or metastatic disease (whether continuing treatment or not)

___ **Frequent Readmissions**
___ Greater or equal to three admissions over the past six months

Does the patient meet one or more of the following criteria to be admitted to the SCU?

Please check all that apply:
___ Previous SCU patient
___ Meets advanced illness criteria and one of the following:
___ Requires close monitoring but does not meet ICU criteria
___ Mechanical ventilation with tracheostomy tube or trach-collars patient
___ Complex symptom management needs but not yet in-patient hospice eligible or refusing in-patient hospice

Does the patient meet the criteria for the SCU?
___ YES ___ NO

Call for ICU Consult

*(Final determination by ICU attending)*
### Literature Review Matrix

<table>
<thead>
<tr>
<th>Article Citation</th>
<th>Design, Method. &amp; Theoretical Framework</th>
<th>Study Purpose</th>
<th>Sample &amp; Setting</th>
<th>Findings, Limitations, &amp; Conclusions</th>
<th>Future Implications for Nursing Practice</th>
<th>Gaps in Nursing Knowledge &amp; Science (capstone/dissertation relevance)</th>
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<tr>
<td>Ambias-Novellas, J., Murray, S. A., Espaullella, J., Oller, R., Martinez-Munoz, M., Molist, N., … Gomez-Batiste, X. (2016). Identifying patients with advanced chronic conditions for a progressive palliative care approach: a cross-sectional study of prognostic indicators related to end-of-life trajectories. <em>The BMJ Journal</em>, 6(9), e012340. doi:10.1136/bmjopen-2016-012340</td>
<td><strong>Design</strong>: A cross-sectional study  <strong>Method</strong>: The authors used the NECPAL CCOMS-ICO tool to identify advanced terminal patients in need of palliative care.  <strong>Conceptual Framework</strong>: Early identification of patients with palliative care needs and end-of-life trajectories associated with advanced chronic illness could improve the care for patients with advanced chronic illness. Qualitative</td>
<td>This study explored the relationship between end-of-life indicators used to identify patients with advanced chronic conditions and the three archetypal end-of-life trajectories: acute intermittent and gradual dwindling to determine which indicators most consistently identify patients for palliative care consults</td>
<td><strong>Sample</strong>: 782 patients (61.5% women, 38.5% men; mean age: 80.89) with a positive NECPAL CCOMS-ICO test. Case selection was undertaken from November 2010 to October 2011  <strong>Setting</strong>: Three primary care services, an acute care hospital, an intermediate care center, and four nursing homes in a mixed urban–rural district in Barcelona, Spain. 523 (66.9%) residents in the community, 154 (19.7%) in nursing homes, 55 (7%) at the intermediate care center and 50 (6.4%) at the acute care hospital</td>
<td><strong>Findings</strong>: The common indicators associated with early end-of-life identification were functional (44.3%), nutritional progression (30.7%), emotional distress (21.9%), and geriatric syndromes, (15.7%), delirium, and falls (11.25%).  <strong>Limitations</strong>: Heterogeneity in the collection of variables due to the multiple assessments from all healthcare system resources and the number of missing data in some variables. Also, since this study was based on health professionals’ assessment and routine data, patients’ perspectives were not included.  <strong>Conclusion</strong>: Dynamic indicators are present in the 3 trajectories and are especially useful to identify patients with advanced chronic conditions for progressive palliative care approach purpose.</td>
<td>Create new measuring systems for frailty, and alternative conceptual models, in order to provide better end-of-life care. Analysis of the characteristics of end-of-life indicators to know which indicators most consistently identify patients for palliative care. Future research is needed to corroborate these findings for clinical decision-making, to assist policymakers in designing appropriate health services, and to provide researchers with a theoretical framework for future research. More research to explore new end-of-life trajectories, in order to provide better end-of-life care.</td>
<td></td>
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<td>Design: A cross-sectional, retrospective analysis</td>
<td>Method: provider-centered, point-of-care quality assessment and reporting tool designed for data collection during clinical encounters in palliative care. Quality Data and Collection Tool for Palliative care (QDACT-PC).</td>
<td>Theoretical Framework: To compare functionality, advance care planning, hospital admissions, prognosis, QOL, and symptoms between these groups to better understand gaps in treatment, and appropriate services and expertise to the right populations.</td>
<td>Qualitative</td>
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| Design: Randomized two-group study design | Method: Comparison of a goals-of-care intervention compared to usual care. The goals of care intervention were a pre-visit patient activation- | To determine the effects of a goals-of-care intervention compared to usual care on the number of goals of care conversations, quality of communication between | Employ education that helps to increase awareness of importance of integrating palliative care in HF patients. Employ strategies that encourage early access to palliative care |


| Design: A cross-sectional, retrospective analysis | Method: provider-centered, point-of-care quality assessment and reporting tool designed for data collection during clinical encounters in palliative care. Quality Data and Collection Tool for Palliative care (QDACT-PC). | Theoretical Framework: To compare functionality, advance care planning, hospital admissions, prognosis, QOL, and symptoms between these groups to better understand gaps in treatment, and appropriate services and expertise to the right populations. | Qualitative |

