

A DESCRIPTIVE STUDY OF PALLIATIVE CARE TEAM USE
IN THE INTENSIVE CARE UNIT

by

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As members of the DNP Project Committee, we certify that we have read the DNP project prepared by *Aaron Andrew Andrade*, titled *A Descriptive Study of Palliative Care Team Use in the Intensive Care Unit* and recommend that it be accepted as fulfilling the DNP project requirement for the Degree of Doctor of Nursing Practice.



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Final approval and acceptance of this DNP project is contingent upon the candidate's submission of the final copies of the DNP project to the Graduate College. ®

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TABLE OF CONTENTS

LIST OF FIGURES	5
LIST OF TABLES	6
ABSTRACT.....	7
INTRODUCTION	9
Background and Significance	10
Local Problem	11
Purpose	12
Study Question	13
FRAMEWORK & SYNTHESIS OF EVIDENCE	13
Theoretical Framework	13
Concepts	14
Synthesis of Evidence	16
METHODS	28
Design	28
Setting	28
Participants	29
Data Collection	29
Data Analysis	30
ETHICAL CONSIDERATIONS	30
Respect for Persons	30
Beneficence	30
Justice	31

TABLE OF CONTENTS – *Continued*

RESULTS	31
DISCUSSION	34
Limitations	35
Conclusion	36
APPENDIX A: DATA COLLECTION TOOL.....	38
REFERENCES	39

LIST OF FIGURES

FIGURE 1. <i>Discharge Disposition</i>	34
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LIST OF TABLES

TABLE 1. <i>Evidence Appraisal</i>	20
TABLE 2. <i>Demographic Characteristics</i>	31
TABLE 3. <i>Palliative Care Consultations</i>	33

ABSTRACT

Objective: The cost of an ICU stay is over two and a half times more expensive than a regular inpatient admission, taxing healthcare systems nationwide (Barrett, Smith, Exlixhauser, Honigman, & Pines, 2014). Palliative care consults can lead to decreased costs by facilitating de-escalation of care, limiting futile treatments, and decreasing total length of stay (Enguidanos, Housen, Penido, Mejia, & Miller, 2014). The purpose of this descriptive study is to review the medical records of patients admitted to the ICU with pre-existing advance directives and to whether goals of care discussion occurred, signified by the initial palliative care consult visit date, so that care could be guided towards the goals pre-described.

Methods: This retrospective chart review was conducted to identify the total number of adult patients admitted to the ICU at a level one trauma, stroke, and academic healthcare facility in Scottsdale, Arizona from January 1, 2017 to December 31, 2017 with pre-existing advance directives. It will also identify whether or not a palliative care consult was ordered, and if so, how long after admission the goals of care discussion occurs, signified by the initial palliative care visit date. Finally, it will assess the discharge disposition of these patients.

Findings: One hundred forty-two patients that met inclusion criteria for 2017 had a pre-existing DNR status. Of those 142 patients, 40 had a documented palliative care consultation order. Zero patients had a palliative care initial visit date on the day of or one day after admission. Five patients had a palliative care initial visit date of 2 to 3 days after admission, and three patients had a palliative care initial visit date of 4 to 5 days after admission. Finally, there were 5 patients that had a palliative care initial visit date that occurred more than 5 days after admission. Of the 40 patients that received a palliative care consult, 10 expired. Of those patients discharged to the morgue, 10 received a palliative care consultation, and 4 did not.

Conclusion: A gap in care is present in those admitted to the ICU with a pre-existing DNR status because 71% of patients admitted to the ICU with a pre-existing DNR status did not receive a palliative care consultation. Four patients with a pre-existing DNR status died in the ICU without receiving a palliative care consultation. A palliative care consultation would ensure that all healthcare providers are in alignment with the patient and their family regarding the healthcare goals and treatment plan. The results and information obtained from this project can be used to guide quality improvement projects championed by the AGACNP aimed at creating a protocol requiring a palliative care consultation to be ordered within 24 hours of admission to the ICU in those with a pre-existing DNR status so that goals and plan of care can be in alignment.

INTRODUCTION

As medical technology advances, people are living longer than ever before. The number of Americans aged 65 and older is projected to reach 98 million by 2060, which is approximately one quarter of the population (Colby & Ortman, 2014). Additionally, the healthcare system is treating more and more individuals with serious, chronic illnesses, as half of the adults in the United States are living with a chronic medical condition (Ward, Schiller, & Goodman, 2014). Many of these individuals require admission to the intensive care unit (ICU) for disease-related complications, and approximately twenty percent of these patients die while receiving aggressive care in the ICU (Angus et al., 2004). During these physically and emotionally difficult times, goals of care for the critically ill patient are not always front of mind.

In an effort to increase goals of care discussions, U.S. government created the Patient Self Determination Act of 1990 (PSDA) to: inform patients of their rights under State law to make decisions concerning their healthcare, ask if a patient has an advance directive and document the patient's wishes concerning their healthcare, not discriminate against people who do have advance directives, ensure that valid advance directives and documented healthcare preferences are implemented, and to provide education to patients, staff and the community on issues of the aforementioned requirements (Levin, 1990). The statute allows patients to predetermine the level of life-supporting measures they would like performed in the event of critical illness or cardiopulmonary failure. The ultimate goal of this statute was to help patients and their families have discussions about end of life goals of care and to protect patients' rights and choices regarding their care. Additionally, this law allowed end-of-life conversations to be billable, potentially easing some of the discomfort healthcare providers have discussing these

issues. Arizona complies with the PSDA through the use of an advance directive (AD), which provides direction for healthcare providers regarding the patients' health care desires.

