

PALLIATIVE CARE: ATTITUDES AND PRACTICES OF TRAUMA CARE
PROVIDERS

by

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As members of the DNP Project Committee, we certify that we have read the DNP Project prepared by Liana Iris Haynes entitled “Palliative Care: Attitudes and Practices of Trauma Care Providers” 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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I dedicate this DNP project to my father, Bill Haynes. He was a passionate, tenacious, and generous man who pushed me to achieve things that I never thought possible, and encouraged me to never settle. He taught me to cherish every day, appreciate the little things, and never lose sight of who I am.

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ABSTRACT

Background: Palliative care focuses on improving quality of life for patients and their families by providing relief from the stress, pain, and other symptoms of a serious disease or injury.

Trauma care has a heavy focus on improving resuscitation efforts, which has left little room in the literature for studies on utilization of palliative care in this population.

Objective: The purpose of this DNP project was to better understand the use of palliative care for trauma patients at a Level 1 trauma center in southern Arizona to inform a future quality improvement (QI) project.

Project Design: A survey was completed to determine 1) how palliative care is utilized for trauma patients at this institution; 2) what barriers exist for the use of palliative care in this population; 3) what is the culture of the trauma team regarding palliative care; and 4) whether there are differences in palliative care use between physicians and advanced practice providers (APPs) on the trauma service.

Participants and Setting: Eleven trauma APPs and attending physicians at a Level 1 trauma center in southern Arizona.

Measurements: APPs and physicians were surveyed using a survey tool created by the author to answer the project questions. This survey assessed barriers to the use of palliative care, situations and patient characteristics prompting palliative consults, previous education in palliative care, comfort with difficult topics and symptoms, and suggestions for improving palliative care use at this facility.

Results: As a team, there was agreement between APPs and attending physicians that lack of timely availability of palliative care staff was a barrier to initiating consults, in addition

resistance from families regarding palliative care. Both groups were also likely to consult palliative care for assistance with transitions of care and when there is family conflict in decision making. Both groups felt that increased availability of palliative staff to cover nights and weekends, as well as provider education on palliative concepts would improve utilization of palliative care.

Conclusion: Future QI projects should focus on provider-identified interventions to improve palliative care use, such as continuing education on palliative care and increased availability of palliative care staff.

INTRODUCTION

Traumatic injuries account for 2.3 million hospital admissions in the United States each year, resulting in almost 200,000 deaths (Martin et al., 2014; National Trauma Institute, 2014). Despite advances in trauma care, trauma patients who die in the emergency department account for about 20% of trauma-related deaths, and trauma patients admitted to the Intensive Care Unit (ICU) have an almost 20% mortality rate (Calland et al., 2012; Martin et al., 2014). Trauma care has historically been influenced by the drive for life-saving at all costs, which has created a culture of reflection, innovation, and improvement, but has also resulted in a patient population that is sicker than ever before (Mosenthal et al., 2012). Due to the heavy focus on improving resuscitation efforts, there has been little focus on palliative care in the trauma population, despite evidence of an existing need (Karlekar et al., 2014; Kupensky et al., 2015).

Background Knowledge

Palliative care focuses on improving quality of life for patients and their families by providing relief from the stress, pain, and other symptoms of a serious disease or injury (Center for the Advancement of Palliative Care [CAPC], 2011). Rather than taking over care, palliative care teams work with the patient's primary providers to create an "extra layer of support," and can work alongside curative treatment (CAPC, 2011, p. 7). All clinicians practice basic features of palliative care, such as symptom assessment and treatment, however certain aspects of care often require expert palliative clinicians. These include assessment and management of severe physical and emotional distress, family burnout, discussion of patient-centered goals of care, and coordination related to transition of care (Hospitals in Pursuit of Excellence [HPOE], 2012). Transition of care describes changes in place of care (such as the transition from hospital to

home), transition between levels of professionals providing care (i.e., acute care to hospice or a rehabilitation center), or changes to the goals of care (Hui et al., 2014).

While there is little research on palliative care in the trauma population specifically, research in palliative care within ICU and Emergency Department (ED) settings cite several barriers to palliative care referrals for patients who are critically ill. These include inadequate provider knowledge of palliative care services, lack of provider experience with end-of-life discussions, lack of perceived time, misconceptions that palliative care is only for end-of-life care, and fear of patient and family responses to a discussion regarding initiation of a palliative care consult (DeVader & Jeanmonod, 2012; Karlekar et al., 2014; Martin et al., 2014; Tilden et al., 2009). In a survey of surgical residents, Klaristenfeld, Harington, and Miner (2007) found that although 100% of residents felt that palliative care training is valuable for surgeons, only 9% felt they had received adequate palliative care training during residency. Trends are similar for residents in the ED, with only about 18% of ED residents receiving formal training in end-of-life care (DeVader & Jeanmonod, 2012). These studies do not look individually at Nurse Practitioner (NP) or Physician Assistant (PA) training and comfort with palliative care, however the American Association of Colleges of Nursing (AACN) sponsors the End-of-Life Nursing Education Consortium, which offers training for advanced practice providers (2016).

Comfort with palliative care and end-of-life discussions does not appear to improve as physicians advance in their practice. Martin and colleagues (2014) found that although 65% of physicians rely on families to make end-of-life decisions when patients are unable to speak for themselves, 80% of those same physicians feel that family members are often not in a sound emotional state to make those decisions. In addition, the literature shows that both attending

physicians and residents are often reluctant to discuss goals of care and palliative care consults with patients and/or their families for fear that they will be perceived as “giving up” (Karlekar et al., 2014, p. 1064).

The initial prognosis is often not entirely clear for trauma patients, so palliative care consults are frequently delayed due to fear that families will misinterpret intentions or that the palliative team will miscommunicate prognosis to families (Karlekar et al., 2014). However, research shows that the opposite is true—palliative care consults often improve communication between staff and families about goals of care, transitional care, family support, and symptom management (Karlekar et al., 2014; Martin et al., 2014; Mosenthal et al., 2012). Palliative care has also been shown to decrease hospital length of stay and cost (Kupensky et a., 2015; Mosenthal et al., 2012).

One strategy to increase palliative care referrals in the ICU has been with the development and use of palliative care referral checklists that provide a standardized set of referral criteria; however, these checklists have never been used exclusively with trauma patients (Martin et al., 2014). Palliative care referral checklists have primarily been used in the medical ICU, and often the criteria are not specific to the surgical patient (Bradley, Weaver, & Brasel, 2010). Bradley and colleagues (2010) attempted to address this issue by implementing a modified trigger checklist in a surgical ICU, however they did not distinguish between trauma patients and general surgery patients. While many trauma patients require surgery, it is important to distinguish between trauma and general surgery patients for a variety of reasons. First, while trauma patients tend to have similar morbidity and mortality rates compared to emergency general surgery patients, they have higher rates of morbidity and mortality than elective surgery

patients (Ingraham et al., 2012). In addition, while general surgery patients have a specific problem that precipitated their surgery, trauma patients often have a multitude of problems, including head, spinal, chest, and abdominal injuries (Ingraham et al., 2012). Thus, these patients are in a separate and unique class from general surgery and general medicine patients.

Other interventions have included comfort care order sets and multi-disciplinary task forces within intensive care units to provide education on end-of-life discussions and principles of palliative care (Wessman, Sona, & Schallom, 2015). However, for interventions to be successful, unit culture must be considered. For example, two trauma ICUs will often have different ways of providing care based on unit structure, history, policies, and attitudes of providers (Mosenthal et al., 2012). Therefore, it is necessary to evaluate provider perceptions of palliative care in the context of the trauma population as an initial step in the creation and implementation of interventions aimed at increasing palliative care referrals in this population.

Local Problem

Inpatient palliative care services have increased rapidly in the last 10 years, with almost all hospitals with greater than 250 beds reporting that they have a palliative care team (HPOE, 2012). The hospital where this project was implemented fits this demographic and has a palliative care team that provides primarily weekday coverage, consisting of palliative care physicians as well as nurse practitioners. This hospital is a Level 1 trauma center and teaching facility with over 400 beds. All trauma patients are overseen by trauma attending physicians, who also manage surgical care of patients in the surgical-trauma intensive care unit (STICU). STICU patients are also managed by critical care physicians, which is indicative of the open model of care that is seen in most STICUs (Mosenthal et al., 2012). There are three trauma teams

that are managed by seven trauma attending physicians, three acute care nurse practitioners (ACNPs), one PA, and multiple surgical residents who rotate through the service monthly. The trauma teams have an average of 15 to 20 patients on each team, and these teams manage patients on the general floors and step-down unit, as well as the STICU. While the ACNPs and PA round with the team in the STICU, they focus primarily on management of patients outside of the STICU.

Although this hospital has a palliative care team, no designated criteria exist for referral of trauma patients, and there is little palliative care team presence in this patient population. Because palliative care has been shown to decrease costs, hospital length of stay, and readmissions, as well as improving patient and family satisfaction (HPOE, 2012), it is imperative that the facilitators and barriers for use of palliative care in the STICU and trauma step-down unit are determined in order to meet the palliative care needs of trauma patients in this institution.

Intended Improvement

The purpose of this DNP project was to assess attitudes and practices of trauma attending physicians and advanced practice providers (APPs) regarding palliative care use in a Level 1 trauma center. A survey was utilized to obtain this information, and the results may be used to guide future work aimed at improving the quality of palliative care services in the STICU and step-down unit. This project answered several important questions: 1) how palliative care is utilized with trauma patients at this institution; 2) what barriers to palliative care use exist for this unique population; 3) what is the culture of the trauma team regarding palliative care; and 4) do practices and beliefs differ between physicians and APPs. On a service that heavily utilizes APPs

in comparison to other services at this facility, it is important to consider potential differences between provider types when developing a quality improvement (QI) project that requires buy-in from multiple specialties.

According to Nelson and colleagues (2010), there are two models for the use of palliative care in the ICU, the consultative model and the integrative model. The consultative model involves increasing palliative care referrals in the ICU, especially for patients who are at a high risk for poor outcomes. This model is where palliative care trigger checklists often come into play, including factors such as baseline patient characteristics, diagnosis, or other healthcare use criteria, such as referral for tracheostomy placement (Nelson et al., 2010). At the other end of the spectrum is the integrative model, which focuses on integrating palliative care principles and practices into the ICU, applying these principles to all patients and their families (Nelson et al., 2010). This model is helpful because the severity of illness seen in ICUs often means that most patients and their families have palliative care needs, and specialized palliative care resources would simply not be able to meet the demand for palliative care. These models are at two ends of the spectrum, with most ICUs utilizing a combination of both models (Nelson et al., 2010). While these models are not specifically discussed in the literature for step-down units, the consultative model would likely be used in the step-down unit and wards at this facility, as there are generally fewer patients requiring palliative care outside of the STICU.

Prior to the implementation of a palliative care service improvement project, it is important that the model for palliative care utilization is identified, either integrative or consultative. Multiple factors should be taken in to consideration prior to selecting a model for improvement, including resources available, the organizational structure, patterns of practice,

and attitudes of stakeholders (Mosenthal et al., 2012). It is also important to consider pros and cons of each model. For example, the consultative model includes expertise from a highly-specialized service that is often not available in the ICU or trauma step-down, and is often most appealing to high-volume hospitals (Mosenthal et al., 2012). However, surgeons may be reluctant to consult a palliative care specialist due to a perception that this signifies a failure of surgical management, or fear that there will be pressure to limit ICU treatments (Mosenthal et al., 2012). On the other hand, the integrative model can be useful because it signifies palliative care as an important component of intensive care, promotes education in palliative care for all ICU clinicians, and moves clinicians away from the view of surgical care versus palliative care. However, one disadvantage is the reliance on a high level of commitment and training in palliative care for all trauma clinicians, which can serve as a barrier (Mosenthal et al., 2012).

Attitudes of key stakeholders are one of the most important components of quality improvement projects, and many questions previously discussed can be answered by understanding stakeholder attitudes and priorities (Mosenthal et al., 2012). It is vital to understand who the stakeholders are prior to quality improvement efforts, as this will aid in creating an interprofessional workgroup to champion the palliative care improvement project. Once a formal workgroup is established for quality improvement, the group can then use the results of this survey to inform/determine needs and resources, develop an action plan, and engage the team in culture change (Mosenthal et al., 2012).

Due to the open care model that is seen in most STICUs, both ICU physicians and surgeons are key stakeholders, as they guide the care of critically ill patients, and often have different perspectives. Members of hospital leadership are also important stakeholders because

they can identify the project as a priority within the institution and facilitate new policies (Mosenthal et al., 2012). These members should include senior nursing leadership as well as directors of relevant departments, such as the STICU, trauma step-down unit, and emergency department. Palliative care team members are also important stakeholders, because they will be affected by any intervention that may increase palliative care referrals, and it is important to ensure they have adequate resources.

Project Questions

1. How is palliative care utilized for trauma patients at a large trauma center?
2. What barriers exist for the use of palliative care in this population?
3. What is the culture of the trauma team regarding palliative care?
4. Are there differences in palliative care use between physicians and advanced practice providers?

FRAMEWORK AND SYNTHESIS OF EVIDENCE

Theoretical Framework

The Knowledge-to-Action (KTA) framework is a planned action theory that was developed by Graham and colleagues (2006) after they conducted an analysis of the concepts found in a total of 31 planned action theories. This framework offers a holistic approach to knowledge translation by integrating social interaction, context, and culture (Graham et al., 2006). The KTA framework is comprised of a set of action categories that were then developed to form the different stages of planned action making up knowledge translation. Knowledge translation is defined as a “dynamic” process that involves the creation, synthesis, exchange, and dissemination of knowledge to improve health practices (Graham & Tetroe, 2007, p. 936).

Planned action theories provide a systematic way of describing knowledge translation to help change agents understand and control variables that may hinder or facilitate change. Although individuals are considered and included in planned action theories, the ultimate objective is to change practice within a larger social system (Graham & Tetroe, 2010).