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<td>Proactive palliative care for patients with COPD with poor prognosis were recruited during hospitalization for acute exacerbation. All patients received usual care while patients in the intervention group received additional proactive palliative care in monthly meetings with a specialized palliative care team (SPCT). Outcomes were measured using the St George Respiratory Questionnaire (SGRQ).</td>
<td>Method: Patients with COPD with poor prognosis were recruited during hospitalization for acute exacerbation. All patients received usual care while patients in the intervention group received additional proactive palliative care in monthly meetings with a specialized palliative care team (SPCT). Outcomes were measured using the St George Respiratory Questionnaire (SGRQ).</td>
<td>Setting: Six general hospitals in the Netherlands (three intervention and three control) Hospitals were selected for the intervention group based on the presence of a SPCT.</td>
<td>Limitations: Design was subject to selection bias at hospital level. Also, twenty-two percent of patients identified as having a poor prognosis died possibly suggesting the author’s criteria for poor prognosis were too broad.</td>
<td>Little is known about the effects of proactive palliative care in COPD, so more research is needed to be able to improve care for this patient group.</td>
</tr>
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<td>Theoretical Framework: Early or proactive palliative care can improve patients’ QOL, but little is known about the effects of proactive palliative care in patients and providers, referrals to palliative care services, and completion of advance care directives.</td>
<td>Intervention. There were no differences between groups on the other outcomes.</td>
<td>Limitations: Study took place in one region of the U.S. at a tertiary care academic medical center and may not generalize to other regions or settings. Also, setting was a single HF clinic where providers had patients participating in both groups of the study simultaneously.</td>
<td>Conclusion: The goals of care intervention resulted in more conversations and higher quality communication between HF patients and providers without increased anxiety or depression.</td>
<td>Employ strategies to increase collaboration between primary and secondary health care professionals to improve outcomes for these patients.</td>
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<tr>
<td>education, telephone-based intervention delivered by a nurse. Qualitative Theoretical Framework: Improving communication between patients and providers about goals of care has the potential to improve patient-provider communication and patient outcomes.</td>
<td>Patients and providers, referrals to palliative care services, and completion of advance care directives. intervention. There were no differences between groups on the other outcomes.</td>
<td>Limitations: Study took place in one region of the U.S. at a tertiary care academic medical center and may not generalize to other regions or settings. Also, setting was a single HF clinic where providers had patients participating in both groups of the study simultaneously.</td>
<td>Conclusion: The goals of care intervention resulted in more conversations and higher quality communication between HF patients and providers without increased anxiety or depression.</td>
<td>More Emphasis on supporting patients through advance care planning conversations to improve their quality of care toward the end of life.</td>
</tr>
<tr>
<td>Between heart failure patients and heart failure providers. Journal of Pain and Symptom Management, 53(6), 353-360. doi:10.1016/j.jpainsymman.2016.03.018</td>
<td>Theoretical Framework: Improving communication between patients and providers about goals of care has the potential to improve patient-provider communication and patient outcomes.</td>
<td>Patients and providers, referrals to palliative care services, and completion of advance care directives. intervention. There were no differences between groups on the other outcomes.</td>
<td>Limitations: Study took place in one region of the U.S. at a tertiary care academic medical center and may not generalize to other regions or settings. Also, setting was a single HF clinic where providers had patients participating in both groups of the study simultaneously.</td>
<td>The intervention warrants testing in other settings with larger samples of HF patients.</td>
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A systematic review of communication-related quality improvement interventions for patients with advanced and serious illness.

**Journal of General Internal Medicine, 28(4), 570-577. doi:10.1007/s11606-012-2204-4**

**Design**: A systematic review of prospective, controlled studies

**Method**: Analysis of studies that included a majority of patients that were seriously ill or had advanced disease and who were unlikely to be cured, recover, or stabilize with the focus of the intervention on communication between providers and patients and/or families, and which measured the impact of the intervention on patient and/or family-centered outcomes, including satisfaction, quality of life, symptoms, and healthcare utilization. All studies had a comparison group of usual care, except for one study where all patients were seen by palliative care physicians.

**Qualitative Theoretical Framework**: Communication is a key element of quality of care for patients with advanced and serious illness and their family members. Suboptimal provider-patient/family communication is common, with negative effects on patient/family-centered outcomes.

To systematically review the evidence for effectiveness of communication-related quality improvement interventions for patients with advanced and serious illness and to explore the effectiveness of consultative and integrative palliative interventions.