Palliative care teams include ICU healthcare providers, palliative care nurse practitioners, and palliative care nurses. Palliative care teams use the AD to advocate for the patients' wishes and to direct healthcare. However, in 2014, the Institute of Medicine found that the U.S. healthcare system was not sufficiently addressing end-of-life care. This necessitates the use of a palliative care team to have discussions regarding quality of life versus quantity with the healthcare provider, patient, and their family. Palliative care focuses on providing relief from the symptoms and stress of serious illness while attempting to improve the quality of life for the patient and the family as well (Get Palliative Care, n.d.). Additionally, the use of palliative care teams can lead to reduced healthcare costs (Gade et al., 2008). The institution that this project takes place in created a palliative care team to ensure discuss goals of care discussions would occur in patients and their families due to a "palliative care consult" order. To formally define when goals of care conversations occurs at the facility, the ICU healthcare provider will order a palliative care consult and then have a meeting with the palliative care nurse practitioner, palliative care nurse, the patient and their family to discuss goals of care, advance directives, code status, and, if applicable, end-of-life care. For the purpose of this paper to be consistent with the verbiage of the institution studied, a palliative care consult is defined by the time that a goals of care discussion occurs with the palliative care team (consisting of the ICU healthcare provider, palliative care nurse practitioner, palliative care nurse) and the patient and their family.

Background and Significance

Over 5.5 million patients, approximately 20 percent of hospital admissions, are admitted to intensive care units each year for intensive or invasive monitoring, airway or circulation

support, stabilization of life-threatening medical problems, or comfort while dying within an interdisciplinary and collaborative environment (Society of Critical Care Medicine, 2018).

During these ICU admissions, there are oftentimes very difficult decisions that need to be made by the patient and/or their families regarding the treatment and plan of care for the patient.

Controversy may arise when healthcare providers and patients or their families do not agree on a treatment plan. Medical interventions can support organ function for quite some time, prolonging the patients' life, but it may not improve their quality of life, creating a rift between peoples deeply ingrained ethical beliefs (Miller-Smith, Lantos, & Pope, 2017). Doctorate-prepared Nurse Practitioners can provide immense benefit to communication regarding these difficult issues, as they are specially trained in death and dying and can help provide a different perspective to families, helping them transition from pursuing aggressive medical therapy to therapy that will comfort the patient (Miller-Smith et al., 2017). DNP's, along with physicians and members of the palliative care team, can truly make a difference in the goal-directed care of these critically ill patients through conversations with patients and families regarding these difficult decisions.

Critical care medicine costs increased from \$56.6 billion to \$81.7 from 2000 to 2005 (Society of Critical Care Medicine, 2018). The cost of an ICU stay is over two and a half times more expensive than a regular inpatient admission, taxing healthcare systems nationwide (Barrett et al., 2014). Goals of care discussions can lead to decreased costs by facilitating de-escalation of care, limiting futile treatments, and decreasing total length of stay (Enguidanos et al., 2014).

Local Problem

In Arizona, the population of persons aged 65 years and older increased from 13.8% in 2010 to 16.9% in 2016, totaling over 1.1 million people (US Census Bureau, 2016). As the older

adult population continues to grow due to advancing medical technology, so will the number of chronic illnesses and diseases. This will require Arizona's healthcare system to provide more and more high quality care with fading financial resources. As a result, it is imperative that people who are admitted to intensive care units for aggressive medical treatment receive expert consultation, including palliative care consultations to facilitate improved care through goals of care discussions with thoughtful use of resources while also limiting futile care.

Purpose

The purpose of this descriptive study is to review the medical records of patients admitted to the ICU with pre-existing advance directives and to determine whether goals of care discussion occurred, signified by the initial palliative care consult visit date, so that care could be guided towards the goals pre-described. The Adult-Geriatric Acute Care Nurse Practitioner (AGACNP) has the educational foundation to conduct determination of care discussions with family members, as well as other healthcare providers on the treatment team, due to their knowledge of theory, clinical training, and mindset for creating patient-centered care and can be impactful in goals of care discussions. The information obtained from this study has the potential to inform the development of quality improvement studies aimed at implementing a palliative care consultation and goals of care discussion protocol for adult patients admitted to the ICU.

Goals of care discussions can help the critically ill patient and their families with goals of care, assisting with appropriate allocations of end of life discussions and services while ensuring appropriate care plans are in place for patients with a pre-existing DNR status. Misuse of palliative care services can be indicated by lack of a consult prior to death in the ICU, so a solid understanding of the use of palliative care services in relation to code status and mortality will

facilitate identification of patients who should receive a palliative care consult to facilitate goals of care discussions on admission. The adult and geriatric acute care nurse practitioner (AGACNP) has the educational foundation to conduct determination of care discussions with family members, as well as other healthcare providers on the treatment team, due to their knowledge of theory, clinical training, and mindset for creating patient-centered care (McRee & Reed, 2015). Key stakeholders, including ICU healthcare providers, palliative care staff, patients and family members, help provide patient-centered care as a collaborative team.

Study Question

This study will address the following study questions:

1. What percentage of patients admitted to the ICU have an advance directive indicating a DNR status?
2. In patients who are admitted to the ICU with a pre-existing DNR status, does a palliative care consultation get ordered during their stay?
3. In patients admitted to the ICU with a pre-existing DNR status, how many days after admission does a goals of care discussion occur, signified by the initial palliative care visit date?
4. How many admissions who have a pre-existing DNR status die in the ICU without receiving a palliative care consultation?