Like other theories of knowledge translation, the KTA framework utilizes a systems perspective, with fluid boundaries and complex interactions between researchers and knowledge users (Graham & Tetroe, 2007). While this model values empirical knowledge, it also values contextual knowledge, and relies on a collaborative effort between researchers and knowledge users rather than researchers focusing only on disseminating new knowledge. In fact, a major component of this model is that the end users of knowledge are included throughout the entire process, ensuring that the knowledge and its implementation are consistent with their needs (Straus, Tetroe, & Graham, 2011). Per Graham and Tetroe (2010), strict adherence to all phases of the KTA framework will not ensure successful application of knowledge to practice if local context and relationships are not considered.

The knowledge creation stage of the KTA framework is symbolized by a funnel structure, consisting of knowledge inquiry at the top, knowledge synthesis in the middle, and creation of knowledge tools or products at the bottom (Straus et al., 2011). As the stages move down the funnel, knowledge becomes more refined and useful to the end-user. The knowledge inquiry stage involves building knowledge about a specific problem or practice, and the synthesis stage then aims to recognize patterns such as disparities in the research (Graham & Tetroe, 2010). When the tool development stage is reached, decision-making tools can be created, such as

computerized clinical decision aids, algorithms, or clinical practice guidelines (Straus et al., 2011).

There are seven action phases within the KTA framework that can occur sequentially or simultaneously, and can be influenced by the knowledge phases at any point within the cycle (Straus et al., 2011). These stages include problem identification, adaptation of knowledge to a local context, barrier assessment, selection and tailoring of interventions, monitoring the use of knowledge, evaluating outcomes, and sustained knowledge use (Straus et al., 2011). Each phase has several constructs that were identified by Graham and Tetroe (2007) from the literature, and should guide the focus of each stage.

The problem identification stage involves reviewing and selecting knowledge, identifying a need for change, identifying change agents, and determining the target audience (Graham & Tetroe, 2010). In the next phase, the innovation is developed and adapted to a local context, which includes assessing barriers and facilitators to knowledge use (Graham & Tetroe, 2010). Specific interventions are then selected and tailored to the local culture, and individuals who will have a vested interest in the project are identified. In this stage, the intervention is pilot tested and implemented (Graham & Tetroe, 2010). In the evaluation phase, a plan for evaluation is developed, and both the process and outcomes are evaluated. Lastly, a plan is developed to maintain the change and disseminate results (Graham & Tetroe, 2010). While these steps may be performed in a sequential manner, researchers may find that certain steps need to be repeated throughout the process, or that steps can be performed together. For example, it may be logical to determine how outcomes will be evaluated while specific interventions are being created (Graham & Tetroe, 2010).

This Doctor of Nursing Practice (DNP) project focuses on the knowledge creation components of inquiry and synthesis, and the knowledge action components of problem identification and barrier assessment. The literature review process is part of the knowledge inquiry and knowledge synthesis phases. This process facilitates identification of the problem, which involves a lack of palliative care use with the trauma population. The problem was considered within the local context of a Level 1 trauma center in southern Arizona, and barriers to using palliative care were assessed by surveying attending physicians and APPs who are key stakeholders, as they serve as constant forces on the trauma team. Residents were not identified as stakeholders as they rotate through the trauma service monthly. This information provides the foundation for future work that will involve tailoring and implementing an intervention aimed at improving knowledge and use of palliative care in the trauma population.

Concepts

The major concepts of this project include palliative care and culture in the context of the trauma service and trauma units. A definition of trauma as it relates to this project is also provided, as well as a definition of advanced practice providers.

Culture: Culture within a unit, organization, or team is molded by attitudes and interactions between different disciplines, as well as history, structure, policies, and processes of care (Mosenthal et al., 2012). For example, the culture of trauma care surrounds resuscitation and prolonging life, whereas the culture of palliative care surrounds communication and symptom relief. Understanding the unique cultures of these two services is important for the integration of palliative care concepts within the trauma service.

Palliative care: Palliative care is specialized medical care for anyone with serious illness or injury, regardless of the specific diagnosis (CAPC, 2011). The focus of palliative care is improvement of quality of life through expert symptom management, and can be provided alongside curative treatment (CAPC, 2011). Palliative care is appropriate at any stage of illness trajectory, and is provided by a team, usually including physicians, nurses, social workers, case managers, and APPs. Palliative care also aims to provide relief from the stress of a serious illness for both patients and their families (CAPC, 2011).

Trauma: A traumatic injury is defined as a physical injury resulting from an external force that causes tissue damage, which is a result of energy transfer that is beyond the body's resilience (Burlew & Moore, 2015). Traumatic injuries are comprised of both unintentional and intentional mechanisms. Trauma causing unintentional injury includes motor vehicle collisions, accidental poisoning, fires, drowning, and falls. In contrast, intentional injuries are caused by interpersonal or collective violence, as well as self-inflicted insults (McKinzie, 2014).

Advanced practice provider: For the purposes of this DNP project, the term advanced practice provider encompasses NPs and PAs working on the trauma team. Although these disciplines may have very different roles in other settings, in the context of the trauma team at this facility these two disciplines function in the same capacity.

Synthesis of Evidence

Search Strategy

PubMed and CINAHL were searched utilizing the terms “palliative” and “trauma,” which returned 354 articles. Inclusion criteria of English language, humans, and articles published in the past five years were applied, resulting in 78 articles. Of those articles, five included trauma

patients as the specific population of interest; one focused on palliative care specifically, and one focused on withdrawal of care. When inclusion criteria were expanded to include articles within the past 10 years, four more relevant articles were found.

To broaden the literature search, PubMed and CINAHL were then searched utilizing the MeSH terms “palliative” and “intensive care,” yielding 536 results with application of inclusion criteria. The filter “adult, 19+ years” was applied to narrow the results, yielding 224 articles. Articles were excluded if they studied a specific population other than trauma patients (for example, cardiac disease or cancer patients), yielding a total of 25 relevant articles.

To determine if there was literature specifically discussing the role of nurse practitioners in providing palliative care to trauma patients, PubMed and CINAHL were searched utilizing the terms “nurse practitioner” or “advanced practice nurse,” and “trauma” and “palliative,” yielding no results. To broaden the search, the same keywords were utilized in Scopus, yielding one article that was not relevant. Searching Scopus, PubMed, and CINAHL for “palliative” and “nurse practitioner” or “advanced practice nurse” yielded 185 articles. Articles included the use of nurse practitioners on palliative care and oncology teams; however, there were no articles discussing the association between nurse practitioners and palliative care within the trauma population.

In total, the 10 most relevant articles published within the last 10 years were utilized for the synthesis of evidence (Appendix F). Articles were considered relevant to this DNP project if they included content about palliative care referral criteria, attitudes of ICU, trauma, and emergency providers regarding the use of palliative care, provider comfort with discussion of palliative care, and specific interventions aimed at improving the use of palliative care in the

intensive care unit. Of the 10 articles used, eight were published within the past five years, and two were published within the past eight years. The older articles were chosen because they included trauma patients specifically in their studies.

Current Practice

There is often disagreement between physicians within the same hospital and service about a specific time frame for consulting palliative care. Tilden and colleagues (2009) found that timing of palliative care consults was generally based on the surgeon's diagnostic criteria, the patient's illness trajectory, and the surgeon's goals; however, these criteria were not consistent among surgeons. While surgeons were generally more likely to consult palliative care if the patient's prognosis was poor, it was less clear for patients with an unknown illness trajectory. In this case, some surgeons were more likely to involve palliative care early on to help clarify goals, while others were more likely to pursue more aggressive treatment before consulting palliative care (Tilden et al., 2009). Surgeons also cited concerns that palliative care teams may miscommunicate a patient's illness or prognosis to their families, however in reality the opposite was true (Karlekar et al., 2014). Reasons for consulting palliative care included assistance with transition of care, desiring a differing viewpoint, and—occasionally—symptom management (Tilden et al., 2009).

Barriers and Facilitators

The overarching theme regarding barriers to the use of palliative referrals in trauma, ICUs, and the ED was fear of resistance from families and fear that physicians would be seen as giving up (DeVader & Jeanmonod, 2012; Karlekar et al., 2014; Tilden et al., 2009). Physicians cited both fear that discussions of palliative care would cause families to misinterpret intentions

of the medical team, as well as actual resistance from families when palliative care was brought up (DeVader & Jeanmonod, 2012). A major concern was also fear of legal action from families for “not being aggressive enough,” particularly if there was disagreement between the patient’s family and the medical team (DeVader & Jeanmonod, 2012, p. 513; Karlekar et al., 2014).

Another common theme in the literature was education and comfort level of the treating physician. Physicians cited a lack of education about palliative care and end-of-life discussions, as well as a lack of comfort with these discussions (DeVader & Jeanmonod, 2012). In the ED and trauma population specifically, there was the added complication of a sudden illness or injury that left little time for decision making, rather than an illness with a prolonged trajectory. Thus, families often had higher expectations of recovery, and there was less time for the physician to build a rapport with the family (DeVader & Jeanmonod, 2012; Karlekar et al., 2014). A lack of available palliative care staff was also cited as a barrier, especially in facilities where the staff was not available 24/7 (DeVader & Jeanmonod, 2012; Lamba et al., 2013).

Factors that facilitated palliative referrals were the availability of a board-certified palliative physician, as well as patient characteristics such as minimal responsiveness for greater than one week (Karlekar et al., 2014). Tilden and colleagues (2009) found that surgeons were most likely to consult palliative care for patients who they felt would eventually die from their injuries, and patients whose condition was likely to be chronic. Wessman et al. (2015) found that the creation of a specific order set for comfort care, staff education on best practices regarding palliative care, and creation of a designated space for family meetings would improve the use of palliative care and communication regarding end-of-life. This is consistent with Mosenthal and colleagues’ (2008) findings that family meetings also improved the use of advance directives and

do-not-resuscitate orders, without increasing mortality rates. Lastly, Hua and colleagues (2014) found that utilizing a set of triggers for palliative care consultation may improve the use of palliative care services, especially if these triggers were embedded in the electronic health record.

Outcomes and Patient Satisfaction

One study looked specifically at outcomes related to palliative care referrals for geriatric trauma patients, finding that patients who had a referral prior to day two of their hospital stay were more likely to have discussed advance directives and have an advance directive on file, had better symptom management, and had a decreased length of stay (Kupensky et al., 2015). Karlekar and colleagues (2014) found that palliative care consultation improved communication of prognosis to families, and improved communication between staff. Kupensky et al. (2015) also found that early palliative consultation resulted in earlier withdrawal of life support; however, it did not increase mortality rates.

Long and colleagues (2011) looked at decision making for patients with severe traumatic brain injury from the perspective of the surrogate decision makers, and found that these individuals often felt a lack of availability of the physicians. Survey participants felt that prognosis was often not completely discussed with them, and they wished that there was another member of the team available to speak with them when physicians were not available (Long et al., 2011). In general, surrogate decision makers relied on a multitude of factors when making decisions to withdraw or continue life-support, including prognosis, quality of life, intuition, and statistics (Long et al., 2011). Most practitioners rely on the family to make end-of-life decisions for patients; however, a large majority feel that family members are often not in an appropriate

emotional state to make those decisions (Martin et al., 2014). This shows the importance of accurate, frank, and supportive conversations between healthcare providers and family members.

Gaps in the Literature

Due to the nature of this subject, there were no randomized controlled trials (RCTs). There were also many retrospective chart reviews and reliance on surveys. There was a limited number of studies on palliative care in the trauma population specifically; rather, most research involves EDs and ICUs, which may not be representative of the unique characteristics of trauma patients. The reasons for the lack of RCTs regarding palliative care in the trauma population—and palliative care in general—are multifactorial. First, high-quality RCTs must be adequately powered with an appropriate follow-up period. This is difficult to achieve in palliative care studies due to lack of patient availability, as well as the concern that recruiting would increase emotional burden to patients and their families in an already difficult time (Visser, Hadley, & Wee, 2015). In addition, it is difficult to validate RCTs in palliative care due to a lack of clear linkage between specific interventions and outcomes. For example, the practice of palliative care often necessitates that multiple treatments for multiple symptoms are initiated concomitantly, making it difficult to pin down a specific cause and effect (Visser et al., 2015). Traditional outcomes utilized in RCTs, such as morbidity and mortality are also largely inappropriate for palliative care research, as the goal of palliative care is to improve quality of life, not necessarily length of life (Visser et al., 2015).

Most studies collected data solely from attending and resident physicians, with very few studies utilizing APPs. The studies that did include APPs in the data collection did not separate data collected from APPs versus that collected from physicians (Martin et al., 2014). This is a

significant gap in the literature because there is no way to determine whether there are differences in attitudes and practices of palliative care use between physicians and APPs. If there are no differences, this would indicate that interventions aimed at improving palliative care use can be created and implemented without regard to discipline. However, if there are differences in practice and beliefs this may indicate that interventions need to be tailored for each discipline differently.

METHODS

Ethical Considerations

The eventual goal of this DNP project is the creation of a future QI project to increase palliative care referrals among the trauma population. However, ethical considerations utilized in traditional research projects still apply to this work, as individual providers will be participating.

Respect for Persons

Respect for persons is an ethical principle that entitles all individuals to be treated with autonomy, and requires special protection for vulnerable populations who may have diminished autonomy (USDHHS, 1979). The participants recruited for this project are practicing physicians and APPs in a large urban hospital who are not considered to be a vulnerable population. To ensure autonomy for the research participants in this DNP project, it was clearly stated that their participation was voluntary. The participants were given full disclosure regarding the purpose of the project and how their answers would be used. They were also informed that they may withdraw from the project at any time without penalty.

It is also important that participants are free from coercion, which can involve penalties for not participating as well as excessive rewards for agreeing to participate. This must be

balanced with the fact that small stipends are often used in research studies to increase participation (Polit & Beck, 2012). For this project, two 50 dollar Amazon.com gift cards were offered in a drawing regardless of whether individuals chose to participate. This was a way of thanking individuals for participating in the survey without coercing them to participate by offering a large reward.

Beneficence

Beneficence is the process of taking steps to ensure the well-being of study participants by maximizing possible benefits while minimizing possible harm (USDHHS, 1979). The completion of this project provided valuable data about practices and attitudes of palliative care use among trauma providers that can serve as the framework for a QI project in the future. The information collected from this project may inform a future QI project designed to strengthen palliative care services for trauma patients, which will increase the likelihood that it will be successful. This project also sought to provide information about differences in practices between professions, which is information that is currently lacking in the literature. There was minimal risk involved in this project. The research was conducted on a computer at the participants' own convenience, so there was no risk of physical or financial harm. The risk for emotional harm was minor because this project did not ask the participants to recall situations that may be stressful, and completion of open-ended questions was not mandatory.