**Sample**: Twenty studies.

**Setting**: Thirteen studies were conducted in an intensive care setting with one in a neonatal ICU. The remaining seven studies were conducted as follows: one nursing home, two ambulatory and four inpatient hospital units. Majority adult patients with mean age ranged from 40 to 87 years. Most of the studies (n = 15) included patients with mixed illnesses.

**Findings**: The authors found four intervention types: (1) family meetings with the usual team (11 studies, 77 % found improvement in healthcare utilization), (2) palliative care teams (5 studies, 50 % found improvement in healthcare utilization), (3) ethics consultation (2 studies, 100 % found improvement in healthcare utilization), and (4) physician-patient communication (2 studies, no significant improvement in healthcare utilization). Among studies addressing the outcomes of patient/family satisfaction, 22 % found improvement; among studies addressing healthcare utilization (e.g., length of stay), 73 % found improvement.

**Limitations**: The heterogeneity in populations, interventions, outcomes, and measurement tools did not allow for a quantitative synthesis of the literature. Also, the authors only included studies that focused on communication and consequently multi-faceted studies that included communication as one of multiple targets were not addressed.

**Conclusion**: Communication in the care of patients with advanced and serious illness can be improved using quality improvement interventions, particularly for healthcare utilization as an outcome. Interventions may be more effective using a consultative and integrative palliative approach.

**Employ strategies for quality improvement interventions to enhance communication between healthcare providers and these patients for improving quality of care and patient/family-centered outcomes.**

**Employ integrative palliative approaches in daily nursing practice to help improve outcomes.**

**Establish links between healthcare utilization and patient/family-centered outcomes.**

**Employ strategies that improve communication outside of the acute care setting, and bridge communication between outpatient and inpatient settings.**

**Future studies should focus on cultural issues in communication at the end of life and on reducing disparities in outcomes and access to care.**

Further research is also needed to examine the impact of communication interventions on outcomes other than health-care utilization.
Findings: Four key research priorities to improve palliative care for patients with HF and their families were identified: (1) to better understand patients’ uncontrolled symptoms, (2) to better characterize and address the needs of the sample of caregivers of advanced HF patients, (3) to improve ranked responses from the patient and family, and (4) to determine the best evidence and the gaps in the evidence that will need to be improved to demonstrate the benefits of integrating palliative care into the care of patients with advanced HF and their family caregivers.

Method: Using a nominal group technique (NGT), a structured ranking process of important issues, the team performed three conference calls to create a ranked list of priorities. The authors then convened an interdisciplinary working group at a National Institutes of Health/National Palliative Care Research Center (NIH/NPCRC) sponsored workshop to review the evidence base and develop a research agenda to address these gaps.

Qualitative

Theoretical Framework: Despite the demonstrated benefits of palliative care in other populations, evidence for palliative care in the HF population is limited.

Sample: The highest ranked responses from the NGT calls were used to set the two-day symposium agenda: (1) Current Research Examining the Integration of Palliative Care and Heart Failure (HF), (2) Clinical Models Integrating Palliative Care into the Care of Patients with HF, (3) Guidelines, Quality Metrics, and Policy, and (4) Development of an Action Plan and Commitment to Next Steps.

Setting: An interdisciplinary working group at an NIH/NPCRC sponsored workshop in Birmingham, Alabama.

Findings: Four key research priorities to improve palliative care for patients with HF and their families were identified: (1) to better understand patients’ uncontrolled symptoms, (2) to better characterize and address the needs of the caregivers of advanced HF patients, (3) to improve patient and family understanding of HF disease trajectory and the importance of advance care planning, and (4) to determine the best models of palliative care, including models for those who want to continue life-prolonging therapies.

Limitations: Lack of patient and/or caregiver perspectives.

Conclusion: There are unmet needs for palliative care in patients with HF. The goals of palliative care research should be to design and integrate palliative care with recommended HF treatments to maximize the quality and length of survival in accordance with the patients’ goals and preferences.

Employ educational interventions for earlier identification of symptoms of advanced HF (fatigue) to prompt initiation of earlier palliative care services.

Employ opportunities for enrollment in palliative care training programs.

Create care models that are tailored to patients’ specific needs and disease stage.

More research is needed for learning about models of telehealth and telemonitoring to meet palliative care needs of homebound patients.

There is also a need for studies focused on developing primary palliative care model tailored for patients with HF.

Little data exist to describe how disparities limit access to palliative care for patients with HF and their families.

There are no interventions in the literature that are known to increase hospice utilization among patients with advanced HF.

Studies to help better understand the individual elements of a specialist palliative care intervention and determine the impact of each of these elements on outcomes important to clinicians, patients, and family caregivers.


Association between palliative care and patient and caregiver outcomes: A systematic review and meta-analysis.


QOL, symptom burden, mood, survival, advance care planning, site of death, resource utilization, health care expenditures, and satisfaction with care. Interventions were included if they comprised at least 2 of 8 possible domains of palliative care, as defined by the National Consensus Project for Quality Palliative Care. A narrative synthesis was conducted for all trials.