FRAMEWORK & SYNTHESIS OF EVIDENCE

Theoretical Framework

Any hospitalization can be stressful for the patient and their families. Add being admitted to the intensive care unit to that, and the stress can go up exponentially. Use of a theoretical framework can provide direction and guidance, while applying a theory to practice is

more complex, requiring compatibility with the institutions' mission and values while focusing on the purpose of the problem. In order to better understand the use of palliative care consultations in the ICU, Katharine Kolcaba's comfort theory can be applied. Kolcaba defined three types of comfort: relief (that state of having comfort needs met), ease (the state of calm), and transcendence (the state wherein one can rise above problems) (Kolcaba, Tilton, & Drouin, 2006). In addition to the types of comfort, there are four contexts in which a comfort can occur including physical, psycho-spiritual, environmental, and sociocultural (Petiprin, 2016).

Patient care is focused on achieving optimal patient comfort within all of the four contexts, which can be a very challenging task, especially in the ICU where care can be focused on curing the problem and not providing comfort to the patient. To achieve comfort, it must be understood through the eyes of the patient, because comfort can mean something different to every person. Some people may feel comforted knowing everything is being done to cure them, whereas others may feel comforted when their pain is controlled. This is where the use of palliative care consultations is effective: to achieve comfort in the ICU through various interventions while respecting the patient and families' treatment preferences. Palliative care experts can provide education and counsel to families who are having difficulty understanding the positive and negative impact that conditions will have on patients and their families. Palliative care consultations may help provide comfort to critically ill patients in the intensive care unit who have a pre-existing DNR, while also identifying comfort needs that are not being met by the healthcare team.

Concepts

In order to fully understand the abilities of palliative care teams, certain concepts must be defined. A living will is a document that allows the patient to describe their wishes regarding

medical treatments at the end of life and is only used when two physicians determine the following: the patient is unable to make medical decisions and the patient is in the medical condition specified in the living will (i.e. terminal illness, permanent unconsciousness) (National Hospice and Palliative Care Organization, n.d.). A medical power of attorney (MPOA) or healthcare proxy is a person appointed by the patient to become the surrogate decision maker when the patient is unable to make medical decisions due to medical or psychological illnesses (National Hospice and Palliative Care Organization, n.d.).

Code status refers to the level of medical interventions a patient wishes to have started if their heart stops beating or they stop breathing, requiring cardiopulmonary resuscitation (CPR) and is determined by the admitting physician after reviewing appropriate documentation and consultation with the patient and family. CPR may involve chest compressions to take place of the heart to pump blood throughout the body, electric shocks to attempt to shock the patients' heart out of an abnormal rhythm and into a normal rhythm to promote circulation, breathing tubes inserted into the airway to provide mechanical ventilation, and administration of medications (Medline Plus, 2016). Unless otherwise written or stated, people are "full code", meaning they want everything done including chest compressions, electric shocks, breathing tubes and medications to save their lives. A do not resuscitate (DNR) order is an order written based on the patients' wishes described in their living will, verbalized to the physician when they have the capacity to make their own medical decisions, or determined by the MPOA if the patient is unable to make decisions to not perform CPR if a patients breathing stops or their heart stops beating (Medline Plus, 2016). There is also a limited code status where people can write in their living will describing only certain life saving measures they desire, such as only intubation for respiratory failure or only chest compressions but no medications.

An intensive care unit stay for the purpose of this project is defined as the period of time from which a patient is admitted to the ICU, whether from the emergency room, transfer from another floor within the same hospital or transfer from another hospital, until the time they are discharged, whether they are transferred to a lower level of care in the same hospital, to another facility, home, or due to death.

Palliative care is defined as care guided by physicians, advance practice providers, and palliative care teams to provide comfort and ease suffering of critically ill patients. Palliative care can greatly assist patients and their families in making these difficult decisions, especially with the use of Kolcaba's comfort theory. They put the patients comfort at the forefront of the discussion to promote the relief of suffering, emotional ease and facilitation of productive communication amongst the patient, family and healthcare providers (Casarett, Johnson, Smith, & Richardson, 2011).

Synthesis of Evidence

When patients are admitted to the intensive care unit, difficult decisions are often necessary regarding treatment plans and how they align with the patients' wishes. Oftentimes these decisions fall on the family members or MPOA as the patient may not be able to actively participate in their care and decision-making. This project will assess if patients had pre-existing advance directives prior to ICU admission, as well as the use of palliative care consultations on patients admitted to the intensive care unit with pre-existing DNR orders.

A literature search was conducted to identify current palliative care use in the ICU. Embase, PubMed, CINAHL, and Google Scholar were used. Search terms included palliative care, advance directive, intensive care unit, code status, do not resuscitate, DNR, futile care, and admission. The initial yield was 1,156 articles. Then, the search was limited to English articles

from the last ten years, yielding 588 articles. Twelve of those articles are included in the following discussion based on being published within the last 8 years and relevance to the project (see Table 1).

Beesley et al. (2015) found that only 13.9% of patients admitted to the Trauma ICU had advance directives, yet did not include code status in their study. Halpern et al. (2011) found that 15.7% of patients had living wills and 28.4% had a DNR order in place during their stay in the ICU. Tumangday et al. (2011) found that only 6.43% of patients had a DNR in place upon ICU admission. Grudzen et al. (2016) similarly found that only 4% of patients with pre-existing advance directives had it documented in their medical records. Hart et al. (2015) found that 4.8% of patients admitted to the ICU had pre-existing advanced directives in place at the time of ICU admission, but an astounding 24.6% of those patients had a DNR in place received cardiopulmonary resuscitation (CPR) during their stay.

Cruz et al. (2014) found that lack of palliative care consultations can lead to medically futile treatment in the ICU setting. Hartog et al. (2014) looked at whether written advance directives were helpful in guiding end of life care in the ICU and found low adherence to advance directives. Hurst et al. (2018) found that implementing an objective screening tool increased palliative consultation rates and decreased median time to palliative consultation in the ICU studied.