Justice

Justice includes the right to fair treatment of all individuals, and the right to privacy (Polit & Beck, 2012). Participants should neither be selected nor excluded from research based on their vulnerability, nor should any group be discriminated against; rather, survey participants should

be selected based only on project requirements (Polit & Beck, 2012). Participants also have the right to privacy, and were informed that all their answers would remain anonymous. Both to ensure protection of privacy and promote unbiased answers, information that directly identified participants was not collected in the survey (Karlekar et al., 2014). Due to the small sample size of participants surveyed, the organization where this project took place was not named in order to ensure answers could not be tied to specific providers.

Design

Because the long-term goal of this DNP project is creating a QI project that improves the use of palliative care among the trauma population, this DNP project is currently in the evidence generating phase (Rouen, 2014). Specifically, this DNP project assessed attitudes and practices of trauma attending physicians and APPs regarding palliative care in a Level 1 trauma center, utilizing an organizationally-focused survey. Descriptive methodology is appropriate for this phase, as description can observe, describe, and document phenomena, and often serves as a starting point for needs assessment, as well as quality improvement projects (Polit & Beck, 2012; Rouen, 2014). Utilizing a descriptive methodology is helpful when planning a needs assessment because it aids in understanding the context within which a quality improvement project will take place, and identifies stakeholder perspectives (Polit & Beck, 2012). This is congruent with the KTA framework that guided this project, which includes knowledge creation, problem identification, and assessment of barriers and facilitators (Graham & Tetroe, 2007). Because a quality improvement project designed for trauma care providers would initially be aimed at attending physicians and APPs, a descriptive survey was an important first step to understanding

this group's perspective on the problem, and may serve as the starting point for a needs assessment in the future (Polit & Beck, 2012).

Setting

This project took place at a large Level 1 trauma center in southern Arizona. This is a teaching facility staffed with interns, residents, fellows, attending physicians, and APPs who provide care for trauma patients in a seven-bed trauma bay, a 24-bed trauma step-down unit, and a 20-bed STICU.

Participants

Participants for this project included the trauma attending physicians and APPs at this hospital. There are currently seven attending physicians, three NPs, and one PA who manage trauma patients on the trauma step-down unit, as well as the surgical care of trauma patients in the STICU. These providers who represent the trauma team were asked to participate. While patients are in the STICU, the STICU residents and fellows are responsible for their day-to-day management. The trauma team is responsible for the management of their traumatic injuries, and they collaborate with the STICU residents and fellows to create a comprehensive plan of care. While on the trauma step-down unit, the trauma team is responsible for providing full management of their patients. The trauma attending physicians are ultimately responsible for the care of trauma patients regardless of their location, and they work closely with other disciplines as well as family to determine the plan of care throughout the hospitalization. The trauma attending physicians and APPs were included in this project because they are constant forces on the trauma team. Residents and interns were excluded from this project because they rotate

between surgical services monthly and do not provide care to trauma patients exclusively throughout the year.

Tools for Data Collection

Questions from studies reviewed in the literature were considered in the creation of a single online survey (Appendix A) that fit the purpose of this DNP project. There are no existing questionnaires that have been validated in the literature, however several studies were identified that utilized a survey format with a large number of participants (Karlekar et al., 2014). One qualitative study was also found in the review of literature that utilized open-ended questions specifically with trauma surgeons (Tilden et al., 2009). In addition, feedback from the investigator's doctoral committee members as well as experts in trauma and palliative care was utilized for the survey creation. Feedback from a palliative care perspective was provided by Linda Snyder, MD, current program director for the Hospice and Palliative Medicine Fellowship at Banner University Medical Center, and professor of medicine in pulmonary critical care and palliative medicine at the University of Arizona. In addition, portions of a survey previously created by Snyder (Personal communication, October 11, 2016) were included with permission. Feedback from a trauma perspective was provided by Rubria Marines-Price (Personal communication, October 12, 2016), DNP, ACNP who was employed on the trauma service at University Medical Center from 2011-2014.

The survey consisted of 13 total questions divided into two demographic questions, two select all that apply questions, four 5-item Likert scales, three multiple choice questions, and one open-ended question that aimed to answer the project questions about utilization of palliative care at a Level 1 trauma center in southern Arizona, barriers to the use of palliative care, and

culture of the trauma team regarding palliative care. While there were no specific questions that assessed differences between APPs and attending physicians, including discipline as an initial demographic question allowed the investigator to separate and analyze each question by discipline and compare the results.

Utilization

There were three survey questions assessing current utilization of palliative care, and one question that asked providers to consider current palliative utilization and comment on potential interventions that would be appropriate at their current facility. Question #4 utilized a multiple-choice format to ask providers how many palliative consults they have placed in the past three months, aiming to determine how frequently palliative care is utilized by attending physicians and APPs. Questions #6 and #7 utilized 5-item Likert scales to better understand situations and prognostic indicators that were most and least likely to prompt palliative care consults. Lastly, question #12 utilized a select all that apply format to ask the providers which types of interventions would help increase the utilization of palliative care services for trauma patients.

Barriers

There were also three survey questions that assessed potential barriers to the use of palliative care for trauma patients at their facility. Question #3 inquired about previous education in palliative care, as earlier studies have suggested that a lack of education about palliative care can serve as a barrier to the use of palliative care for physicians (DeVader & Jeanmonod, 2012). Question #5 assessed knowledge of palliative care by providing one true statement about palliative care (“Palliative care consults can be used to assist with symptom management, even if the patient has a good prognosis”) and four false statements about palliative care that are

common misconceptions seen in the literature. Assessing knowledge of palliative care concepts was important because a lack of knowledge of palliative care can also serve as a barrier to the utilization of palliative care (DeVader & Jeanmonod, 2012; Karlekar et al., 2014). Lastly, question #11 of the survey assessed comfort levels with difficult topics such as giving bad news, discussing prognosis and withdrawal of life support with families, and symptom management at the end of life. This question was included because previous studies have shown that lack of comfort level with these topics can influence the use of palliative care, and that increasing comfort with these topics can improve both utilization of palliative care services and end-of-life care (DeVader & Jeanmonod, 2012; Mosenthal et al., 2008).

Culture

Culture within an organization or group can influence how services such as palliative care are utilized, and should also be considered any time a potential practice change is being planned (Mosenthal et al., 2012). Culture can be better understood at this institution by asking providers about their beliefs surrounding palliative care. Question #8 asked providers how often they find palliative care consults to be beneficial in their institution, which is important to consider when implementing an intervention aimed at increasing palliative care consults. For example, if providers feel that consults are never beneficial, then an intervention aimed at increasing palliative consults would likely be ineffective without further research as to why providers feel that way. Question #9 also assessed culture by asking providers whether they felt palliative care was over, under, or appropriately utilized at their institution. Again, if providers feel that palliative care is already over utilized, an intervention aimed at increasing utilization would not make sense for this group. Lastly, question #10 was also aimed at assessing culture by

asking providers what they perceive as barriers to palliative care use for trauma patients. By better understanding provider-perceived barriers, future QI projects can aim to address these barriers.

Process for Data Collection

After both the University of Arizona (Appendix B) and the medical center's (Appendix C) institutional review board determined that this project did not meet criteria for human subjects research and approval was granted to begin the project, an e-mail was sent to the physicians and APPs on the trauma team inviting them to participate in the survey. The e-mail included an introductory letter (Appendix D) that described the purpose of the survey as well as potential risks and benefits. The e-mail contained a link to complete the survey within the online platform Qualtrics. There was initially only one survey returned in the first week after the e-mail was sent, so additional face-to-face recruiting (Appendix E) with the trauma team members took place at the start of the second week while they were on service. Participants had two weeks to complete the survey once it was started, and it was anticipated to take no more than 10 minutes.

Consent for participating in the survey began the survey. The consent was provided online prior to the first page of the survey, and included potential risks, benefits of completing the survey, the purpose of the survey and information about how to enter the drawing for one of two 50 dollar Amazon.com gift cards. Following, the participant read this statement: "By clicking 'Agree' and continuing to the survey, I acknowledge that I have read and understand the informed consent process, and that I can exit the survey at any point without penalty." If the participants clicked "I do not agree" the survey was not opened and they were redirected to a page that thanked them for their time.

As a thank-you for assisting with the project, providers were also sent a separate link within the initial recruitment e-mail that directed them to a separate Qualtrics page where they could enter their name and e-mail address for entry into the Amazon.com gift card drawing. By providing a separate link, this ensured that their name and e-mail address would not be associated in any way with answers to survey questions, and ensured that participants could enter the drawing without participating in the survey, per Institutional Review Board requirements.

Once the survey period was over, the goal was to transfer the names into a Microsoft Excel spreadsheet with a corresponding number based on the order in which they entered (i.e., the first person to enter was labeled with the number one). A random winner would then be selected utilizing the following equation: =randbetween(1,upper), where “upper” would be replaced with the number of the last person to enter. Utilizing Excel, this equation would then randomly select a number, and this was the first winner of the gift card. The equation would then be utilized a second time to determine the second winner, and winners would then be sent their Amazon.com gift card via e-mail. However, there was not a single participant that entered the Amazon.com gift card drawing, so this process was not utilized. Confirmation was obtained that the link did in fact work for the providers.

Budget

The resources and budget needed for this project were minimal and easily met. A computer was required to create the online survey. Qualtrics is a survey program that is provided free of charge to University of Arizona students, so there was no cost for survey creation and dissemination. Two 50 dollar gift cards were also included in the budget to increase likelihood of

participation, however there was no need to purchase these gift cards because providers did not enter the drawing.

Data Analysis

After the survey period was over the descriptive data were compiled and analyzed utilizing Qualtrics and Microsoft Excel. Because there are no previous studies known to the investigator that compare palliative care practices and attitudes between trauma APPs and trauma physicians, answers from these two groups were separated and reported graphically to make the data more meaningful (Keller & Kelvin, 2013). The open-ended question at the end of the survey was aimed to capture any information not covered by the previous survey questions to identify any recurring themes. Because there were only two responses to the open-ended question, it is difficult to pull themes from this information, however each question was analyzed individually.

RESULTS

Description of the Sample

The survey was distributed to the seven attending physicians, three NPs, and one PA on the trauma team at a Level 1 trauma center in southern Arizona. Because there is only one PA on the trauma team, the NPs and PA were grouped into the discipline of “Advanced Practice Provider” to ensure anonymity of the respondents. Of the 11 surveys distributed, six were returned for a response rate of 54% (Table 1). Respondents included three APPs (75%) and three attending physicians (43%). Total years in practice ranged from less than five to over 20 years in practice.

TABLE 1. *Demographic Information*

Characteristic	Frequency	Valid Percent
Discipline		
-Attending Physician	3	50
-Advanced Practice Provider	3	50
Years in Practice		
-0 to 5	1	16.6
-6 to 10	3	50
-11-20	1	16.6
-Over 20	1	16.6

Utilization

Survey question #4 (Appendix A) asked providers approximately how many patients they had placed a palliative care consult for in the past three months. The attending physicians (n=3) and two of the APPs reported having placed one to five palliative consults in the last three months, with one APP having placed zero palliative consults in the last three months. Question #6 utilized a 5-point Likert scale to assess which scenarios prompted initiation of palliative consults by the providers. Family conflict in decision making and grief counseling for families had the highest percentage of physicians rating them as somewhat likely to encourage initiation of a palliative consult (Figure 1). Hospice referrals, assistance with symptom management, and lack of identifiable decision maker all had one physician rate them as somewhat likely to prompt referrals, while the rest had a neutral response. Assistance with communicating prognosis was the least likely category to prompt a palliative consult among physicians, while conflict between family and staff regarding goals of care was mixed. Assistance with transitions of care also received a mixed response, ranging from least likely to somewhat likely to prompt a palliative consult.

APPs were most likely to consult palliative care for assistance with transitions of care, in addition to family conflict in decision making, hospice referrals, and assistance with symptom management. In addition, APPs were somewhat likely to consult palliative care for conflict between family and staff regarding goals of care and grief counseling for families. While one APP reported being somewhat unlikely to consult palliative care for assistance with communicating prognosis to families, the other two reported this situation making them somewhat likely to consult. Unlike the physician group, consulting palliative care to assist when there is a lack of identifiable decision maker was evenly distributed between least likely, somewhat unlikely, neutral (Figure 2).