**Settings:** Four-teen trials (32.5%) were in ambulatory settings; 18 (41.8%), home-based; and 11 (25.6%), hospital-based. Thirty- one trials (72.0%) were conducted in the United States.

There was mixed evidence of associations of palliative care with site of death; patient mood; health care expenditures; and caregiver QOL, mood, or burden.

**Limitations:** The diversity of the interventions may have introduced heterogeneity into this meta-analysis. Also, this review excluded quasi-experimental studies, several of which have demonstrated benefits of palliative care. Additionally, several trials could not be included in this meta-analyses, because missing data remained even after contacting authors.

**Conclusion:** Palliative care interventions were associated with significant improvements in QOL and symptom burden but not survival. Also, findings for caregiver outcomes were mixed.


**Method:** Transcribed interviews were evaluated using thematic analysis. The aim of the interview was to provide a description of patient understanding of diagnosis and prognosis, effect of COPD on daily life and social relationships, symptoms, healthcare needs, and preparation for end of life.

**Sample:** 20 English-speaking patients with a history of COPD admitted for an acute exacerbation. Median age 69 years, 11 (55%) were women, and 12 (60%) were black.

**Setting:** This study was conducted at a large, urban, academic medical center in Chicago from 2012 to 2013.

**Findings:** Six themes were identified: (1) understanding of disease (diagnosis, severity, and prognosis), (2) uncontrolled symptoms, (3) physical limitations, (4) emotional distress, (5) social isolation, and (6) concerns about the future.

**Limitations:** The themes identified in this study may not adequately reflect the healthcare needs of a larger population.

**Conclusion:** There are many unmet healthcare needs among patients hospitalized for COPD exacerbation. Relief of symptoms, physical limitations, emotional

Employ educational activities to help increase awareness of signs and symptoms such as social isolation that may warrant a palliative care referral.

Little is known about what interventions may help relieve the emotional distress and isolation experienced by these patients.

It is unknown if palliative care for patients with COPD improves symptoms of depression.
The interview guide was developed in an iterative fashion in collaboration with two pulmonologists and one clinical health psychologist with expertise in qualitative research methods.

**Theoretical Framework:**
To determine which aspects of palliative care are most beneficial for patients with COPD.

---

### Design:
A systematic review

### Method:
Used a four-point Likert scale tool (high quality 4) to very low quality 1) and a narrative synthesis to evaluate current levels of integration of palliative care practices and recommendations among patients with COPD and heart failure.

**Theoretical Framework:**

---

### Sample:
19 studies; 17 guidelines and 2 pathways. Eleven guidelines and pathways were concerned with COPD and eight with CHF.

**Setting:**
eleven studies originated from UK, five from the Netherlands and one from more than one European country. Of the two pathways, one pathway originated from Spain and one from UK.

### Findings:
Eighteen of the 19 studies determined that palliative care should focus on reducing suffering through medications and psychological support. Recommendations for discussions about illness prognosis and limitations were found in 15 out of 19 of the included guidelines and pathways. A holistic approach was recommended in 13 out of 19 guidelines and pathways however, only 8/19 included instructions on when these assessments should take place. Recommendations concerning the involvement of a palliative care team were reported in 13/19. All of these 13 guidelines and pathways additionally promote the composition of a multidisciplinary palliative care team that involves professionals from different disciplines. Seven guidelines and pathways recommend the involvement of personnel that are additionally trained in palliative care. The utilization of advance care planning and the assessment of the

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### Need for more guidelines regarding referral criteria, advanced care planning, and recommendations on the last hours of life and bereavement care.

### Employ educational strategies that enables practitioners to distinguish palliative care from end-of-life care.

### Develop more care models involving a holistic approach in the care of patients with advanced COPD and HF.

### Establish specific referral criteria for initiating palliative referrals.
patients’ goals of care were mentioned in 11/19 and 12/19 guidelines and pathways respectively. Twelve of the 19 guidelines and pathways discussed referral criteria. Only 4/19 used the specific referral criteria mentioned from national organizations. The timing as to when to initiate palliative care varied with 3/19 recommending the last six months. Four of the 19 guidelines and pathways discussed grief and bereavement care and 7/19 gave recommendations on how to treat the patient in the last hours of life and with continued goal adjustment mentioned in 8/19 of the examined documents.

Limitations:
Lack of a standardized and universally accepted definition of integrated PC constitutes a limitation of this study. A second limitation is linguistic and refers to the restriction to European guidelines/pathway published in Dutch, English, French, German, Hungarian and Spanish. The authors admit that additional information could have been obtained if they would have included studies from other continents as well.