Yoo et al. (2012) looked at the effective of palliative care services and outcomes in critically ill patients and costs to the hospital; they found no statistical difference in care types, advance directives and hospital costs, but they found in absence of advance directives and hospital costs were significantly lower. Riessen et al. (2013) found that 126 of 685 patients died in the ICU while receiving unlimited therapy, and only 46 patients had palliative care instituted

from the beginning of the ICU admission. Zalensky et al. (2017) found that receiving a palliative care consultation in the ICU was associated with a more frequent DNR status and hospice referral and that early palliative care consultation was associated with significant decrease in length of stay and direct cost reductions. Mun et al. (2016) found that the use of palliative care consultations possibly decreased both ICU and overall hospital length of stay. The authors found no statistical difference on likelihood to decide on advance directives, life-sustaining treatments, and comfort measures after palliative care evaluations in the intensive care unit (Gutierrez et al., 2014). In a similar study done by a former University of Arizona DNP student, the author found that 31.6% of patients admitted to the ICU with a known DNR status did not receive a palliative care consultation during their admission (Torres, 2017). For the patients with a DNR status that did receive a palliative care consultation, the average length of days to consultation was 3.62 days (Torres, 2017). This shows that there is a very large gap in aligning care that needs to be supported by advance practice providers. Doctorate prepared nurse practitioners have the knowledge and education to provide medical management for critically ill patients, as well as have goals of care discussions to facilitate goal-directed care.

Overall, there is a disconnect between patient's wishes and care provided in critical situations in the intensive care unit. Upon admission, it is essential to obtain advance directives and have discussions with the patient and MPOA, whichever is appropriate, to help direct goals of care. The weaknesses, limitations, and gaps seem to be consistent throughout all of the retrospective chart reviews in that these studies are focused on many aspects of the process involved with being admitted to the ICU and assessing and honoring advance directives. The majority of the studies found were retrospective chart reviews, which is Level 4 evidence. The article reviews have provided ample knowledge regarding the lack of goals of care discussions

related to advance directives, which shows that more studies need to be done to look more specifically at the use of palliative care consultations within the first three days of admission and determine whether or not their assistance impacted care provided to the patient to be more aligned with their wishes.

TABLE 1. *Evidence Appraisal*

Author/Article	Research Question	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
<p>Beesley, S.J. O'Donnell, N. Butler, J. Kuttler, K. Hirshberg, E. Walkey, A.J. Hopkins, R.O. Orme, J. Brown, S.M.</p> <p>Advance directives in ICU-admitted patients: Prevalence and association with mortality</p>	<p>Does having an advance directive increase inpatient mortality?</p>	<p>Retrospective chart review</p>	<p>N = 2,094</p> <p>Exclusion criteria: under 18 years of age, any admission after the first to the ICU</p>	<p>Review of the electronic health record and identification of Apache II using univariate and multivariate analysis</p>	<p>Median age: 56 (39-71)</p> <p>291 (13.9%) had advance directive on admission.</p> <p>Patients with higher Apache II scores were more likely to have advance directive on admission (21.7 to 18.6, $p < 0.001$).</p> <p>The authors did not find an association between inpatient mortality and advance directive.</p>
<p>Cruz, V. M. Camaliente, L. Caruso, P.</p> <p>Factors associated with futile end-of-life intensive care in a cancer hospital.</p>	<p>Identify predisposing factors involved in the institution and maintenance of futile intensive care support in terminally ill cancer patients in whom no additional treatment for the</p>	<p>Retrospective chart review</p>	<p>N = 71 (received full code)</p> <p>F = 38 (received futile treatments)</p> <p>C = 238 (received palliative care)</p> <p>Exclusion criteria: under 18 years of age, non-cancer</p>	<p>Qualitative analysis of medical records through Microsoft Excel using a logistic regression model</p>	<p>The authors found futile treatments were linked to physicians lacking proactive attitudes in considering prognosis and talking to families. The authors recommend expanding indications of palliative care consultations.</p>

Author/Article	Research Question	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
	malignant disease would be offered.		diagnosis, death on hospital arrival		
Grudzen, C. R. Buonocore, P. Steinberg, J. Ortiz, J. M. Richardson, L. D. Concordance of Advance Care Plans With Inpatient Directives in the Electronic Medical Record for Older Patients Admitted From the Emergency Department	Determine the rate of advance care planning in older adults presenting to the emergency department and translation into medical directives in the electronic medical record.	Interview and retrospective chart review	N = 682 English or Spanish speaking people who were admitted through the emergency department	A baseline interview and survey was conducted about whether or not patients had a health care proxy or living will documented. Then, for the patients admitted to the hospital, a chart review was conducted to see if the information from the survey was documented in the medical record.	The authors found that of the people admitted to the hospital: H = 367 have health care proxy L = 274 have living will Of those people, only 4% of those with a living will and 4% of those with a health care proxy had the information documented in the electronic medical record.
Halpern, N. A. Pastores, S. M. Chou, J. F. Chawla, S. Thaler, H. T. Advance directives in an oncologic intensive care unit: a contemporary analysis of their	To provide a contemporary analysis of the prevalence, types, and impact of advance health care directives in critically ill cancer patients	28-month retrospective chart review	N = 1,121 ICU patients	Using hospital and ICU databases, the EMR of all patients admitted to the medical-surgical ICU from January 1, 2006 through April 25, 2008 were reviewed.	They found the following: LW = 176 (living will) HCP = 534 (health care proxy) Neither = 411 The authors found that the presence of living wills or health care proxies did not influence ICU care, end of life management, or outcomes.