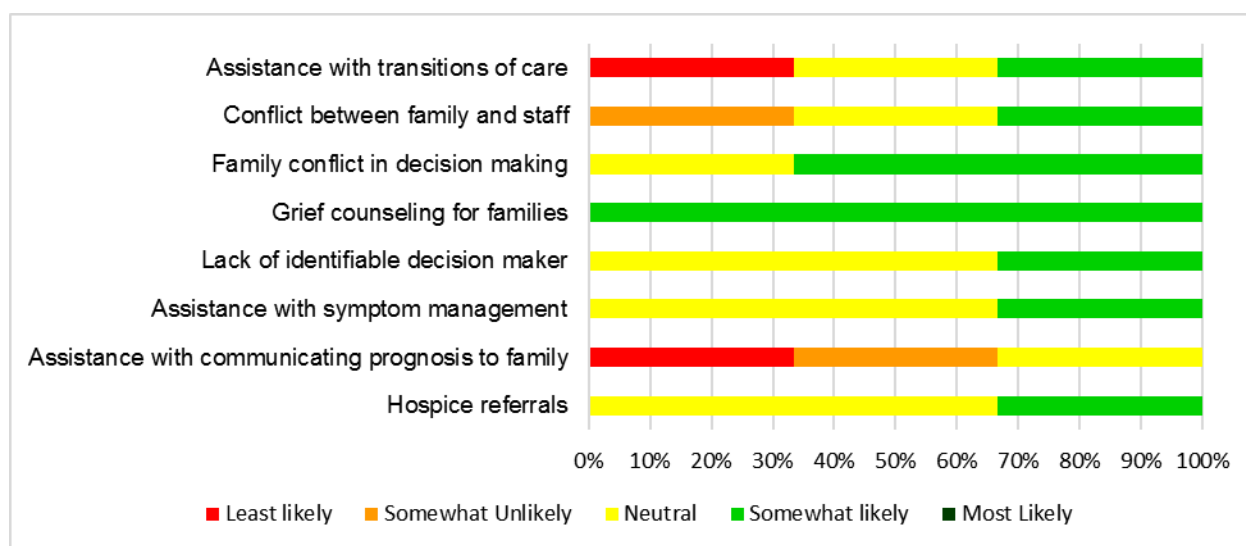


FIGURE 1. Situations Prompting Initiation of a Palliative Consult by Physicians

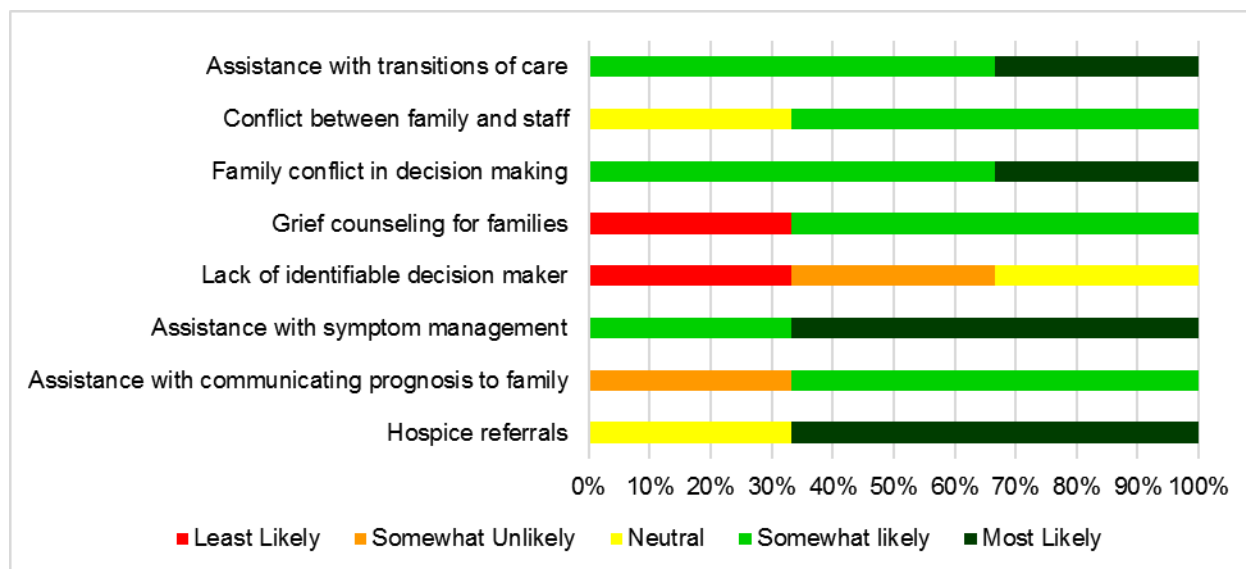


FIGURE 2. Situations Prompting Initiation of a Palliative Consult by APPs

Question #7 utilized a 5-point Likert scale to evaluate how patient prognosis affected utilization of palliative care among this provider group. Attending physicians and APPs were in disagreement about the likelihood of consulting palliative care for a patient with an expected survival of one week or less. This scenario was most likely to prompt a palliative care referral from APPs (Figure 3); however, it was least likely to prompt a palliative referral from attending physicians (Figure 4). Both groups were neutral to least likely to consult palliative care when prognosis is unknown. APPs stated they were most likely to consult palliative care for patients with an expected survival of six months or less, whereas physicians were equally mixed between neutral, somewhat likely, and most likely to consult for this prognosis. Physicians and all except APP agreed that an expected survival of six months or more with a suspected poor quality of life would make them somewhat likely to place a palliative referral; however, one APP rated this as least likely to prompt a consult. Attending physicians were also less likely to consult when

expected survival was greater than six months with an unknown quality of life, whereas the results were mixed in this category for NPs.

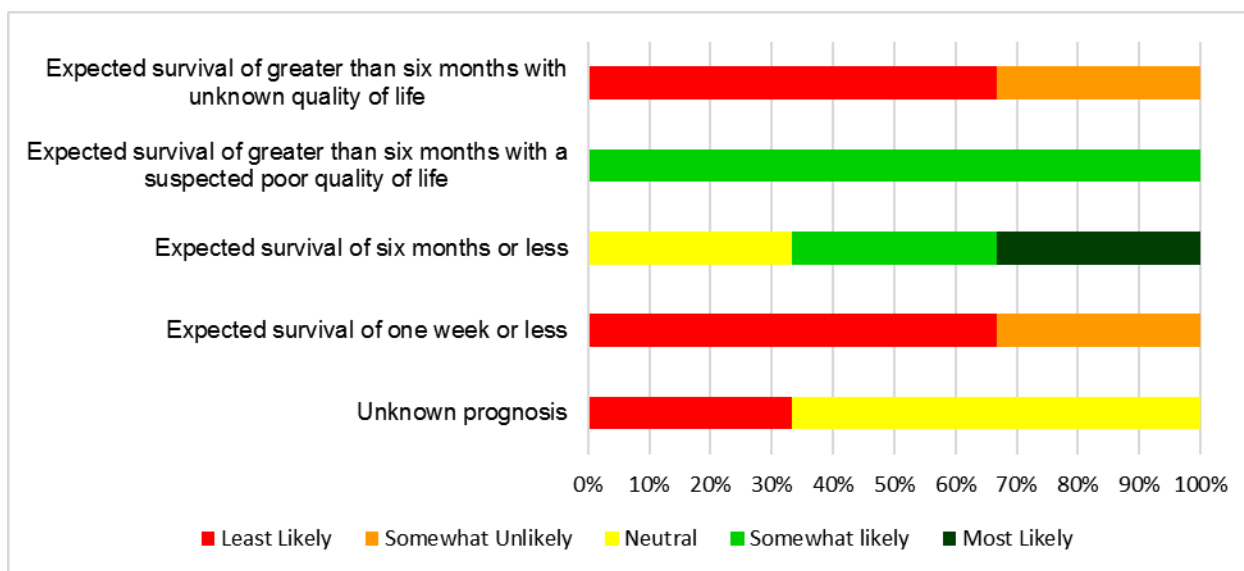


FIGURE 3. Effect of Prognosis on Physician Likelihood to Consult Palliative Care

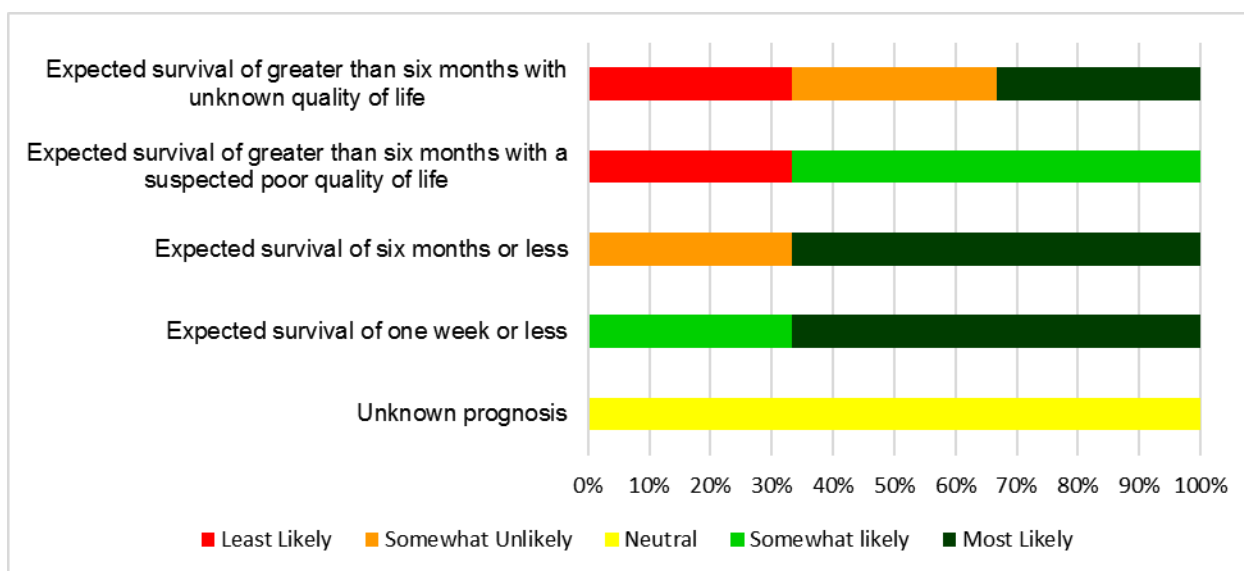


FIGURE 4. Effect of Prognosis on APP Likelihood to Consult Palliative Care

Question #12 used a select all that apply approach to assess how utilization of palliative care could be improved at this institution. Both the attending physician and APP groups felt that intermittent refresher educational interventions (n=4) as well as initial education for new staff (n=3) would be effective interventions to help increase the use of palliative care services for trauma patients at this facility. The team also felt that increased availability of palliative care staff to cover nights and weekends (n=4) would be helpful. None of the providers felt that daily rounds with palliative care staff in the ICU would be helpful, and none found that automated checklists would be helpful.

Barriers

Question #3 utilized a multiple-choice approach to determine how much previous palliative care education each provider had, as a lack of palliative education may serve as a barrier to the utilization of palliative care services. Two of the physicians reported a lack of previous education in palliative care, and one attending physician selected “Other” and stated, “Palliative care is always a part of our practice and training.” Of the three APPs, none reported having received any previous formal or informal education on palliative care.

Question #5 utilized a multiple answer approach aimed at assessing participants’ general knowledge of palliative care concepts by asking them to select statements that they felt were true about palliative care. Only one statement was true, while the other four statements were common misconceptions about palliative care that are often seen in the literature. One hundred percent of the attending physicians selected “True” for the statement that was truly representative of palliative care, and none of the respondents selected “True” for the false statements (Table 2). Two of the APPs selected true for the statement that was true, while one of the APPs did not

select the answer that was true, instead selecting “Palliative care is only useful when curative treatments are no longer feasible” as a true statement.

TABLE 2. *Provider Knowledge of Palliative Care Concepts*

	Advanced Practice Provider	Attending Physician
Palliative care and hospice care are interchangeable.	0	0
Palliative care requires stopping all or most aggressive treatment aimed at saving/prolonging life.	0	0
Palliative care consults can be used to assist with symptom management, even if the patient has a good prognosis.	2 (66.6%)	3 (100%)
Palliative care is only useful when curative treatments are no longer feasible.	1/3 (33.3%)	0
Palliative care consults often cause increased cost and length of stay.	0	0

Assessing provider comfort levels with difficult topics was the goal of question #11, which utilized a 5-point Likert scale to have providers rate comfort with giving bad news, discussing prognosis, discussing withdrawal/withholding of life support, and symptom management at the end of life. The starkest contrast between the APP attending physician group appeared in their comfort levels with these topics. All of the attending physicians rated their comfort level as high or very high with these topics; however, the APP group rated their comfort level as low to moderate.

Culture

Question #8 and #9 utilized multiple-choice answers to determine how often providers felt that palliative care consults were helpful, and whether they felt palliative consults were under-utilized, appropriate, or over-utilized at their institution. APPs and one attending physician

felt that palliative consults were helpful most or all of the time, while the other attending physicians felt that palliative care consults were only helpful some to half of the time (Figure 5). The results on utilization of palliative care at their facility were mixed, with one attending physician and APPs stating that palliative care is underutilized, and two physicians and one APP stating that it is appropriately utilized.

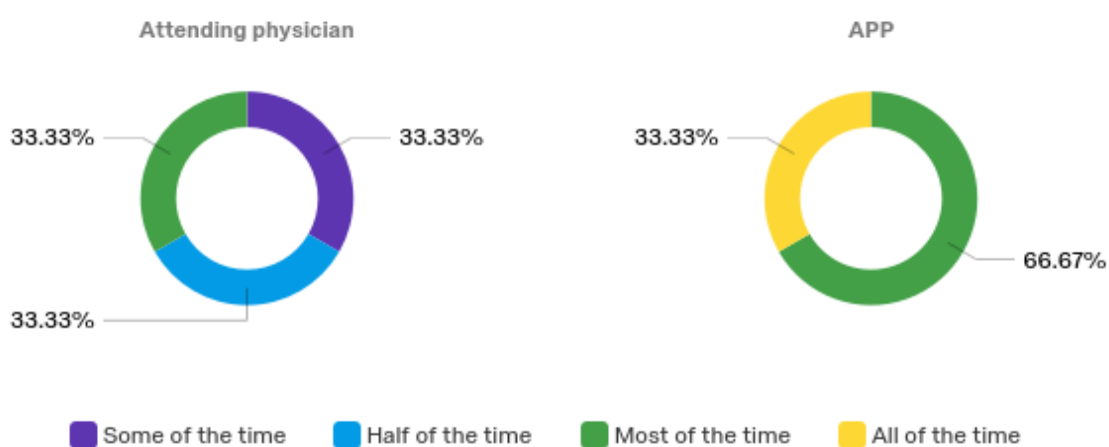


FIGURE 5. Frequency that Palliative Consults Are Felt to be Helpful

Question #10 utilized a 5-point Likert scale to assess what the providers felt were barriers to the use of palliative care at their facility. Two of the physicians somewhat to strongly agreed that worrying about losing control over the patient's treatment plan was a barrier to the initiation of palliative care consults for them, and two of the three also strongly agreed that a lack of timely availability to palliative care staff was a barrier, while one rated this as neutral (Figure 6). They also somewhat agreed that concern about the palliative care team miscommunicating prognosis was a barrier, as well as the family verbalizing resistance to palliative care. They somewhat to strongly disagreed that a palliative consult would delay potentially lifesaving treatment, that it might increase length of stay, and that it might in create a possibility of lawsuit.

APPs also strongly disagreed that a palliative consult would increase a patient's length of stay or delay potentially lifesaving treatment, and strongly to somewhat disagreed that initiating a palliative care consult would increase the potential for a lawsuit (Figure 7). In contrast to the physician group, however, the APP group was less concerned that the palliative care team would miscommunicate prognosis to the family.

