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Increasing Equitable Access to Care: Implementation of Universal Palliative Care Screening in the Intensive Care Unit

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**Increasing Equitable Access to Care: Implementation of
Universal Palliative Care Screening in the Intensive Care Unit**

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This Manuscript Partially Fulfills the Requirements for the

Doctor of Nursing Practice Program and is Approved by:

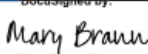
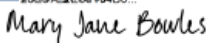
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Abstract

Practice Problem: At a small community hospital in Virginia, there is an absence of standardized screening processes for identifying intensive care unit (ICU) patients with unmet palliative care needs, contributing to delayed and unequitable access to palliative care consultations.

PICOT: The PICOT question that guided this project was "In adult ICU patients, how does implementing a palliative care screening tool upon ICU admission, as compared to standard ICU admission protocol, affect palliative care consultations within an 8-week time frame?"

Evidence: This project was guided by consensus reports from the World Health Organization and the Centers to Advance Palliative Care, systematic reviews, and retrospective cohort studies evaluating the use of palliative care screening tools in the acute care setting.

Intervention: In a 6-bed ICU, a validated palliative care screening tool was implemented over an 8-week period to screen all ICU patients within 24 hours of admission. Pre and post-implementation data were collected from the electronic medical record to analyze the number of ICU patients screened, patients with positive screenings, and palliative care consultations placed.

Outcome: Overall screening compliance was 71 percent for all ICU patients, with 66 percent screened within 24 hours of admission. Although there was not a significant increase in palliative care consultations, the time from ICU admission to consultation decreased by 2.88 days and the ICU mortality rate for patients with consultations decreased by 83 percent.

Conclusion: The palliative care screening tool did not generate more palliative care consultations; however, this tool facilitated identification and consultation for patients earlier in the ICU stay. More work is needed to overcome barriers to consultation and expand access to palliative care services throughout all inpatient units.

Increasing Equitable Access to Care: Implementation of Universal Palliative Care Screening in the Intensive Care Unit

Over the last decade, palliative care has established itself as a human right and a fundamental component of holistic, patient-centered care. The demand for palliative care integration, particularly in the intensive care unit (ICU), has grown exponentially, owing to an aging patient population that is living longer with serious illnesses and requiring greater utilization of critical care services (Hughes & Smith, 2014). Early palliative care consultations can reduce ICU length of stay (LOS), ICU mortality rates, aggressive interventions, and cost of care, while significantly improving quality of life. However, a lack of standardized consultative processes make timely identification and referral of patients challenging; consequently, resulting in unequitable access to this essential service (Rosa et al. 2021). These issues have been amplified by the COVID-19 pandemic, which has dramatically increased ICU bed occupancy, symptom distress, and deaths. Use of a validated palliative care screening tool can facilitate rapid identification of ICU patients with unmet palliative care needs and promote earlier consultations (Weissman & Meier, 2011). An evidence-based practice project was formulated to determine whether implementing a palliative care screening tool in the ICU could increase palliative care consultations and equitable access to these important services.

Significance of the Practice Problem

Palliative care is a relatively new medical specialty that endeavors to provide comprehensive physical, psychosocial, and spiritual symptom management for patients diagnosed with serious illnesses (Aslakson et al., 2014). It has seen exponential growth and advocacy over the last decade, being recognized by the World Health Organization (WHO) as a human right and fundamental component of patient-centered care (Cruz-Oliver, 2017). National calls to action for palliative care integration within mainstream healthcare systems have intensified amid an aging patient population, with an increased prevalence of having multiple comorbidities and longer life expectancies (Hughes & Smith 2014). Integration of these

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essential services is particularly important in ICUs, where nearly 75 percent of patients experience a broad spectrum of distressing symptoms and are at higher risk for death (Mercadante et al., 2018). Despite mounting support for palliative care in the ICU, equitable access remains challenging due to a persistent lack of standardized processes for identification and referral of patients with unmet palliative care needs.