Author/Article	Research Question	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
frequency, type, and impact					
<p>Hart, J. L. Harhay, M. O. Gabler, N. B. Ratcliffe, S. J. Quill, C. M. Halpern, S. D.</p> <p>Variability Among US Intensive Care Units in Managing the Care of Patients Admitted With Preexisting Limits on Life-Sustaining Therapies</p>	<p>To examine the proportions of patients admitted to the ICU with limitations on life-sustaining treatments and the proportions of these patients who receive aggressive care across individual ICUs.</p>	<p>Retrospective cohort study</p>	<p>N = 277,693 ICU patients</p>	<p>Project IMPACT database used from April 1, 2001 to December 31, 2008 using logistic regression analysis models adjusted for available patient characteristics and clustered visits by individual ICU.</p>	<p>4.8% (95% CI) had previously established treatment limitations 17.8% experienced reversals of existing treatment limitations during the ICU stay. 15.7% of the patients who died received cardiopulmonary resuscitation. There was great variability in proportions of patients admitted with treatment limitations to various ICUs, proportions of those who received CPR and who had treatment limitations established.</p>
<p>Hartog, C. S. Peschel, I. Schwarzkopf, D. Curtis, J. R. Westermann, I. Kabisch, B. Pfeifer, R. Guenther, A. Michalsen, A. Reinhart, K.</p>	<p>To determine whether treatment preferences in patients' advance directives are associated with life-supporting treatments received during end-of-life care in the ICU.</p>	<p>Retrospective matched-cohort study</p>	<p>N = 477 patients</p>	<p>Demographics were collected from an electronic patient data management system (COPRA). Data included age, sex, comorbidities, SAPS II and SOFA scores and length of stay.</p>	<p>64 of 477 patients had advance directives Patients with advance directives were less likely to receive CPR (9% vs 23%, p=0.029) and more likely to have do no resuscitate orders (77% vs 56%, p=0.007). Therapy-limiting decisions and ICU length of stay did not differ between those with or</p>

Author/Article	Research Question	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
Are written advance directives helpful to guide end-of-life therapy in the intensive care unit? A retrospective matched-cohort study					without advance directives. The authors concluded that patients with advance directives are less likely to receive CPR but otherwise receive similar life-sustaining treatments compared to matched patients without advance directives.
Hurst, E. Yessayan, L. Mendez, M. Hammad, A. Jennings, J. Preliminary Analysis of a Modified Screening Tool to Increase the Frequency of Palliative Care Consults	To evaluate whether an objective screening tool within the first 24 hours of ICU admission could improve the frequency and timeliness of palliative care consultation.	Prospective quasi-experimental cohort study	N = 67 C = 156 (control)	Statistical analysis was performed using SAS. The x ² or Fisher exact test were used when the frequencies between group comparisons were less than 5. A 2-sided t test or a Kruskal-Wallis test was conducted when the data were not normally distributed.	Cumulative palliative care consultation (PCC) incidence was higher in the intervention group compared to the control (22.39% vs. 7.05%, p=0.0011). Of ordered consults, consult requests occurred earlier in the intervention group (Wilcoxon p = <0.0001).
Ireland, A.W. Access to palliative care services during a terminal hospital episode reduces intervention rates and hospital costs: A database study of	Examine the cost savings associated with access to palliative care during a hospital episode ending in death.	Retrospective cohort study	N = 19,707 hospital deaths Exclusion criteria: patients younger than 70 years of age, those who died with a terminal episode of less than 2 days	Comorbidities were assessed using the Charlson comorbidity index. Univariate analyses were conducted. Students t-test and Pearson's Chi-square test were applied	Palliative care was recorded for 33.2% of patients and 20% of hospital deaths occurred in palliative care units. Multivariate analyses confirmed that palliative care was associated with a reduction in mean length of stay, reducing mean total costs

Author/Article	Research Question	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
19707 elderly patients dying in hospital, 2011-2015				for continuous and categorical variables.	by \$6,016 per patient. This represents a 28.8% reduction of cost incurred by non-palliative care consultation patients.
<p>Mun, E. Ceria-Ulep, C. Umbarger, L. Nakatsuka, C.</p> <p>Trend of Decreased Length of Stay in the Intensive Care Unit (ICU) and in the Hospital with Palliative Care Integration into the ICU</p>	<p>Incorporate palliative care into the ICU workflow to increase the number of palliative care consultations, improve end-of-life care in the ICU, and impact ICU and/or hospital length of stay</p>	Pre/Post test	<p>Pre-intervention N=194</p> <p>Post-intervention N=198</p> <p>Exclusion criteria: under the age of 18 years of age</p>	Descriptive statistical analysis using Microsoft Excel and SPSS.	<p>There was a slight decrease in the mean length of ICU days, but it was not statistically significant ($t(289)=0.78$, $p>0.05$). . There was also a mean in length of hospital days that was significant at $t(327)=1.93$, $p=0,05$, however there was a small effect size ($r=0.11$). The numbers of patients whose goals were identified by day 3 increased significantly $x_2=6.62$, $p=0.01$. There was a significant increase in the numbers of proactive ICU family meetings by day 3 as well. However, patients in which advance directives were identified by day 3 decreased by 4%, but the number of patients who had their code status identified by day 3 increased significantly.</p>