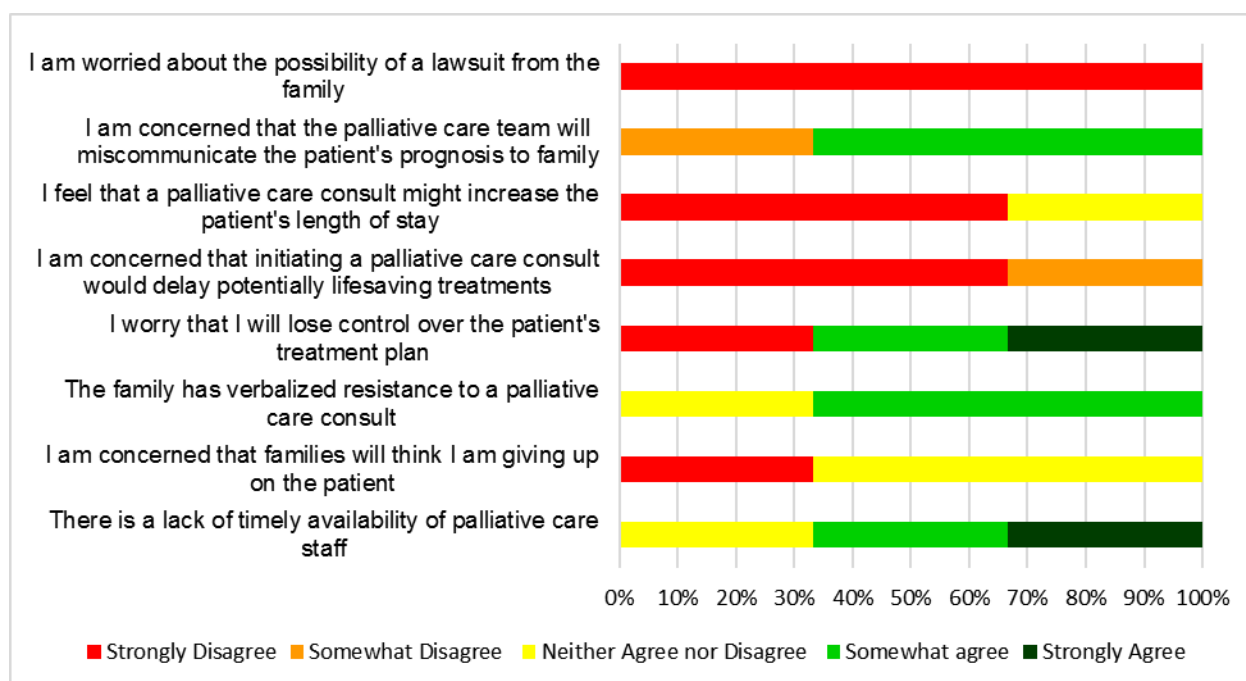


FIGURE 6. Physician Perceived Barriers to Initiating Palliative Consults

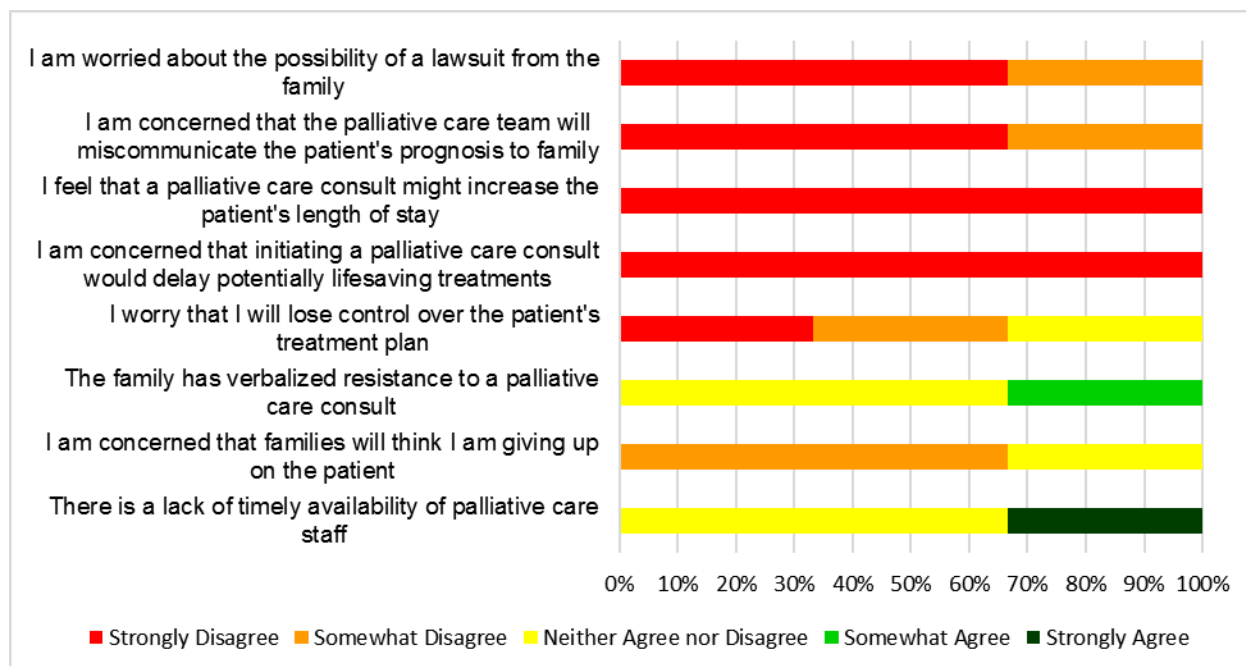


FIGURE 7. APP Perceived Barriers to Initiating Palliative Consults

The final question of this survey was an open-ended question asking the providers if they had any additional comments about palliative care at their facility. While most participants chose to skip this question, there was one response by an attending physician who stated, “I have not had a good experience with palliative care in this institution.” The other open-ended response was provided by an APP, who stated “there is not a robust palliative care service @ this institution.”

Missing Data

Qualtrics was set to automatically record the completed portion of any unfinished survey after a two-week period to ensure that data were not lost if participants completed a survey but did not submit. There was one response recorded in which the respondent had clicked “I Agree” on the consent page and was redirected to the start of the survey, but the remainder of the survey was left blank. There was a second survey that had been started prior to the survey end date, and

was automatically submitted after the two-week period. The automatic submission occurred after the survey was scheduled to end, and was partially complete. As a result, the data from this survey were not utilized because: 1) the survey was finished after the scheduled end date, and 2) the survey was not fully completed, meaning that there is no way of knowing if the participant was satisfied with their answers or if they had meant to go back and make changes. Because the survey was anonymous, there was no way for the author to follow-up with these individual respondents to determine if they had simply forgotten to finish the survey, or if they had encountered a problem with the survey.

DISCUSSION

Summary

The aim of this project was to answer four questions about palliative care in the trauma population, which included: 1) how is palliative care utilized for trauma patients at a Level 1 trauma center in southern Arizona? 2) What barriers exist for the use of palliative care in this population? 3) What is the culture of the trauma team regarding palliative care? 4) Are there differences in palliative care use between physicians and advanced practice providers? Although the sample size was small, there was an even mix between attending physicians APPs, and all project questions were answered.

Utilization

Five out of the six providers who responded to this survey stated that they had placed between one and five palliative care consults in the past three months, while a large multicenter study by Karlekar and colleagues (2014) found that most providers had placed between one and five consults in the past year, with 20% of providers having placed no consults in the past year.

This suggests that the providers at this institution are more likely to place palliative consults as compared to their peers nationally, which may be due to better availability of palliative staff at this institution compared to other facilities, or greater knowledge of palliative care services among the providers at this institution. There is no specific number of palliative consults that is considered optimal based on previous studies, however the number of palliative consults at this facility suggests that there may be a greater number of patients receiving palliative care that would benefit at this institution as compared to other hospitals. There was also not a notable difference in the number of palliative consults placed by APPs as compared to attending physicians, as all but one these providers had all placed between one and five consults in the past three months.

Consistent with the literature, both APPs and attending physicians at this institution were most likely to initiate palliative care consults for assistance with transitions of care (Karlekar et al., 2014), and somewhat likely to initiate palliative care consults for family conflict in decision making and conflict between family and staff regarding goals of care. The palliative care service can often serve as a neutral party when there is conflict between family members or staff and family regarding goals of care, and it appears that this service is utilized at this facility for the same reason. Both groups were less likely consult palliative care when there was a lack of identifiable decision maker when the patient was unable to make healthcare decisions independently, suggesting that either they do not feel palliative consults are beneficial if there is no clearly defined decision maker, or they do not feel that palliative care can assist with this situation.

Interestingly, APPs were more likely to consult palliative care for assistance with symptom management than the attending physicians, and this is consistent with the APP group rating their comfort level with pain and agitation management at the end of life as lower than the physician group. In addition, APPs were also more likely to initiate palliative care consults for assistance with communicating prognosis to family. APPs also rated their comfort level with this situation lower than the physicians did, suggesting a possible reason for this difference.

Previous research has shown that while there is no single prognostic factor that prompts a palliative care consult from trauma surgeons, physicians are typically less likely to consult palliative care if there will likely be a meaningful recovery, or if death was likely very early in the patient's course (Tilden et al., 2009). The results of this survey are consistent with the literature, as two of the physicians were least likely to consult with an expected survival of one week or less, and one was somewhat unlikely to consult in this instance. However, because these physicians also did not always consult palliative care for hospice placement, the investigator is unable to determine if the lack of palliative consults when death is imminent is also correlated with a lack of hospice referrals, or if the physicians simply referred to hospice services without involving the palliative care team in these instances. While there is a palliative team at this facility, there is no hospice team, and hospice referrals can be made by the providers without involving palliative care.

In addition, while the attending physicians were likely to consult palliative when expected survival was greater than six months with a poor quality of life, they were less likely to consult with the same expected survival time with an unknown quality of life. This is an interesting finding, as these providers were not as likely to consult for symptom management,

suggesting that palliative consults for expected poor quality of life may be more related to helping the family coordinate resources and explore goals of care rather than symptom management. This is also consistent with the literature, as previous studies have found that most trauma providers consider quality of life after discharge from the ICU; however, most do not consider how care will be provided after discharge (Martin et al., 2014). The answers provided by the physicians at this institution suggest that quality of life is a concern, however they may not consider a need for palliative care if they are unsure of future quality of life. Four out of six providers surveyed had a neutral answer regarding likelihood of consulting palliative care if the prognosis is unknown, while one physician was least likely to consult in this case. Previous research shows that trauma providers may be less likely to consult palliative care or consult later in the patient's course if the prognosis is unknown, as there is a concern that the family may misread their intentions (Karelekar et al., 2014).

Like the physician group, the APP group was likely to consult palliative care when the expected survival was six months or more with a suspected poor quality of life, and was less likely to consult with the same expected survival rate with an unknown quality of life. However, the APP group was much more likely to consult with an expected survival of one week or less, which is opposite of the physician group and what has been seen in the literature. Because there is no existing research exploring the likelihood of APPs consulting palliative care based on prognosis, the reason behind this difference can only be inferred. All members of the APP group rated their comfort level with discussion of withdrawal or withholding of life support as minimal to moderate, while physicians rated their comfort level with this subject as high or very high. It is possible that the attending physicians may be less likely to consult palliative care when death is

imminent because they feel capable of handling end-of-life discussions with family, while APPs may be less comfortable with this situation and prefer the assistance of the palliative team.

The last multiple answer question in this survey also asked the providers to consider current utilization and recommend ways that palliative care could use could be increased at this facility. The providers recommended increased education for both new and experienced staff, which is consistent with the lack of palliative education seen in this group and in the literature. In addition, the provider team also felt that an increased availability of palliative care staff to cover nights and weekends would be beneficial. This is consistent with previous studies of ER physicians that have listed a lack of 24-hour coverage from the palliative as a major barrier to initiating consults (Karlekar et al., 2014; Lamba et al., 2013). Surrogate decision makers of trauma patients have also stated they were frustrated a lack of physician availability to discuss goals of care, which supports the need for increased availability of the palliative team to serve as a complement care provided by the primary team (Long et al., 2011).

Barriers

None of the providers rated themselves as having any formal education in palliative care, however one attending physician wrote “Palliative care is always a part of our education and training.” This is an interesting perspective, as the literature typically points to a lack of formal education and training in palliative care among physicians. Because this physician did not select any of the answers that included formal education in palliative care, it is possible that while s/he did not have formal training, s/he was a part of a residency program that emphasized palliative care concepts, or completed residency in a hospital with a robust palliative care service. Unfortunately, with the anonymous nature of this survey, there is no way to follow up with the

respondent to ask for further clarification of this statement. The lack of palliative education and training among the providers in this survey is not surprising, as surgeons and ED physicians in previous studies have cited a lack of formal training in palliative care despite feeling that this training would be valuable (DeVader & Jeanmonod, 2012; Klaristenfeld et al., 2007). While this survey was kept short to improve the response rate and serve as a basic screening to set the stage for a QI project, it may have been beneficial to ask the respondents if they would have liked to have had formal palliative care training in their educational program, as this may strengthen the perspective that interdisciplinary palliative care education should be provided during initial nursing and medical training.

Question #5 (Appendix A) also assessed potential barriers to palliative care utilization by evaluating potential misconceptions about palliative care. This question was based on common misconceptions about palliative care that were seen frequently in the literature (Karlekar et al., 2014; Lamba et al., 2013), with one true statement included about the potential to utilize palliative care to help with symptom management even when a good prognosis is expected. Contrary to findings in the literature, all but one of the providers selected that true answer, and only one provider selected one of the false answers. One of the providers selected the answer that stated palliative care was only useful when other treatments are no longer feasible, which is a common misconception about palliative care. This same provider selected that they were somewhat likely to consult palliative care for assistance with symptom management, suggesting perhaps that this provider feels that palliative care is helpful with symptom management at the end of life, but has not thought of utilizing them for symptom management at other times. In addition, trauma providers are generally very familiar with acute pain management, so they may

not see a need to consult palliative care to assist with acute pain, and may not consider consulting for assistance with other symptoms.