Conclusion: The results of this systematic study illustrate that there is a growing awareness for the importance of palliative care in patients with advanced CHF and COPD. There is also a need for the development of standardized strategies so that
A systematic review was undertaken to examine the quantity and quality of data-based research aimed at improving the processes and outcomes associated with delivering end-of-life care in hospital settings.

**Method:** Studies were assessed as to determine whether the experimental design was one of the four types allowed by the Effective Practice and Organization of Care (EPOC) design criteria. For those studies meeting minimum design criteria, methodological quality was then assessed using EPOC risk of bias criteria. Studies were categorized according to whether the primary aim was to improve end of life processes or outcomes.

Systematic review

**Theoretical Framework:** Need to ensure that end-of-life care is guided by patient centered research.

**Sample:** n=416 publications; Descriptive studies n= 351 Measurement studies n= 17 Intervention studies n= 48. Only 18 intervention studies (4%) met EPOC design criteria.

**Setting:** Medline, EMBASE and Cochrane databases were searched between 1995 and 2015 for data-based papers.

Almost all of these studies were conducted in the USA with one in the UK, one in Italy, and one in Australia

**Findings:** Most studies reported benefits for end-of-life processes including end-of-life discussion and documentation. The impact of end-of-life care was mixed.

**Limitations:** The search strategy may have resulted in publication bias, as the authors did not include non-published studies or grey literature and there is different terminology used in different countries. Also, the authors excluded studies of provider-directed interventions when an assessment of impact on patient outcomes or processes was not included.

**Conclusion:** Publications examining end-of-life care in hospitals are predominately descriptive in nature, with few rigorous trials of interventions aimed at improving the care of the dying. More high-quality intervention trials in hospitals are required to make clear recommendations about which strategies are most effective in improving end-of-life care processes, and whether these improvements translate to improved end-of-life outcomes. Interventions targeting both the patient and their substitute decision maker, and those strategies with the potential to change practice patterns at a system level should be explored.

**Future implications for nursing includes ensuring that end-of-life care is guided by patient-centered research for improved interventions aimed at improving the care of the dying.**
APPENDIX C

Special Care Unit
Communication Comprehensive Care Guidelines

1. Family meeting within 48 hours of SCU transfer/admission- Goal setting meeting
   - Document GOC in EMR
   - Identify health care proxy (HCP) or surrogate
   - Complete MOLST form

2. Communicate with the SCU team and different specialists involved in patient’s care.
   - Include the PMD if patient has one

3. Order social work consult and involve case management for comprehensive transitions of care

4. Assess for spiritual needs and order chaplaincy consult

5. Assess if patient needs a palliative consult
   - Complex symptoms (intractable pain, dyspnea, or nausea/vomiting)
   - Complex decision-making

6. When patient is nearing discharge:
   - Clear communication with caregiver/HCP/surrogate about plan of care
   - Contact the community provider –

All SCU patients must have:

- Complex care notes in the EMR to identify these patients; if readmission is necessary, then these patients will be readmitted to the SCU
- MOLST form completed
- GOC documentation
- Advance care planning documentation in progress notes
- Provider to provider communication
APPENDIX D

Data Collection Tool

Unique ID    ____
Age              ____

Gender
• Male              ___
• Female          ___

Race
• African American     ____
• Asian                        ____
• Caucasian                ____
• Other                        ____

Ethnicity
• Hispanic                  ____
• Non-Hispanic          ____

Diagnosis
• COPD                      ____
• CHF                        ____

Was a Goals of Care Conversation documented?
• No     ____
• Yes    ____

Was a MOLST form completed?
• No     ____
• Yes    ____

If MOLST form completed or progress note documentation, indicate treatment preferences:
Length of Stay (Days)

Discharge Disposition
• Home                  ____
• Home with Home Care   ____
• Skilled Nursing Facility  ____
• Hospital                        ____
• Hospice                  ____
• Expired                  ____
APPROVAL OF SUBMISSION: EXEMPT RESEARCH DETERMINATION

April 24, 2018

Dear Michele Avent,

On 4/24/2018, the University at Buffalo IRB reviewed the following submission:

<table>
<thead>
<tr>
<th>Type of Review:</th>
<th>Initial Study</th>
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</thead>
<tbody>
<tr>
<td>Title of Study:</td>
<td>The Special Care: Improving The Care for Seriously Ill Hospitalized Patients</td>
</tr>
<tr>
<td>Investigator:</td>
<td>Michele Avent</td>
</tr>
<tr>
<td>IRB ID:</td>
<td>STUDY00002360</td>
</tr>
<tr>
<td>Funding:</td>
<td>None</td>
</tr>
<tr>
<td>Grant ID:</td>
<td>None</td>
</tr>
<tr>
<td>IND, IDE, or HDE:</td>
<td>None</td>
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</table>
| Documents Reviewed: | • Collection Tool 2018.pdf, Category: Surveys/Questionnaires;  
                         • HRP-612-HIPAA-Waiver%20completed.docx, Category: Other;  
                         • HRP-503-Template 01.docx, Category: IRB Protocol; |

The study materials for the project referenced above were reviewed and approved by the SUNY University at Buffalo IRB (UBIRB) by Non-Committee Review. The UBIRB has determined on 4/24/2018 that the research is Exempt according to 45 CFR Part 46.101. There is no expiration date.