Author/Article	Research Question	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
<p>Tumangday, C. Dakwar, J. Chawla, S. Pastores, S. Raof, N. Voigt, L. Hale, K. Halpern, N.</p> <p>Characteristics and outcomes of DNR patients admitted to an oncologic ICU</p>	<p>To examine the outcome of cancer patients with DNR orders at the time of ICU consultation who were admitted to the ICU and compare the characteristics of survivors and non-survivors.</p>	<p>Retrospective chart review</p>	<p>N = 2,890 ICU consultations</p>	<p>Age, gender, admitting service, Mortality Probability Model and APACHE II scores on ICU admission, type of cancer, vasopressor use, ventilator support, CRRT, DNR reversal, withdrawal of care, ICU and hospital length of stay, and ICU survival. Data are presented as mean plus standard deviation, absolute numbers and percentages. Comparison was done using the Pearson chi-square test. $P < 0.05$ was significant.</p>	<p>6.43% had DNR orders. Of those patients, 31% were admitted to the ICU, and 74% of them survived. The characteristics of survivors and non-survivors were similar except for significantly lower MPMII and APACHE II scores. Non-survivors had higher rates of withdrawal of care.</p>
<p>Yoo, J. W. Nakagawa, S. Kim, S.</p> <p>Integrative palliative care, advance directives, and hospital outcomes of</p>	<p>To examine the associations between palliative care types and hospital outcomes for patients who have or do not have advance directives.</p>	<p>Retrospective chart review</p>	<p>N = 1291 I=618 (integrative model) C=673 (consultative model)</p>	<p>Multivariate regression analysis with SAS.</p>	<p>Integrative palliative care was associated with lower hospital costs (\$50,715 vs. \$58,532, $p=0.02$). There was no statistical difference between palliative care types and advance directives and cost. In hospital deaths were lower during the integrative phase</p>

Author/Article	Research Question	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
critically ill older adults			Exclusion criteria: mild severity of illness, missing/insufficient data, on hospice prior to admission		than the consultative phase (13% vs. 18%, p=0.003).
Zalenski, R.J. Jones, S. S. Courage, C. Waselewsky, D.R. Kostaroff, A. S. Kaufman, D. Beemath, A. Brofman, J. Castillo, J. W. Krayem, H. Marinelli, A. Milner, B. Palleschi, M.T. Tareen, M. Testani, S. Souhani, A. Walch, J. Wheeler, J. Wilborn, S. Granovsky, H. Impact of Palliative Care Screening and	To determine the outcomes of receiving palliative care consultation for patients who screened positive on palliative care referral criteria.	Prospective quality assurance intervention with a retrospective analysis	N = 405	Covariate balancing propensity score method was used to estimate the conditional probability of receiving a palliative care consultation and to balance important covariates.	161 (40%) patients who screened positive received a palliative care consultation. 244 patients screened positive and did not receive a palliative care consultation. Patients receiving palliative care consultations had a higher rate of DNR-adjusted odds ratios (OR=7.5, 95% CI) and hospice referrals (OR=7.6, 95%CI). However, no overall difference in direct costs or length of stay was found between the two groups. However, when data were stratified by time to palliative care consultation, consultation by day 4 of admission was associated with reduced length of stay (1.7 days, 95% CI).

Author/Article	Research Question	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
Consultation in the ICU: A Multihospital Quality Improvement Project					

METHODS

Design

This retrospective chart review will be conducted to identify the total number of adult patients, with an estimated sample size of 500 patients, admitted to the ICU at a level-one trauma, stroke, and academic healthcare facility from January 1, 2017 to December 31, 2017. Additional data to be collected are age, gender, and discharge disposition. It will then identify the number of those patients with pre-existing advance directives to determine the percentage of patients admitted to the ICU with pre-existing advance directives. It will also identify whether or not a palliative care consult was ordered, and if so, how long after admission the consult was ordered through search of provider order for palliative care consultation. Finally, it will assess the discharge disposition of these patients. Ordering a palliative care consultation may ensure that the medical plan is in line with the patients previously described wishes. The project will assess palliative care use in the ICU as it relates to code status on admission and final patient disposition attempting to identify gaps in care to patients who could benefit from a palliative care expert. Understanding goals of care, which can be done through a palliative care consultation led by the adult-geriatric acute-care nurse practitioner, can identify gaps in care provided to critically ill patients. The information gathered in this study can be used to inform future quality improvement projects.

Setting

The setting for this DNP project is a 46-bed ICU within a 337-bed level-one trauma, stroke and academic center in Scottsdale, Arizona. The facility has numerous resources available to students that will assist in the completion of this project including a palliative care team who will assist in data collection.

Participants

Participants included all medical patients 18 years-of-age and older admitted to the ICU. Inclusion criteria are: (1) admission to the ICU from the emergency room, medical-surgical or telemetry floor, outside facility, or direct admission from home and (2) 18 years-of-age and older. From that group of patients, those with a pre-existing DNR status will be identified to calculate the percent of patients admitted to the ICU with a pre-existing DNR status. Exclusion criteria are: (1) younger than 18 years-of-age.

Data Collection

This retrospective chart review was conducted to identify the total number of adult patients, with an estimated sample size of 500 patients, admitted to the ICU at a level-one trauma, stroke, and academic healthcare facility from January 1, 2017 to December 31, 2017. Additional data to be collected are age, gender, and discharge disposition. It will then identify the number of those patients with pre-existing advance directives to determine the percentage of patients admitted to the ICU with pre-existing advance directives. It will also identify whether or not a palliative care consult was ordered, and if so, how long after admission the goals of care discussion occurs, signified by the initial palliative care visit date. Finally, it will assess the discharge disposition of these patients. Ordering a palliative care consultation may ensure that the medical plan is in line with the patients previously described wishes. The project will assess palliative care use in the ICU as it relates to code status on admission and final patient disposition attempting to identify gaps in care to patients who could benefit from a palliative care expert.

Data Analysis

Data analysis will be done using descriptive statistics to allow for calculation of frequencies and measures of central tendency. Demographic data to be included are the following and will be displayed in Table 2: gender and age.

ETHICAL CONSIDERATIONS

When designing and implementing a research study, there are three major ethical considerations that need to be taken into consideration. The ethical principles assist in justification for ethical interventions and evaluation of human actions (USDHHS, 1979). They include respect for persons, beneficence, and justice (USDHHS, 1979).