One of the major differences between the APP and physician group regarding potential barriers to palliative care was the comfort level with difficult and end of life discussions, as well as pain and agitation management at the end of life. The attending physicians rated themselves as significantly more comfortable with these areas than the APP group. The APPs in this institution manage trauma patients on the floor and step-down unit primarily, as well as assisting in the trauma bay; however, they spend very little time in the STICU. Therefore, it is primarily the attending physicians and fellows that deliver bad news, explain poor prognoses, and discuss withdrawing life-prolonging care with the family. This may be one reason that the APPs rated themselves as feeling less comfortable with these topics, and in addition they may not feel that is within their role to have these types of conversations, making them more likely to initiate a palliative consult when these situations occur on the floor or step-down units.

While the investigator hypothesized that providers who rated themselves as having less comfort with difficult discussions and symptom management at the end of life would be more likely to consult palliative care, this was not the case. Because APPs primarily provide care for patients on the floor and step-down units, it is likely that the physicians provide care for more patients who would be candidates for palliative consults than the APP group. This suggests that there may be a significant difference in the number of palliative consults based on percentages of eligible patients. For example, if specific criteria for palliative consults were retrospectively applied to all patients seen by both groups, it may be found that APPs had a higher percentage of consults for eligible patients, however this was beyond the scope of this survey.

Culture

APPs were more likely to rate palliative care consults as being beneficial most or all of the time than physicians. There was one physician that rated palliative consults as being beneficial most of the time, while the others rated them as being beneficial half or some of the time. Because the physicians were also more likely to cite worry that palliative care consults would cause miscommunication of prognosis or cause them to lose control of the care plan, it is possible that perhaps the physicians were more likely to have had negative experiences with the palliative team, making them less likely to find these consults beneficial. However, it is also possible that because the physicians have a higher comfort level with difficult discussions and symptom management at the end of life, they may be less likely to feel that the palliative team provided useful additions to their treatment plan as compared to the APP group.

Provider beliefs regarding utilization of palliative care were split evenly between the APP and physician group, one person from each group feeling that palliative care is underutilized, while the rest felt that it was appropriately utilized. This suggests that interventions aimed at increasing the number of palliative consults may be less helpful than interventions aimed at improving education about palliative care concepts, for example. It is promising, however, that none of the respondents rated palliative care as being over-utilized in this institution, which suggests that the trauma providers are generally receptive to utilizing palliative care for their patients.

While previous studies have identified that a concern about a possible lawsuit from the family or concern for increase costs and length of stay are potential barriers to providers consulting palliative care (Karlekar et al., 2014), this was not true of providers at this facility in

both the APP and physician groups. All but one provider on this team strongly disagreed that a palliative consult might potentially increase the patient's length of stay, suggesting that they have either had positive experiences with the palliative team assisting in decreasing length of stay, or they have a better understanding of the benefits of palliative care than respondents in previous studies. In addition, all APPs strongly disagreed with the statement that palliative consults might delay potentially lifesaving treatment, and two of the three attending physicians strongly disagreed (one somewhat disagreed), indicating that this is not a concern when determining whether a patient would benefit from a palliative consult.

Previous studies also found that a major barrier to palliative care consults includes lack of availability and timely access to palliative care staff, and provider fear that families would feel that they were giving up (Karlekar et al., 2014; Lamba et al., 2013). This is consistent with the findings at the institution utilized for this DNP project, as both APPs and physicians generally agreed that a lack of timely availability was a barrier to consulting palliative care. This may be because these providers have consulted palliative care and were disappointed by the response time, or it may be that they had patients who would have benefitted from a palliative consult at night or on the weekend when the palliative care team was unavailable, which prevented them from consulting. The physician group was also more likely to be concerned that the family would feel that they were giving up on the patient if they initiated a palliative consult, but the APP group was less likely to feel this way. Again, there is no literature looking at the difference between these two groups regarding palliative consult, so it is difficult to determine the reason for this difference. However, it is possible that perhaps the attending physicians are more likely to feel this way as they have ultimate responsibility for guiding the care of their patients, so they

may be more concerned that a palliative consult coming from them may give the family the wrong impression.

Consistent with the literature (Karlekar et al., 2014) both groups also cited family verbalization of resistance to palliative care as a barrier. This suggests that either families express the desire to do everything to keep the patients alive, which has deterred providers from having the conversation about palliative care, or that providers may bring up palliative care and cease the conversation when families express resistance. Karlekar and colleagues (2014) also found that trauma providers were concerned that palliative care teams would miscommunicate prognosis, and that they would lose control over the treatment plan if palliative became involved. The physician group was consistent with the literature on this finding, with all physicians either strongly or somewhat agreeing to these statements. In contrast, this was not as much of a concern for the APP group, with these providers strongly to somewhat disagreeing with these statements.

Open-Ended Responses

One of the attending physicians stated, “I have not had a good experience with palliative care in this institution.” While inferences can be made about the meaning of this statement based on the respondent’s other answers, it is impossible to know exactly what prompted this statement without understanding the context. This same respondent also answered, “strongly agree” that worrying about losing control over a patient’s treatment plan is a barrier that might prevent him or her from initiating a palliative care consult, so there is a question about whether the respondent has had conflict with the palliative team in the past.

One of the APPs stated, “there is not a robust palliative care service @ this institution.” It can be inferred that this APP feels that there is possibly a lack of availability or a lack of

adequate staff on the palliative care team at this institution, as the APP also suggested that an increased availability of palliative care staff to cover nights and weekend would improve the use of palliative care at the institution. However, it is possible that the APP is referring to the composition of the palliative team. Palliative care teams are most successful when they are interdisciplinary in nature, and previous literature has shown that providers are more likely to consult palliative care when there is board certified palliative care physician on staff. While there is a palliative physician on staff, the palliative care team at this institution also utilizes APPs, and sometimes has days where there is only one provider on service, making it difficult for them to see many new consults.

While anonymity provided by an online survey may encourage respondents to be more truthful, these answers also highlight the difficulty of utilizing survey questions that cannot be scored objectively. While these answers provide the author with the understanding that these respondents may have had negative experiences with palliative care at this hospital in the past, there is no ability to follow-up with the statements to provide a deeper understanding of the context that would be possible with an in-person or telephone interview (Patten, 2014). Utilizing one-on-one interviews or focus groups would have allowed for further exploring of the provider's opinions and beliefs, as well as the ability to explore factors that explain why they hold these beliefs or feelings. A focus group would have also encouraged the group to discuss ideas amongst themselves, allowing for broader exploration and the ability for the group to identify differences or similarities in beliefs amongst themselves (Denscombe, 2014). However, these face-to-face methods were not chosen as they require a considerable amount of time. Focus groups often take one to two hours (Denscombe, 2014), and would require all the providers to be

present at the same time, which would not have been feasible for this busy group of providers. One-on-one interviews may have been easier to schedule as the investigator would only have to meet with one person at a time, but these providers have multiple responsibilities including teaching, operating, rounding, and attending meetings, so they likely would not have wanted to agree to an interview that would take up thirty minutes to an hour of their time.

Project Strengths

The purpose of this project was to better understand specific barriers and facilitators to the use of palliative care at a specific institution to gain insight into possible QI initiatives that would be successful in this hospital, and the survey gathered this information as intended. The survey content was validated by professionals in palliative care and trauma, which ensures that the results are meaningful and will be able to guide future QI initiatives.

Because this survey assessment utilized an anonymous, online questionnaire format, it may have been more likely to encourage the respondents to be truthful with topics that they might have not wanted to discuss in person or on the phone (Patten, 2014; Polit & Beck, 2012). While there is always a risk of social response bias when relying on self-report, this is less likely when participants can provide anonymous answers (Polit & Beck, 2012).

Project Limitations

The goal of this DNP project was to understand the beliefs and practices around the use of palliative care with trauma patients at a specific institution to guide future QI work at this institution, therefore this project may not represent another group of trauma providers (Polit & Beck, 2012). Survey response rate and a small sample size was also a limitation to this project. An online survey format was utilized to offer respondents the ability to anonymously report at a

time and place that would be convenient to them, however after the initial survey was sent out there was only one reply during the first week. Face-to-face recruiting was then initiated the second week. During all contact that was made, potential respondents stated they would fill out the survey later in the day as they were very busy. While no single ideal response rate has been determined, it is generally thought that a response rate of sixty percent is adequate for surveys, and this survey fell just short of that at 54%. However, it is likely that face-to-face recruiting improved the response rate, as this has been shown to improve response rate by up to 48% (Sauerman & Roach, 2013). Monetary rewards are also likely to improve the response rate, however none of the respondents filled out their information for the Amazon gift card drawing. This could be due to a lack of time, lack of interest in the specific award, or lack of interest in the lottery-style reward.

Because this project relied on voluntary self-report of participants, non-report bias was also a potential limitation. There may be differences in the characteristics and experiences of providers who responded versus those who did not, therefore the sample may not be representative of all trauma providers on the service (Polit & Beck, 2012). For example, it is possible that the providers with more interest in and understanding of palliative care were more likely to respond. In contrast, it may also be possible that providers with less experience with palliative care were more likely to participate because those providers may be interested in learning more about palliative care.

Relevance to Practice

The last multiple answer question in the survey aimed to assess which types of interventions would help increase the use of palliative care services for trauma patients, utilizing

interventions that have been previously utilized in other institutions. The first option suggested the utilization of a palliative care trigger checklist that would prompt the provider to initiate a palliative care consult in the electronic health record. These types of triggers have increased utilization of palliative care in medical ICUs, and there has also been research into palliative care triggers that would be specific to patients in the surgical ICU (Hua et al., 2014; Nelson et al., 2013). The Center to Advance Palliative Care has recommend a palliative care screening checklist by healthcare providers for all patients admitted to the hospital to identify patients at high risk for palliative care needs that have not been met (Weissman et al., 2011). This group also developed a checklist to be used at hospital admission, as well as a checklist to be used daily throughout the patient's stay. To this investigator's knowledge, there has not been a palliative care trigger set that has been validated solely for trauma patients, so this is an area of that the author felt would be worth exploring in a potential future QI project with this group. However, not a single provider felt that this would be a valuable intervention for improving palliative care use.

There are several potential reasons that providers at this institution did not feel that palliative care checklists would be an effective intervention at their facility, however it is impossible to confirm the providers' exact reasons without a discussion with these providers. Nelson and colleagues (2013) recommend the use of a focus group if an institution is considering the use of a palliative trigger set, with key questions for stakeholders to explore potential barriers and facilitators. For example, these authors recommend asking providers to provide input on what meaningful measures of success would be, what it would take for them to consider a checklist approach worthwhile, as well as what other approaches might be more appropriate than

a screening tool, and why the providers feel this way (Nelson et al., 2013). In addition to considering input from the trauma providers and culture of the team, it is also important to consider other reasons that this team of providers may not have felt this intervention would be effective, such as. Any time a consultation screening tool is being considered, resources of the palliative care team are important to consider, as they must be able to meet the need of increased consults of a screening tool were to be utilized (Nelson et al., 2013). The providers in this institution generally felt that there could be increased availability of the palliative care team, and one provider stated “there is not a robust palliative care team @ this institution.” This suggests that the providers may not feel the current palliative care team could handle the increased number of referrals that a checklist would create, which possibly caused them to not select this as a potential useful intervention.

The other response that was not supported by a single provider in this survey was the addition of the palliative care team in STICU rounds. This intervention has been utilized in other institutions, and has contributed to shorter hospital length of stay, earlier family meetings, higher rates of advance directive utilization, and lower use of non-beneficial life-prolonging treatments (Braus et al., 2016; O’Mahony et al., 2010). Again, the reason that providers at this institution did not feel that this would be a helpful intervention can only be inferred, and a focus group meeting would be a helpful next step in determining why these providers did not support this option. The physicians were more likely to be concerned that the palliative team would miscommunicate prognosis or take control of the patient’s treatment plan, which may be a reason that they would not support having them present in the STICU during rounds. The general feeling that there is a lack of palliative care staff may be another reason providers did not support

this intervention, as it may not be feasible for the palliative team to round daily with the trauma teams.

The three areas that providers felt would be helpful interventions included increased availability of palliative care staff to cover nights and weekends, education for incoming providers (including residents), and continuing education for experienced providers, all of which are areas that other providers have identified as potential helpful interventions in previous studies (DeVader & Jeanmonod, 2012; Karlekar et al., 2014; Lamba et al., 2013). While knowledge of palliative care concepts in this group was high compared to that in previous studies, none of the providers reported having any previous formal education or training in palliative care, suggesting that there is room for improvement in this area. In addition, this project did not survey resident physicians on knowledge of palliative concepts, which may have been lower than in the attending and APP group, and may be a reason that these providers recommended education for incoming residents.

While many of the findings in the survey were consistent with findings in large studies assessing palliative care use among providers, the differences in the way APPs answered as compared to attending physicians regarding barriers to palliative care, comfort with discussion of difficult topics, and symptom management at the end of life suggests that future educational interventions may need to be tailored to each individual discipline, rather than providing all education to the group as a whole. For example, attending physicians may benefit from education about how the palliative care team can work alongside curative treatment as a consultant service rather than needing control over than plan of care, and APPs may benefit from education about having difficult discussions with family members, such as withdrawal of care or discussions

about prognosis. While this author is unaware of any studies targeting APPs receiving education on palliative care, studies targeted at residents with a low comfort level with end-of-life symptom management and difficult discussions showed improvement in these domains after educational interventions (DeVader & Jeanmonod, 2012).

Increased availability of palliative care staff to cover nights and weekends was supported by the greatest number of providers (n=4), suggesting that they feel palliative care coverage is inadequate at this institution. Previous studies have shown this is considered a common barrier among trauma and ED providers (Karlekar et al., 2014; Lamba et al., 2013). While this would probably be the costliest and most time-consuming intervention to implement, as it would likely require the hiring of attritional palliative care staff, stakeholder support for this intervention is an important first step to implementation. If providers did not feel increased palliative care coverage would be helpful, it would be nearly impossible to take these findings to the organization and argue for improved palliative care coverage. However, the apparent support from providers shows that a trial of night and/or weekend coverage from the palliative team may be better supported by the organization in the future.