Global Significance

Unequitable access to palliative care services is a persistent international issue that has been amplified by the COVID-19 pandemic. The WHO estimates nearly 56.8 million people could benefit from palliative care services, with 78 percent located in low-to-middle income countries (World Health Organization, 2021). A mere 14 percent of these patients receive palliative care, primarily in high-income countries (Poudel et al., 2019). Twenty countries out of 234 (8.5%) offer comprehensive palliative care services, with only one being a low-to-middle income country. Palliative care is nonexistent in 31 percent of countries and limited in another 32 percent. Lower income countries also contend with profoundly inadequate pain management, attributed to receiving less than 1 percent of the global supply of morphine despite containing 50 percent of the global population (Bhadelia et al., 2019). In contrast, more than 90 percent of morphine goes to 10 percent of the global population who live in high-income countries. The COVID-19 pandemic has exacerbated these disparities as weaker healthcare systems grapple with surges in critically-ill and end-of-life patients (Rodin et al., 2020). Increased demand for palliative care services, limited supply of analgesic medications, and higher symptom burdens have led to immense suffering of the world's poorest populations. These factors have prompted the WHO to renew calls to action for expansion of palliative care services and strategies to reduce access barriers.

National Significance

Although the United States (US) is a high-income country, many healthcare organizations struggle to provide equitable access to palliative care services (Hawley, 2017).

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Nationwide, an estimated 6 million people need palliative care but do not receive it. Barriers to access have been attributed to a lack of palliative care resources, knowledge deficits of patients and healthcare providers, reluctance to refer or be referred, and racial disparities. Minority patients of lower socioeconomic statuses are 33 percent less likely to receive palliative care (Wachterman & Sommers, 2021). One in three palliative and hospice programs offer limited or no services to uninsured patients and undocumented immigrants, making these populations more likely to suffer from greater symptom burdens. Other issues stem from traditional palliative care programs mainly focusing on cancer symptom management and neglecting suffering caused by other diseases. Minority patients have a higher prevalence of diseases causing end-organ failure, such as end-stage-renal-disease or congestive heart failure, rather than cancer. These patients frequently experience severe symptoms similar to cancer but are 23 percent less likely to receive palliative care referral and 19 percent more likely to die in the ICU. Contributing factors include subjective referrals by physicians and lack of education regarding who may qualify for palliative care services (Hawley, 2017). Palliative care screening and referrals based on need, rather than diagnosis, can be an effective strategy to provide equitable access to palliative care services (National Consensus Project for Quality Palliative Care, 2021).

The COVID-19 pandemic reinforced the importance of palliative care services in the ICU. Overall ICU mortality rates for COVID-19 patients were estimated to be as high as 30 percent directives, with minority patients disproportionately affected (Schockett et al., 2021). Caring for these critically-ill patients has proven especially difficult for ICU staff, due to rapid worsening of symptoms, high utilization of aggressive interventions, visitor restrictions, and lack of advanced health directives. Ninety-two percent of ICU nurses reported coping with moral distress while caring for patients receiving aggressive and futile treatments (Wolf et al., 2019). More than 46 percent of ICU nurses considered changing jobs or leaving the nursing field entirely, which contributed to critical staff shortages. Increasing palliative care consultations in

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the ICU can decrease moral distress and provide an additional layer of support for patients, families, and healthcare providers.

Organizational Significance

Due to COVID-19 patient surges, the organization has experienced persistent ICU bed occupancy greater than 70 percent in 2021. Throughout December 2021 and January 2022, ICU bed capacity has exceeded 100 percent and triggered activation of the hospital's incident command system. Early identification and referral of patients with unmet palliative care needs have effectively reduced the strain on ICUs, facilitating on average a 33 percent reduction in ICU length of stay (LOS) and a 30 percent reduction in ventilator use (Mercadante et al., 2018). Healthcare organizations can save nearly \$1.6 million dollars per year by conducting 500 palliative care consultations (1.36 consultations per day) (Centers to Advance Palliative Care, 2020). Other added benefits include a 50% reduction in total hospital admissions, 48% reduction in 30-day readmissions, and improved patient satisfaction scores- which therefore increases Medicare reimbursement rates. Currently, the organization does not possess a standardized process for palliative care screening and consultation. Implementation of a validated palliative care screening tool can facilitate palliative care consultations, to promote more equitable access to palliative care, improve quality of life for ICU patients, and help achieve quality measure goals (Centers to Advance Palliative Care, 2019).