In conducting this study, you are required to follow the requirements listed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the Click system.

This UBIRB determination is given with the understanding that the proposed study design will be followed. If modifications are needed that significantly alter the purpose, design, or data collected, then those changes should be submitted to the IRB to determine if the modifications alter the research such that the criteria for an exempt determination are no longer met. You can create a modification by navigating to the active study in Click IRB and selecting ‘Create Modification / CR’. Otherwise, this study no longer needs to be reviewed by the IRB.
Full HIPAA Waiver

Based on the information you have provided in the “University at Buffalo Human Research Protections Program Request for Full Waiver of Individual Authorization for Use of Individually Identifiable Health Information” form (waiver request), the UBIRB has determined a full waiver of the individual authorization required by 45 CFR §164.508 for use or disclosure of protected health information is warranted based on the following criteria as specified in 45 CFR 164.512(i) (2). Accordingly:

A) The use or disclosure of protected health information involves no more than a minimal risk to the privacy of individuals, based on, at least, the presence of the following elements:

1) An adequate plan to protect the identifiers from improper use and disclosure;

2) An adequate plan to destroy the identifiers at the earliest opportunity consistent with conduct of the research, unless there is a health or research justification for retaining the identifiers or such retention is otherwise required by law; and

3) Adequate written assurances that the protected health information will not be reused or disclosed to any other person or entity, except as required by law, for authorized oversight of the research study, or for other research for which the use or disclosure of protected health information would be permitted by this subpart;

B) The research could not practicably be conducted without the waiver or alteration; and

C) The research could not practicably be conducted without access to and use of the protected health information.

A brief description of the Protected Health Information for which this alteration or waiver has been granted is provided on the “Request for Waiver of the Authorization for Use of Individually Identifiable Health Information” or “Request for Limited Waiver of the Authorization for Use of Individually Identifiable Health Information for Study Recruitment” which is part of this approval. If HIV information is requested, this waiver is only valid for disclosures consistent with New York Code Public Health Article 27-F.

As principal investigator for this study involving human participants, you have responsibilities to the SUNY University at Buffalo IRB (UBIRB) as follows:
1. Ensuring that no subjects are enrolled prior to the IRB approval date.

2. Ensuring that the UBIRB is notified of all reportable information in accordance with the New Information SOP (HRP-024).

3. Ensuring that the protocol is followed as approved by UBIRB including minor changes which can be made if they do no impact the exempt determination.

4. Ensuring that the study is conducted in compliance with all UBIRB decisions, conditions, and requirements.

5. Bearing responsibility for all actions of the staff and sub-investigators with regard to the protocol.

6. Bearing responsibility for securing any other required approvals before research begins.

If you have questions, please contact the UBIRB at 716-888-4888 or ub-irb@buffalo.edu. Please include the project title and number in all correspondence with the UBIRB.
Background & Significance

- Chronic obstructive pulmonary disease (COPD) and heart failure (HF) are chronic progressive illnesses
- Significant physical and psychological burdens
- High morbidity and mortality
- Increase health care utilization

Advanced chronic conditions lead to:
- Unfavorable health outcomes
- Increased health care need
- High medical costs

In 2017 The Coalition to Transform Advanced Care defined advanced illness as one or more conditions becoming serious enough that general health and functioning begin to decline, curative treatments loses its effectiveness and care becomes increasingly oriented towards comfort; this process extends to the end of life (EOL).

The intensive patterns of care that many of these patients receive during disease exacerbation and EOL are not always aligned with their values and preferences.
Aslakson, Curtis, & Nelson (2014) discussed how some patients spend their final days in the intensive care unit (ICU) because planning for care in a more suitable or preferred setting is inadequate.

Improving value in critical care is of vital importance as it represents a significant portion of health care spending, has high rates of adverse events, and inconsistently delivers evidence-based practices (Murphy, Ogbu, & Coopersmith, 2015).