This DNP project utilized the KTA framework and focused on the knowledge creation components of inquiry and synthesis, and the knowledge action components of problem identification and barrier assessment. The author hypothesized that providers would feel palliative care was underutilized, however this did not seem to be the case. Interestingly most providers felt that palliative care services were appropriately utilized, suggesting that despite identified barriers to the use of palliative care, they may not feel that the number of palliative consults should be increased for their population. Therefore, the problem identified was not an

underutilization of palliative services as previously thought, rather it included a lack of availability of the palliative team and a perceived need for provider education. However, this must be taken with the assumption that there was a consensus between providers on what palliative care should be. For example, the physicians were less likely to use palliative care for assistance with symptom management, so this may be an area that is underutilized, but if providers do not consider this to be a role of palliative care they would not rate it as being underutilized. The information from the literature review was applied to the local context of a Level 1 trauma center in southern Arizona, and the next step in the QI process would then be to form a QI team to develop and implement an intervention aimed at improving the identified problems, monitor the use of that intervention, and evaluate the outcomes.

Mosenthal and colleagues (2012) identified several key steps for successful integration of palliative care into the intensive care unit, and this project utilized several of these steps as a starting point for future work in this area. This survey identified the culture of palliative care use within the trauma team by identifying how palliative care is utilized among providers, and what the providers perceive as barriers to utilization for palliative care. In addition, this project determined whether the providers utilize a consultative or integrative approach to palliative care use, and determined that they use a combination of these approaches. In addition, interventions supported by these providers were a combination of integrative (improving palliative education among trauma providers) and consultative (improving availability of palliative care team). This is consistent with Mosenthal and colleagues' (2012) recommendation that interventions should take on a combination of these approaches to best fit local needs and resources. This survey presents evidence that palliative education is a worthwhile investment for the organization, as

most respondents supported this intervention. Next steps in creating a QI project aimed at better integrating palliative care into the trauma population should include the creation of a project workgroup consisting of key stakeholders, performing a formal needs assessment (Mosenthal et al., 2012). Given that this survey provided a preliminary assessment about that culture, utilization, and barriers to palliative care use for trauma patients at this institution, the results of this survey should be explored in a multi-disciplinary focus group to identify domains of palliative care that are of key importance to the providers, and focusing efforts and one such domain initially

Conclusion

With the heavy focus of resuscitation and life-saving in the trauma population, there has been little room left for a focus on improving the use of palliative care in this population. This is reflected in the literature with a lack of consensus on timing and reason for palliative care consults for the trauma population as well as an apparent lack of education about palliative care among ICU, ER, and trauma providers. Improving palliative care practice requires buy-in from trauma providers at the institution level, at a minimum. Understanding what facilitates and hinders the use of palliative care among trauma providers within a specific Level 1 trauma center will aid in the creation of a quality improvement project aimed at improving provider knowledge and increasing the integration of palliative care within the trauma population.

The team of APPs and attending physicians together agreed that lack of timely availability of palliative care staff was a barrier to initiating consults, in addition resistance from families regarding palliative care. In addition, both groups were likely to consult palliative care for assistance with transitions of care, when there is family conflict in decision making, and for

hospice referrals. However, APPs were more likely to consult palliative care for symptom management, and reported less comfort with management of pain and delirium at the end of life. Both groups of providers felt that educational interventions aimed at both new employees and experienced staff would be helpful for improving the use of palliative care at this institution. Because the APPs and physicians reported differences in comfort with difficult conversations and symptom management at the end of life, future quality improvement efforts should include educational interventions that are targeted towards individual specialties.

APPENDIX A:
SURVEY QUESTIONS

Survey Questions

1. Discipline:
 - Attending Physician
 - Advanced Practice Provider

2. Total number of years in practice:
 - 0-5
 - 6-10
 - 11-20
 - 20+

3. Previous education in palliative care:
 - None
 - Have attended at least 1 lecture or workshop on palliative care concepts
 - Have taken at least 1 formal class, not required by my employer/educational program
 - Have taken at least 1 formal class, required by my employer or educational program
 - Other (specify):

4. Approximate number of patients that you have placed a palliative care consult for in the past 3 months:
 - 0
 - 1-5 patients
 - 6-10 patients
 - 11-20 patients
 - >20 patients

5. Based on your knowledge and clinical experience, select all statements that you feel are TRUE:
 - Palliative care and hospice care are interchangeable
 - Palliative care requires stopping all or most aggressive treatment aimed at saving/prolonging life
 - Palliative care consults can be used to assist with symptom management, even if the patient has a good prognosis
 - Palliative care is only useful when curative treatments are no longer feasible
 - Palliative care consults often cause increased cost and length of stay

6. Please rate which situations prompt you to initiate a palliative care consult, on a scale from LEAST likely to consult [1] to MOST likely to consult [5]:

	Least likely	Somewhat unlikely	Neutral	Somewhat likely	Most likely
	1	2	3	4	5
Hospice referrals					
Assistance with communicating prognosis to family					
Assistance with symptom management (i.e. pain control)					
Lack of identifiable decision maker					
Grief counseling for families					
Family conflict in decision making					
Conflict between family and staff regarding goals of care					
Assistance with transitions of care (i.e. transitioning to comfort care)					

7. Please rate how the patient's prognosis affects the likelihood that you will order a palliative care consult, from LEAST likely to consult [1] to MOST [5] likely to consult.

	Least likely	Somewhat unlikely	Neutral	Somewhat likely	Most likely
	1	2	3	4	5
Unknown prognosis					
Expected survival of one week or less					
Expected survival of six months or less					
Expected survival of greater than six months with a suspected poor quality of life					

Expected survival of greater than six months with unknown quality of life					
---	--	--	--	--	--

8. How often do you feel palliative care consults are beneficial?

- None of the time
- Some of the time
- Half of the time
- Most of the time
- All of the time

9. Palliative care for trauma patients in my institution is:

- Not utilized
- Underutilized
- Appropriately utilized
- Over utilized

10. Please rate the extent to which you DISAGREE [1] or AGREE [5] with the following statements about barriers that prevent you from initiating palliative care consults.

	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
	1	2	3	4	5
There is a lack of timely availability of palliative care staff					
I am concerned that families will think I am giving up on the patient					
The family has verbalized resistance to a palliative care consult					
I worry that I will lose control over the patient's treatment plan					
I am concerned that initiating a palliative care consult would delay potentially					

lifesaving treatments (i.e. surgery)					
I feel that a palliative care consult might increase the patient's length of stay					
I am concerned that the palliative care team will miscommunicate the patient's prognosis to family					
I am worried about the possibility of a lawsuit from the family					

11. Please rate the level of comfort you have for the following topics, from MINIMAL [1] to VERY HIGH [5]

	Minimal	Low	Moderate	High	Very High
	1	2	3	4	5
Giving bad news					
Discussion of prognosis					
Discussion of withholding or withdrawal of life support with families					
Delirium and agitation management at the end of life					
Pain management at the end of life					

12. What interventions would help increase the use of palliative care services for trauma patients in my institution? (Select all that apply)

- Daily automated checklist within the electronic medical record that would alert you when a palliative consult may be helpful. Some factors that would trigger consults would include GCS of ≤ 8 for 1 week in patients over 75 years old, ICU length of stay of 1 week or more, multiple ICU admissions, and multi-system organ failure
- Palliative care education for new staff (including residents) that covers goals of palliative care and when to order palliative care consults

- Intermittent “refresher” education on palliative care for all staff, through the use of lectures, journal articles, case studies, etc.
- Increased availability of palliative care staff to cover nights and weekends
- Rounds with the palliative care team in the ICU
- Other (specify):

13. Any other comments regarding the use of palliative care for trauma patients?

Questions adapted from Karlekar et al. (2014), Tilden et al. (2009), and L. Snyder (Personal Communication, October 11, 2016).

APPENDIX B:
UNIVERSITY OF ARIZONA APPROVAL LETTER



Human Subjects
Protection Program

1618 E. Helen St.
P.O.Box 245137
Tucson, AZ 85724-5137
Tel: (520) 626-6721
<http://rgw.arizona.edu/compliance/home>

Date: January 24, 2017
Principal Investigator: Liana Iris Haynes
Protocol Number: 1701130251
Protocol Title: Palliative Care: Attitudes and Practices of Trauma Care Providers
Determination: Human Subjects Review not Required

The project listed above does not require oversight by the University of Arizona because the project does not meet the definition of 'research' and/or 'human subject'.

- **Not Research as defined by 45 CFR 46.102(d):** As presented, the activities described above do not meet the definition of research as cited in the regulations issued by the U.S. Department of Health and Human Services which state that "research means a systematic investigation, including research development, testing and evaluation, designed to contribute to generalizable knowledge".
- **Not Human Subjects Research as defined by 45 CFR 46.102(f):** As presented, the activities described above do not meet the definition of research involving human subjects as cited in the regulations issued by the U.S. Department of Health and Human Services which state that "human subject means a living individual about whom an investigator (whether professional or student) conducting research obtains data through intervention *or* interaction with the individual, or identifiable private information".

Note: Modifications to projects not requiring human subjects review that change the nature of the project should be submitted to the Human Subjects Protection Program (HSPP) for a new determination (e.g. addition of research with children, specimen collection, participant observation, prospective collection of data when the study was previously retrospective in nature, and broadening the scope or nature of the research question). Please contact the HSPP to consult on whether the proposed changes need further review.

The University of Arizona maintains a Federalwide Assurance with the Office for Human Research Protections (FWA #00004218).

APPENDIX C:
BANNER APPROVAL LETTER



January 25, 2017

Liana Haynes, BSN
Banner University Medical Center Tucson
1501 N Cambell Ave
Tucson, AZ 85724

RE: NRDUC Project: 1701130251: Palliative Care: Attitudes and Practices of Trauma Care Providers
New Project UA Determination of Human Research Application Version 2016-07 submitted 1/17/2017; forwarded to Non-Research Data Use Committee on 1/24/2017
Non-Research Data Use Committee Evaluation: Approved on 1/25/2017

Dear Liana,

Thank you for your submission of the UA Determination of Human Research Form which outlined the above noted project. On 1/24/16 the UA IRB concluded that this project was not research and subsequently forwarded it to the Banner Health Non-Research Data Use Committee (NRDUC) for oversight and review.

The project information you provided was reviewed on January 25, 2017 by the BH NRDUC. The NRDUC did review and approve this project on 1/25/17. Should you have any questions or concerns please feel free to reach out to the NRDUC chair at any time.

PLEASE NOTE

The NRDUC determination is based on the information you provided to the committee on your application version 2016-07 and supporting documents submitted 1/17/2017. If the project is modified in any way, including re-analysis of data, the determination is no longer valid. You must resubmit the project to the NRDUC for review and approval.

Please note: As part of continuing process improvement, random audits could be conducted to assess compliance and adherence with submitted/approved applications.

A copy of this letter will be placed in the NRDUC project file.

Sincerely,

Kristen Eversole, BS, RHIA, CHPC
Banner Health Privacy Program Director – University Medicine, NRDUC Ch

APPENDIX D:
RECRUITMENT E-MAIL

E-mail Recruitment Letter

Dear Provider,

My name is Liana Haynes, and I am a doctoral nurse practitioner student at the University of Arizona. My time as a nurse on Diamond 2 North and my time as a student with your trauma team has inspired the creation of a study for my final project that aims to better understand the use of palliative care for trauma patients at Banner University Medical Center. I would very much appreciate if you could take a moment to share your experiences through the online survey that I have created.

The survey asks questions about your current practices and opinions about palliative care for the trauma patient population, and will take approximately 10 minutes to complete. Your participation is voluntary, and your survey responses will remain anonymous. If you choose to complete the survey, please follow the first link below. As a thank-you for your assistance, you also have the option of entering a drawing for one of two \$50 Amazon gift cards regardless of whether you complete the survey to enter the drawing for the gift cards, you will need to click on the second link below and enter your name and e-mail address. Please note that your survey responses and the information that you provide for the drawing will not be linked in any way.

Thank you for your time, and I very much appreciate your participation in the survey. Please e-mail me at liairis@email.arizona.edu if you have any questions or concerns about the survey.

Please follow the link below to be taken to the survey informed consent page and complete the survey:

-----INSERT SURVEY HYPERLINK-----

Please follow this link to enter your name and e-mail address for entry into the Amazon gift card drawing:

-----INSERT HYPERLINK-----

APPENDIX E:
FACE-TO-FACE RECRUITMENT SCRIPT

Face-to-Face Recruitment Script

Hello, my name is Liana Haynes, and I am a doctoral nurse practitioner student at the University of Arizona. I recently sent you an e-mail about participating in a survey that I am conducting for my final project, and I am here to follow up and see if you are interested in hearing more about my study.

[If the provider says no, I will thank them for their time and stop here.]

I am conducting a survey to explore current practices and opinions regarding the use of palliative care in the trauma patient population. My goal is to determine if there are barriers to the use of palliative care within this population that could potentially be addressed with a future quality improvement project. I Have invited you to participate in my survey because you are directly involved in the care of trauma patients at Banner—Tucson campus, and your experiences will help me to better understand how palliative care is utilized within the trauma service.

If you are interested in participating in the survey there is a link provided in the e-mail that I sent you, and I can re-send it now if you no longer have it. The link will first take you to the consent page and then to the survey itself. As a thank-you for your time, you also have the option of entering a drawing for one of two \$50 Amazon gift cards regardless of whether you complete the survey. To enter the drawing for the gift cards, you will need to click on the second link in the e-mail to enter your name and e-mail address. Please note that your survey responses and the information that you provide for the drawing will not be linked in any way.

If you have questions or concerns at any time during this process, I will be happy to speak with you, and my contact information is available in the e-mail that you were sent.

Thank you very much for your time.