Respect for Persons

Respect for persons includes treating research participants as autonomous agents as well as ensuring those with decreased autonomy are given protection (USDHHS, 1979). To respect autonomy is to value an autonomous persons' opinions and choices while not impeding their actions unless they are harmful to others. This DNP project simply requires the use of de-identified data and does not implement any interventions, so respect for persons is upheld. Additionally, the information will be presented to the University of Arizona and the healthcare institution's Institutional Review Boards to ensure protection of subjects.

Beneficence

Beneficence respects persons' decisions and protecting them from harm while securing their well-being. It is the act of not doing harm while maximizing potential benefits (USDHHS, 1979). This DNP project minimizes harm by de-identifying information and provides no direct intervention that could cause any additional harm. Information from this study may be used in future projects, however, those studies will have to ensure beneficence individually.

Justice

Justice guides researchers in distributing benefits and risks of treatment (USDHHS, 1979). There are multiple ways of formulating which burdens and benefits should be distributed, but since this DNP project has no direct interventions that effect persons, justice is upheld.

RESULTS

The first question aimed at determining the percentage of patients admitted to the ICU that have a pre-existing advance directive indicating DNR status. There were 2,022 patients met inclusion criteria admitted to the ICU from January 1, 2017 to December 31, 2017. One hundred forty-two patients that met inclusion criteria had a documented pre-existing DNR status upon ICU admission, and 1,880 patients either did not have a documented code status, therefore making them full code initially, or were listed as a full code. So, approximately 7% of ICU admissions that met inclusion criteria for 2017 had a pre-existing DNR status. The demographic characteristics of those patients are demonstrated in Table 2 below.

TABLE 2. *Demographic Characteristics*

Gender	Number of Patients with pre-existing DNR status	Percent of Patients with pre-existing DNR status¹
Male	71	50
Female	71	50
Age		
<50	10	7
51-60	25	17
60-69	25	17
70-79	39	27
80-89	29	20

>90	14	10
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¹Percent may not equal 100% due to rounding to whole numbers

The second question aimed to determine if patients admitted to the ICU with a pre-existing DNR status receive a palliative care consultation during their admission. The third question aimed to answer in those patients with a pre-existing DNR status that received a palliative care consultation order, how many days after admission does a goals of care discussion occur, signified by the initial palliative care visit date? Of the 142 patients admitted to the ICU with a pre-existing DNR status, 40 patients had a documented palliative care consultation order. Zero patients had a palliative care initial visit date on the day of admission. Zero patients had a palliative care initial visit date one day after admission. There were five patients that had a palliative care initial visit date of 2 to 3 days after admission. There were three patients that had a palliative care initial visit date of 4 to 5 days after admission. Finally, there were 5 patients that had a palliative care initial visit date that occurred more than 5 days after admission, with the longest being 22 days after admission. There are major limitations to this study question, which are discussed in the Limitations section. The results of these questions are listed in Table 3.

TABLE 3. *Palliative Care Consultations*

Palliative Care Consult Ordered	Number of patients that received a consult	Days After Admission Initial PC Visit Date Occurs	Number of patients that received a consult
Yes	40	0 (Day of admission)	0
No	102	1	0
		2-3	5
		4-5	3
		>5	5
		No Documentation	11
		Unable to Determine	16

The final question wanted to assess how many patients with a pre-existing DNR status expire without receiving a palliative care consultation. Of the 40 patients that received a palliative care consult, 10 expired. Additionally, there were four patients that expired that did not receive a palliative care consultation. Patients that expired discharged to the morgue. Patients that discharged with palliative care services went to inpatient hospice. Patients who lived but needed assistance for short- or long-term went to a skilled nursing facility (SNF) or long term acute care (LTAC). Patients who were able to safely discharge home discharged home. Of those patients discharged to the morgue, 10 received a palliative care consultation, and 4 did not. Eleven patients were discharged to inpatient or home hospice, 47 patients were discharged to a LTAC, and 70 patients were discharged home. The discharge dispositions of the patients with a pre-existing DNR status are shown below in Figure 1.