PICOT Question

The PICOT question for this project was "In adult ICU patients (P), how does implementing a palliative care screening tool upon ICU admission (I), as compared to standard ICU admission protocol (C), affect palliative care consultations (O) within an 8-week time frame (T)?"

The specific targeted population for this project were patients over the age of 18, admitted to the 6-bed intensive care unit (ICU) at a community hospital in northern Virginia. The intervention consisted of using the validated Centers to Advance Palliative Care (CAPA)

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palliative care screening tool to objectively identify patients with unmet palliative care needs.

The palliative care screening intervention was conducted by ICU nurses within 24 hours of a patient's admission to the ICU. Education materials for ICU nurses, intensivists, patients, and families were provisioned, highlighting the benefits and services offered by the palliative care team. The outcomes of the project intervention were compared to previous practices during the same 8-week period in 2021, where palliative care screening was not a component of the organization's ICU admission process. The primary measured outcome was the number of palliative care consultations placed during implementation of the palliative care screening tool. Secondary outcomes included the number of patients screened, the number of patients with positive screenings without consultation, average ICU length of stay, and ICU mortality rate. The duration of the project's intervention and data collection was scheduled to occur over a consecutive 8-week timeframe.

The short-term goal of this project was to use a palliative care screening tool to identify patients with unmet palliative care and refer them to palliative care services earlier in the ICU stay. The long-term goal of this project was to decrease ICU length of stay and mortality rate.

Evidence-Based Practice Framework & Change Theory

The Johns Hopkins Evidence-Based Practice (JHEBP) framework was integrated within each component of this project. The JHEBP framework utilized practice, evidence, and translation, executed via 19 sequential steps, to promote the integration of the highest levels of evidence and current best practices into actual care environments (Dang et al., 2022). Several essential resources were provided by Johns Hopkins, including 10 guides and appraisal tools, which were applied during specific phases of this project's development and implementation. Four evidence appraisal tools were most utilized, particularly during the literature review, to select exemplar studies with the greatest potential to support positive outcomes and meaningful practice changes. Palliative care research has historically lacked randomized-control studies (RCT), due to inherently vulnerable patient populations, impact of too many variables affecting

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intervention and control groups, and the subjective nature of quality of life outcome measurements (Visser et al., 2015). Evidence appraisal tools were helpful in selecting high quality studies with mixed-method approaches. Likewise, the concepts within the action planning tool were evaluated to determine whether the project intervention was practical, applicable, and appropriate for the intended setting.

Lewin's Change Theory was selected to drive organizational change for this project. This theory had a broad focus on behavioral components of change and the influential factors that supported or hindered change. It consisted of 3 simple processes (unfreezing, changing, and refreezing) that were sequentially applied to achieve successful practice changes for countless healthcare systems since the 1920's (Burnes, 2019). Unfreezing consisted of assessing and inspiring the willingness for change, by the organization and key stakeholders. Changing involved implementation of the intervention, encouraging performance of targeted behaviors, and providing guidance. Refreezing was the last step, where the targeted behaviors were positively reinforced and sustainable practice changes were established. Generating key stakeholder buy-in was especially pertinent to this intervention, where compliance with performing targeted behaviors was the most essential component of implementation. If ICU nurses were not reliable conducting palliative care screening assessments, then subsequent components of this DNP capstone project would have been rendered useless.

Evidence Search Strategy

The evidence search strategy for this project utilized the Cumulative Index of Nursing and Allied Health Literature (CINAHL), Public Medline (PubMed), and Ovid Emcare databases. The key words intensive care, critical care, critically ill, ICU, palliative care screening, palliative care trigger, palliative care integration, palliative care consultation, palliative care referral, early palliative care, and proactive palliative care were used to search the title and abstracts, in conjunction with the Boolean phrases "AND" or "OR". The search results were limited to academic journals that ranged from 2010-present, available in English language, conducted at

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least partially in the US, piloted within the acute care setting, and contained adult populations. Articles that were outside of the date range, written in foreign languages, conducted only in foreign countries, piloted in outpatient or long-term care settings, or contained pediatric populations were excluded from the search. Additionally, articles that consisted of conference abstracts, project posters, or on-going research studies with unpublished outcomes were also excluded.