**Study Significance**
- Outcomes for hospitalized adult patients age 65 and older
- Advanced COPD or HF
- Special Care Unit vs Intensive Care Unit
- 312-bed community hospital in Queens, NY
- Determine if the processes in the Special Care Unit resulted in better system and patient outcomes

**Project Focus**
- Analyze and examine the efficacy of the special care unit (SCU)
- Increase advanced practice nurses’ awareness and knowledge of the benefits of palliative interventions on patients with chronic conditions

**Capstone Purpose**
- Analyze and examine the efficacy of the special care unit (SCU)

**Research Question**
What is the relationship between the SCU when compared to the ICU on outcomes of length of stay (LOS), health care utilization, and goals of care (GOC) and EOL planning conversations among hospitalized adults aged 65 and older with advanced COPD or HF?
**Intensive Care Unit**
- 18 Bed Unit
- 1:2 nurse patient ratio
- Adult Medical Patients
- Critically ill patients who require life support for organ failure or intensive monitoring, and therapies.
- Invasive ventilation
- Continuous renal replacement therapies
- Invasive hemodynamic monitoring
- Patients with risk factors for postoperative instability or decompensation

**Special Care Unit**
- Nurse Practitioner (NP)-led six bed unit
- 1:4 nurse patient ratio 1:4-6 NP patient ratio

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**Literature Review**
- Ten articles published within the past five years.
- Quality of life, health care utilization, and EOL care.
- Seventy percent of the studies discussed the effect of GOC and EOL planning discussions on improving patient outcomes.
Palliative interventions are associated with improvement in patient outcomes and should be integrated into the standard care of patients with non-cancer serious illness.

Findings from this literature review support the need for more programs designed to improve patient-centered care, communication, and palliative measures for critically chronically ill hospitalized patients.

Literature Review

Note: neque digni and in aliquet nisl et a umis varius.

The setting in which care is delivered including adequate facilities and equipment, qualification of care providers, administrative structure, and operation of programs.

Structure (S)

Donabedian’s Quality Framework

Structure > Process > Outcomes

Characteristics of institutions & providers

What is done to the patient

What happens to the patient

The activities that constitute care including diagnosis, treatment, prevention, and education. It also examines how care is provided regarding appropriateness and acceptability.

Process (P)
Special Care Unit
Comprehensive Communication Care guidelines

1. Family meeting within 48 hours of SCU transfer/admission – Goal setting meeting
   • Document in GOC Survivor on plan of care and identify HCP/surrogate
   • Complete MOLST form
2. Communicate with primary (ICU team) with different specialties involved in patient’s care.
   • Include the PMD if there is one
3. Order SW consult and invite CM for comprehensive transitions of care
4. Ask if patient needs a spiritual and psychosocial consult
5. Arrange if patient needs a Palliative Consultant Complex symptoms (pain, dyspnea, nausea/vomiting, etc.)
   • Complete discussion ending
6. When patient is nearing discharge,
   • Clear communication with caregiver/HCP/surrogate about plan of care
   • Contact the doctor that will be taking care of the patient
   • If to SNF/LTC, contact facility to speak with doctor
   • If to home, contact PMD

All SCU patients must have
• Complex care note on SCM for ER to identify these patients – on readmission, all SCU patients to be readmitted to SCU
• MOLST for completed
• GOC documentation in SCU
• Advanced Care Planning documentation in progress notes,
• Providers to provide communication

Outcome (O)
The endpoint of care, such as improvement in function, recovery, symptom management, and survival.

• LOS
• Costs
• Discharge disposition
• Increase in SCU referrals

Justification
• Provides a framework that influence evidence-based practice provide.
• Transparency surrounding patient outcomes.
• Enables understanding of the value of metrics

Design and Method
• Retrospective descriptive chart review
• Information for this study was collected using the electronic medical record (EMR).
• Analysis was conducted using IBM Statistical Package for the Social Sciences (SPSS) software
Study Sample

Special Care Unit
Intensive Care Unit

Inclusion Criteria:
- Patient in the ICU between January 2012-January 2014
- Patients in the SCU between January 2015-January 2018
- Age 65 or older
- Diagnosis of COPD or HF

Measurable Goals

- Reduction in ICU LOS
- Increase in the number and quality of GOC and EOL planning discussion
- Decrease use of health care utilization (DNR/DNI, artificial nutrition, antibiotics, IV hydration, vasopressors, hemodialysis, central lines, surgery)

Statistical Analysis

<table>
<thead>
<tr>
<th>Statistical Test</th>
<th>ICU</th>
<th>SCU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Independent Samples</td>
<td>LOS - days</td>
<td>LOS - days</td>
</tr>
<tr>
<td>Chi-Square</td>
<td>GOC and EOL</td>
<td>GOC and EOL</td>
</tr>
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</table>

Table 1

<table>
<thead>
<tr>
<th>Patient Demographics</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>25</td>
<td>50.0</td>
</tr>
<tr>
<td>Male</td>
<td>25</td>
<td>50.0</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>36</td>
<td>72.0</td>
</tr>
<tr>
<td>Egyptian</td>
<td>1</td>
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<tr>
<td>Multi-Racial</td>
<td>5</td>
<td>10.0</td>
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<tr>
<td>Native American</td>
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<td>2.0</td>
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<td>Missing</td>
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<tr>
<td>Ethnicity</td>
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<td></td>
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<tr>
<td>Hispanic</td>
<td>7</td>
<td>14.0</td>
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<tr>
<td>Non-Hispanic</td>
<td>43</td>
<td>86.0</td>
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<tr>
<td>Diagnosis</td>
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<tr>
<td>COPD</td>
<td>29</td>
<td>58.0</td>
</tr>
<tr>
<td>CHF</td>
<td>20</td>
<td>40.0</td>
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<tr>
<td>Missing</td>
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<td>2.0</td>
</tr>
</tbody>
</table>