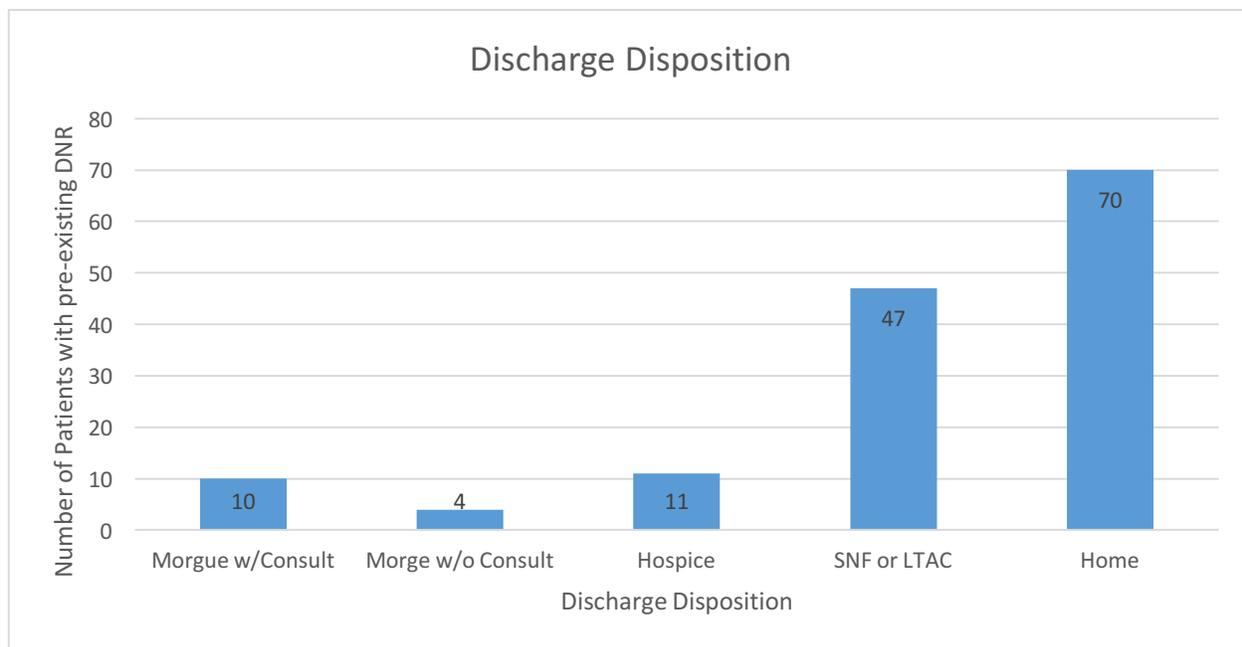


FIGURE 1. *Discharge Disposition*

DISCUSSION

While the older population continues to grow as people live longer, the number of people living with chronic diseases will also grow, requiring healthcare systems across the nation to provide more high-quality care with less resources. There is inadequate research regarding goals of care discussions and palliative care use in the intensive care unit in patients with pre-existing advance directives. This study scrutinized the use of palliative care consultations, signifying a goals of care discussion occurred, in an ICU at a hospital in Scottsdale, Arizona.

This retrospective chart review found that there were 142 patients admitted to the ICU with a pre-existing DNR status, and only 40 patients received a palliative care consultation during their stay. Four of those patients died without receiving a palliative care consultation. One-hundred and two patients, approximately 71%, admitted with a pre-existing DNR status did not receive a palliative care consultation during their admission, so it is difficult to determine whether or not their goals of care were met.

It is clinically significant that four patients that expired in the ICU with a pre-existing advance directive did not receive a palliative care consultation, which could have helped the patient and their family have clear and goal-directed care. It is conceivable that these patients would have not desired the quantity of potentially invasive, painful, time-consuming, and ultimately ineffective interventions they received. The AGACNP could have played a beneficial role in helping guide the patient and their family in critical times, and this exemplifies a gap in care provided to this vulnerable group of people that may not fully understand the gravity of these complex medical and emotional situations. The findings of this study were compared to a study by Torres, who found that 31.6% of admissions to the ICU with a pre-existing DNR status did not a palliative care consultation, and 13.16% of those patients died in the ICU with no palliative care consultation ordered (2017).

Limitations

A major limitation of the study was the collection of data regarding days after admission an initial palliative care visit date occurred, signifying a goals of care discussion. If a patient who was admitted during the study period was re-admitted after the study period ended, their palliative care initial visit date only populates the most recent date ordered. There were 27 patients that had a palliative care consult ordered, and either the palliative care team did not see the patient, or they did not properly document the goals of care discussion evidenced by an absent initial visit date. Sixteen of these patients were re-admitted after the study period, so the original initial visit date during the study period timeframe is unable to be determined. Eleven of these patients did not have a documented initial visit date. This could be due to either poor documentation or that a goals of care discussion did not occur, which is a major failure. However, this is not something that is able to be determined.

Another limitation to this DNP project is the relatively small study sample size. This could possibly be due to improper admission documentation of patients who do have pre-existing advance directives at the time of admission but are not charted as such in the EHR. It could also be due to the lack of knowledge the general population has about the importance of advance directives, leading only 142 out of the 2,022 ICU admissions in 2017 having pre-existing advanced directives.

Conclusion

Millions of patients are admitted to the ICU nationwide each year, and difficult decisions are often necessary in these stressful environments. Both patients and family members may need support when making tough decisions. The Doctorate-prepared AGACNP has the knowledge and training to provide all options to patients and their families regarding available treatment approaches, goals and outcomes of care, and transitioning from aggressive and invasive medical treatment to comfort therapy. AGACNPs have the ability to make a difference in goal-directed care for critically-ill patients through conversations with patients and their families.

Many patients admitted to the ICU with a pre-existing DNR status may benefit from the knowledge of the AGACNP and palliative care team so their goals of care can be identified, and treatment that is not desirable can be avoided. Outcomes of this DNP project indicate that a gap in care is present in those admitted to the ICU with a pre-existing DNR status, because 71% of patients admitted to the ICU with a pre-existing DNR status did not receive a palliative care consultation. Four patients with a pre-existing DNR status died in the ICU without receiving a palliative care consultation. A palliative care consultation, signifying a goals of care discussion occurred at this institution, would ensure that all healthcare providers, including the AGACNP, are on the same page as the patient and their family regarding the goals of care and treatment

plan. The results and information obtained from this project can be used to guide quality improvement projects championed by the AGACNP aimed at creating a protocol requiring a palliative care consultation to be ordered within 24 hours of admission to the ICU in those with a pre-existing DNR status so that goals and plan of care can be in alignment. An example of this could be designing a pilot program using the EHR which would flag the provider to consult palliative care in those admitted to the ICU with a pre-existing DNR status. With the knowledge and use of Kolcabas' comfort theory and the results of this study, the gap in care regarding importance of establishing goals of care can be narrowed.

APPENDIX A:

DATA COLLECTION TOOL

Patient	Age	Gender	Code Status on admission	Palliative Care Consult (Y/N)	Days after admission Palliative Care Consult ordered	Discharge Disposition
1						
2						
3						
4						
5						
6						
7						
8						
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35						

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