APPENDIX F:
TABLES OF EVIDENCE

Author / Article	Qual: Concepts or phenomena Quan: Key Variables Hypothesis Research Question	Design	Sample (N)	Data Collection (Instruments/tools)	Findings
DeVader & Jeanmonod, 2012.	To determine residents' comfort level in discussing/ managing EOL care, their knowledge of important concepts in palliative care and hospice, and to determine if a brief educational intervention will improve knowledge and comfort with EOL issues both immediately and over time.	Prospective cohort study	<p><u>Sample:</u> Emergency medicine residents (n=40).</p> <p><u>Setting:</u> Single Level I trauma center.</p>	<p>A survey utilizing multiple choice and 5-point Likert scale questions and one open-ended question on perceived barriers to utilization of palliative and hospice services in the emergency department (ED). The survey was administered one week before the intervention. The intervention was administered over a 2-week period, and included a 4 hour class with lectures based on curriculum from EPEC-EM. The survey was then re-administered after the educational session, as well as after 6 months.</p>	<p>83% of residents completed the pre-intervention survey, 78% completed the survey after the intervention, and 63% completed the survey at six months. 53% of residents completed all surveys. Prior to intervention, residents were able to identify 5 different diagnoses as hospice qualifying. After the intervention residents were better able to identify another 8 diagnoses as hospice qualifying. Residents were able to convert IV to PO morphine and dilaudid 30% and 36% of the time prior to the intervention, and 90% and 81% post-intervention. Residents had some improvement in comfort level with EOL symptom management after intervention, however not statistically significant. Residents' confidence with talking about EOL care increased from 3 to 4 on the Likert scale. 88% increase in transfer to hospice unit directly from the ED at 6 months after intervention. At 6 months, 80% of residents reported making a palliative referral, versus 61% reporting never having made a referral prior to the intervention. Number one barrier identified by residents in the qualitative portion of survey was lack of time, both pre- and post-intervention. However total barriers decreased after intervention.</p>

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Hua et al., 2014	To retrospectively determine the amount of patients admitted to the ICU that met criteria for a palliative care referral utilizing different trigger sets.	Retrospective cohort study	<p><u>Sample:</u> 385,770 admissions from the IMPACT database between 2001-2008.</p> <p><u>Setting:</u> Database of ICU admissions in the United States (Project IMPACT)</p>	<p>Primary Triggers included ICU admission for greater than 10 days, age >80 with 2 or more comorbidities, stage IV malignancy, status-post cardiac arrest, ICH requiring ventilation.</p> <p>Secondary Triggers for surgical patients included family request, presence of AD and/or family/staff disagreement, ICU stay >1 month, median survival <6 months, >3 ICU admissions, GCS <8 for 1 week in patient > 75, GCS of 3, multiorgan system failure of greater than 3 systems.</p>	<p>53,124 (13.8%) of admissions met at least one of the primary triggers for palliative consultation, with no significant variation between types of different ICUs and hospitals.</p> <p>93% of patients only met one trigger during the stay, with 6% meeting 2 triggers. The most frequent trigger was ICU admission after hospital stay >10 days, followed by stage IV malignancy and then cardiac arrest.</p> <p>Patients meeting at least one trigger were also less likely to be independent prior to admission. They were also more likely to be admitted from a floor than the emergency department or operating room. The alternate surgical triggers had moderate agreement with the primary triggers.</p>

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Karlekar et al., 2014	To determine factors and indications for palliative care consultation in the trauma intensive care unit (ICU).	Cross-sectional design.	<p><u>Sample:</u> Trauma MDs who were members of the Eastern Association for the Surgery of Trauma (EAST). All participants were volunteers. 358 providers responded, 80% were male and 77% practiced in Level I trauma centers.</p> <p><u>Setting:</u> EAST members in various locations</p>	<p>34-question survey that was e-mailed to 1232 EAST members. The survey was written by six palliative care and trauma content experts, and consisted of 29 questions with 4 opportunities to provide qualitative information.</p> <p>The survey was open for approximately one month, and during this time members were sent two reminder e-mails.</p> <p>The authors utilized SPSS to conduct statistical analysis. Chi square and post-hoc analysis were also used.</p>	<p>29% response rate achieved</p> <p>19.6% of physicians reported having no palliative team at their site. Of those who had palliative teams, 58% had teams that included APNs and physician assistants, and 57% included board certified palliative physicians</p> <p>There was a statistically significant difference in the frequency of palliative referrals when the respondents had access to a physician that was board-certified in palliative care.</p> <p>20% of participants reported not making a palliative referral in previous year, while the highest proportion of physicians (31%) reported making consults on 1-5 patients.</p> <p>55% of physicians reported that consults were beneficial, but 48% reported that palliative care was underutilized.</p> <p>The top three most commonly cited benefits of palliative referrals were assistance with EOL issues (72%), communication of prognosis (49%), and decrease in futility (60%).</p> <p>Barriers included families feeling that physicians were “giving up” (28%), lack of availability (26%), and lack of timely access (22%).</p> <p>Determinants warranting consult included low survival expectation, organ dysfunction, and difficult psychosocial situations.</p>

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Kupensky et al., 2015	Objective was to evaluate how consultation to a palliative medicine service impacted patient outcomes. Authors hypothesized that geriatric patients who received palliative medicine consultation (PMC) on or before post-trauma day 2 would have better symptom management, clear advance care goals, and shorter length of stay (LOS) than patients without a referral. Key variables included patient demographics, presence of PMC, time from admission to PMC, documentation of advance directive discussion, update of code status, total LOS and LOS in ICU, discharge disposition, injury severity score (ISS), abbreviated injury score (AIS), and management of pain, constipation, nausea/vomiting, and anxiety/agitation.	Retrospective, descriptive, correlational study.	<u>Sample:</u> Patients 65 years or older admitted to the trauma service in the ICU, n= 202 <u>Setting:</u> Surgical ICU	Data obtained from medical records, trauma registry, and chart abstraction. Discharge dispositions grouped by functional level at discharge. SPSS was used to analyze data, and included descriptive statistics, variance analysis, and chi-square analysis.	There was a PMC for 48% of patients, with advanced directive discussions in 50.5% of patients, and a change or update in code status in 28.7%. The most common discharge disposition in both groups was a skilled nursing facility. Patients with PMC were more likely to have advance directive discussion documented and code status updated (both statistically significant). Mean time from admission to PMC was 2.91 days, however ICU LOS was greatly reduced for patients with PMC on or before post-trauma day 2 (mean LOS 6.4 days versus 11.81 days). Overall LOS was also reduced for patients with PMC on or before post-trauma day 2 (7.92 days versus 13.11 days). All differences were statistically significant. Patients with a PMC were older, had a higher ISS, and had better symptoms management (all statistically significant differences).

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Lamba et al., 2013	Education and training. Relational or collaboration issues. Setting and environment of ER. Personal beliefs.	Descriptive study utilizing survey.	<u>Sample</u> : emergency medicine physicians, n= 30 <u>Setting</u> : Single urban tertiary teaching hospital.	Questionnaires distributed to emergency medicine residents during weekly training, and were ensured to be anonymous. Participants were asked 23 5-point Likert questions. Participants were also asked if they would initiate a palliative consult for specific clinical scenarios derived from established consult criteria.	67% of ER physicians completed survey, and included 23 residents and 7 attendings. Two main barriers identified were lack of 24-hour availability of the palliative care team, and lack of access to complete medical records. The majority of physicians said they would initiate a palliative consult for a hospice patient in respiratory distress, massive ICH, traumatic arrest, or metastatic cancer. However, they often did not consider palliative consults for triggers such as frequent readmissions for cirrhosis, CHF, and COPD exacerbations.

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Long et al., 2011	The authors' goal was to determine how surrogate decision makers choose to either withdraw or continue life support for patients with brain injuries, and to describe whether they believed healthcare providers could have better assisted them during this process.	Qualitative descriptive study.	<u>Sample</u> : Surrogate decision makers for patients with severe traumatic brain injury, n= 10 <u>Setting</u> : A single level-1 trauma center.	The hospital's electronic health record system identified patients who may be eligible, and their surrogate decision makers were recruited through the patient's trauma surgeon or neurosurgeon. Semi-structured interviews were conducted with surrogates for patients with a severe traumatic brain injury. Topics of the interviews included the context of their decision to withdraw or continue life support, a description of their decision making process, and questions about how the healthcare team could have better helped them. Data were collected over 3-months, with each interview lasting between 20-60 minutes. Interview were transcribed verbatim.	Surrogates included parents, children, and spouses, and half of the surrogates chose to withdraw life support, while the other half did not. These surrogates relied on the patient's prognosis, suspected quality of life, treatment burden, previous conversations with the patient, prayer, intuition, and statistics to aid in decision making. Themes regarding decision making were internal and external forces that helped with decision making, appreciation of ICU nurses' assistance with understanding how to care for the patient, and frustration with communication with physicians and their lack of availability, coupled with roles of alternate health care providers.

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Martin et al., 2014	To determine factors that affect trauma provider's EOL decision making. Outcome measures included: Reliance on family for EOL decisions, family emotional ability, family's ability to convey wishes, reliance on patients' AD, usefulness of AD, families following the patient's AD, patients' suspected QOL, patients' ability to receive assistance after discharge.	Descriptive study utilizing survey.	<u>Sample:</u> Members of the Eastern Association for the Surgery of Trauma (EAST), n= 375. 77% were from Level I trauma centers. <u>Setting:</u> Online, anonymous survey.	Survey consisted of 38 multiple choice questions. Included both demographic and 5-point Likert questions. An institutional pilot study was first created to test the validity of the survey. The survey was open for 6 weeks, and included one reminder e-mail. SPSS was used to analyze survey results using contingency tables.	65.5% of practitioners rely on family to make EOL decisions for the patient, but 79.9% felt that family members are rarely in an appropriate emotional position to make EOL decisions. 68.5% of providers felt that the family is rarely able to state the patient's wishes or goals of care when the patient is not in a position to do so. 59 % of providers rely on a patient's advance directive, and 56% felt family members followed the patient's AD. While 85.7% of providers considered a patient's potential quality of life after ICU discharge when making EOL decisions, 80% never consider the patient's ability to receive family assistance or pay for care following discharge. More experienced providers were more likely to feel comfortable making EOL decisions without family input, including making DNR orders.

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Mosenthal, et al., 2008	<p>The goal of this study was to improve end-of-life care in critically injured patients by integrating an interdisciplinary palliative care model in the trauma-surgical ICU.</p> <p>The authors hypothesized that this model would improve communication and change the end-of-life practices for these patients compared with previous practice.</p>	Prospective observational study	<p><u>Sample:</u> Patients admitted to the trauma surgical ICU, n= 286 in baseline year, n=367 in intervention year.</p> <p><u>Setting:</u> 14-bed trauma-surgical ICU at a level I trauma center.</p>	<p>5 clinical steps included: palliative care assessment by MD and nurse within 24 hours that included prognosis, advance directive, family support, surrogate decision maker, pain, and symptoms. Within 72 hours, interdisciplinary family meeting was held where outcomes, goals, and treatments were discussed. If goals of care transitioned from curative to palliative, palliative order set was implemented.</p> <p>Data were collected from medical records, audits of ICU rounds, and palliative care assessment sheets. Differences between intervention and baseline data were collected using parametric, non-parametric, and contingency tests.</p>	<p>83% of patients in the intervention group received part I of the intervention, and 69% received part II.</p> <p>Both groups had similar mortality rates (15% in baseline year and 14% in interventions year), and 43% of patients who died had do not resuscitate orders in both groups. 37% of patients in baseline group and 24% in intervention groups had withdrawal of life support, however DNR orders and withdrawal of life support happened earlier in the intervention group with no change in mortality rate. This was associated with shorter LOS for the intervention group. Family meetings were held approximately the same amount in both groups, however discussion of pain/symptom management and goals of care increased during rounds in the intervention group.</p> <p>During the intervention, 89% of patients who were predicted to die in the ICU did die, however only 31% of those received a DNR order.</p> <p>In those predicted to survive but with the lowest functional outcome there was a 26% mortality rate, however 75% of those patients had DNR orders. Time from DNR to death was also lengthened in the intervention group.</p>

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Tilden et al., 2009	The aim of this study was to explore the process of palliative consultation from trauma surgeons in order to better understand the interface between these two disciplines. Specific questions included: what patient-specific factors influence decision to consult palliative care? How to surgeons determine the timeframe for consultation? What are the goals with a palliative consult?	Qualitative: open-ended interviews.	<u>Sample</u> : attending physicians and with the trauma-burn and neurosurgery teams, n=9. <u>Setting</u> : Level 1 trauma center.	The grounded theory approach was used to identify similarities and differences in decision making between the physicians, to determine whether there is a framework for palliative care consults, and to discover themes in the description of the process.	Diagnostic criteria for palliative care varied between physicians, however in general physicians were less likely to consult palliative care if there was a likely meaningful recovery. They were also less likely to consult palliative care if imminent death was likely early in the patient's course. Timeline was also not specific, with the majority of surgeons relying on patient factors. In cases where the prognosis was not clear, surgeons often chose to consult later in the time period for fear that the family may misread their intentions. Goals for palliative care consult included different view point, transition of care, and auxiliary services, with very few physicians requesting consults solely for symptom management.

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Wessman et al., 2015	<p>Improve skills of providers regarding discussion of goals of care/end-of-life (GOC/EOL) issues, and increase comfort level of staff with providing transition to comfort care.</p> <p>Items measured from survey included space allotment, work stress, EOL information provided, and knowledge and ability regarding GOC/EOL communication.</p>	Prospective pre- and post-intervention survey design.	<p>Critical care team, including attendings, residents, acute care nurse practitioners, nurses, pharmacists, dieticians, respiratory therapists, social workers, pastoral care. N = 122 for first survey, 101 for second survey.</p> <p><u>Setting:</u> 24 bed surgical burn trauma intensive care unit (SICU) that was expanded to a 36 bed unit during the study period.</p>	<p>Intervention consisted of three phases.</p> <p>Phase 1: group formed consisting of nurses, CNSs, MDs social worker, chaplain, RT, dietician and pharmacist.</p> <p>Team identified top 3 areas for improvement, including development of a comfort care order set, patient and family needs, and multidisciplinary education of best practices. Survey e-mailed to staff at this time, covering knowledge, work environment, support for staff, support for patients/families, and work stress.</p> <p>Phase 2: creation of a multidisciplinary GOC/EOL team in the ICU, creation of standardized order sets, creation of pamphlets for families, creation of sample communication tools for providers.</p> <p>Phase 3: Implementation of items developed in phase 2, formalized didactic sessions for providers utilizing ELNEC curriculum, distribution of follow-up survey.</p>	<p>50.4% response rate for initial survey, 36.1% response rate for follow-up survey.</p> <p>Statistically significant improvements were seen with work stress, space allotment, and EOL information provided to patient/families and caregivers. However, there was a lack of statistically significant improvement in the knowledge and ability domain.</p>

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