Note: Study population characteristics: 50% males and 50% females; average age of 80.6 years; 7% Caucasian, 10% Multiracial, 8% African American, 4% Asian, and 2% Egyptian and Native American; COPD 58% and HF 40%.
Table 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>ICU</th>
<th>SCU</th>
</tr>
</thead>
<tbody>
<tr>
<td>LOS</td>
<td>8.4 ± 7.6</td>
<td>11.6 ± 8.3</td>
</tr>
</tbody>
</table>

Note: The results of the independent sample t-test analyzing difference in LOS between the two units were not statistically significant (t(48) = 1.4, p = 0.16), but there was higher LOS in the SCU compared to that in the ICU.

Figure 1. Health Care Utilization. Eighty-eight percent of the SCU patients had decreased health care utilization compared to only 8% of patients in the ICU. The difference in health care utilization was statistically significant using Fisher’s exact test (p<0.001).

Figure 2. SCU Discharge Disposition. 8% expired, 40% discharged to a skilled nursing facility, and 28% discharged home with home care services.

Table 3

<table>
<thead>
<tr>
<th>Variable</th>
<th>ICU</th>
<th>SCU</th>
<th>Probability</th>
<th>P-value</th>
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</thead>
<tbody>
<tr>
<td>Goals of Care Conversation Documented</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>16 (64%)</td>
<td>9 (36%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EOL Planning Discussion</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>23 (92%)</td>
<td>2 (8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Palliative Care Consult</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td>p&lt;0.05</td>
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<tr>
<td></td>
<td>23 (92%)</td>
<td>2 (8%)</td>
<td></td>
<td></td>
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<tr>
<td>MOLST Form Completed</td>
<td>No</td>
<td>Yes</td>
<td></td>
<td>p&lt;0.001</td>
</tr>
<tr>
<td></td>
<td>25 (100%)</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
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</table>

Note. GOC and EOL planning comparison. Differences in GOC documentation was statistically significant. Medical Orders for Life Sustaining Treatment (MOLST).
Figure 3. Relationship between SCU Census & ICU LOS. Illustrates how since the development of the SCU in 2015, ICU LOS has decreased from 9.4 days to 4.5 as of 2017. As the census in the SCU increased, the LOS in the ICU has decreased.

Findings

<table>
<thead>
<tr>
<th>Yearly and Total Variable Cost Savings</th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>$703,337</td>
<td>$1,031,868</td>
<td>$1,090,213</td>
<td>$2,825,418</td>
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<tr>
<td>Labor</td>
<td>$447,250</td>
<td>$583,436</td>
<td>$803,815</td>
<td>$1,834,501</td>
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<tr>
<td>Supply</td>
<td>$256,087</td>
<td>$448,432</td>
<td>$286,398</td>
<td>$990,918</td>
</tr>
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</table>

This cost saving was a function of variable supply cost reductions which equaled $547,250 in 2015, $903,436 in 2016, and $803,815 in 2017, and variable labor costs which equaled $256,087 in 2015, $448,432 in 2016, and $286,398 in 2017. Between years 2015 and 2017 there has been a total cost saving of $2,825,418 by avoiding unnecessary ICU utilization.

Conclusion

The SCU is an innovative strategy that has successfully met the unique needs of hospitalized patients with serious illness through:

- Early integration of palliative measures
- Enhanced communication
- Careful planning for transitions of care

Conclusions

Results from this study suggest that the redirection of resources from the ICU to a more appropriate environment such as the SCU could be beneficial in addressing the complex needs of vulnerable patients.
Limitations

• Focus is elderly patients with end-stage COPD or HF in one community hospital and may not be generalizable to larger acute care settings.

• May not be generalizable to other non-cancer serious illnesses.

• More research is needed to determine how disparities limit access to palliative care.

• Research is needed to understand the effect of socioeconomic status and education on outcomes of patients with advanced illness.

• There is also a need for studies examining the impact of ethnicity and culture on health outcomes for this population.

Strengths

• Findings from this project can be helpful in assisting policymakers in developing appropriate health services.

• Results provide researchers with a theoretical framework for future research.

• This model provides patients with advance chronic illness an elevated level of care designed to meet their complex needs in a cost-effective and supportive environment.

• Future implications for nursing practice include using integrative palliative approaches in daily nursing practice to help improve patient and system outcomes, as well as establishing more palliative educational programs for all levels of nursing.

References


References


Thank You