Evidence Search Results

A total of 64 records were identified during the initial review of the literature (see Table 1). Fifteen records were retrieved from CINAHL, 10 records from PubMed, and 39 records from Ovid Emcare. Twenty duplicate records were removed before screening. Three additional records were removed by the automation tool using the geography filter. Forty-one records were then screened for inclusion in the literature review. Seven records were manually excluded due to their focus on pediatric and neonatal patient populations. Six records were excluded due to having irrelevant interventions, such as using the fragility assessment scale or chaplain consultation in the ICU. Four articles were also removed for being conducted in non-ICU settings. Twenty-four records were ultimately selected for meeting all inclusion and exclusion criteria of the literature search (see Appendix A and B).

These 24 records were reviewed to determine whether sufficient support exists for the use of palliative care screening tools in the ICU. Each record's level of evidence was graded using the JHEBP Hierarchy of Evidence Guide, while the quality of evidence was graded using the Research Evidence Appraisal Tool (Dang et al., 2022). Four systematic reviews were identified during the literature review, all of which were graded as JHEBP Level I (see Table 2). Two of the four systematic reviews were graded as Quality A and two were graded as Quality B. Only one randomized control trial with a JHEBP Level I, Quality B evidence grade was identified during the evidence search. Likewise, a single JHEBP Level II, Quality B quasi-experimental study was also discovered.

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The majority of records for the evidence search contained retrospective cohort studies and quality improvement projects. Eight retrospective and prospective cohort studies were graded as JHEBP Level III. Three had a quality grade of A and 4 had a quality grade of B. One JHEBP Level III article had a quality C grade, as it lacked statistical data content for reader review. Two JHEBP Level IV consensus reports from the Improving Palliative Care in the ICU (IPAL-ICU) initiative and the Center to Advance Palliative Care (CAPC) advisory panel were included, both with quality A grades. Another 8 JHEBP Level IV quality improvement projects were also identified, 2 with quality A grades and 6 with quality B grades.

Themes with Practice Recommendations

There were several themes that resonated within the literature review for this project proposal. The three most common themes included unmet palliative care needs, benefits of early palliative care consultation, and barriers to palliative care consultation in the ICU. Many studies also featured underlying subthemes, such as strategies for faster identification of patients in need of palliative care, trigger-based versus nurse-driven consultations, and consultative versus integrative palliative care models. Although some studies had varying degrees of success with palliative care interventions, every source reinforced the expanding role of palliative care as an essential component of modern critical care medicine.

Unmet Palliative Care Needs

The predominant theme throughout the literature review was the overwhelming prevalence of unmet palliative care needs in the ICU. The four systematic reviews reiterated the increased incidence of high symptom burdens for ICU patients, as well as increased need for family/caregiver communication (Aslakson et al., 2014; Khandelwal et al., 2015; Kerckhoffs et al., 2019; Hamdan et al., 2020). Several Level III studies confirmed approximately 20 percent of all ICU patients met at least one IPAL-ICU screening criteria for palliative care (Hua et al., 2014; Nelson et al., 2013; Secunda et al., 2021). The leading triggers for initiating palliative care consultations were patients with an ICU admission after more than 10 days in the hospital,

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stage IV cancer, and patients over the age of 80 with at least two life-threatening conditions.

Evidence showed palliative care screening tools that utilized these validated criteria were more effective with identifying ICU patients with unmet palliative care needs (Hua et al, 2014; Lapp & Iverson, 2015; Martz et al., 2020; Zalenski et al., 2014).

Benefits of Early Palliative Care Consultation

Another prevalent theme throughout the literature review was the importance of early palliative care intervention in the ICU. Three Level I systematic reviews supported the numerous benefits provided with integrating palliative care services in the ICU, such as reducing the number of ICU admissions and ICU length of stay (Aslakson et al., 2014; Khandelwal et al., 2015; Kerckhoffs et al., 2019). These reductions were maximized when palliative care teams were consulted within the first 3 days of an ICU admission. Other benefits included reductions in aggressive and/or futile interventions, decreased cost of care, increased DNR status, and improved patient/family satisfaction (Creutzfeldt et al., 2015; Ma et al., 2019; Mosenthal et al., 2012; Nelson et al., 2013; Zalenski et al., 2017). Level III studies strongly supported the use of palliative care screening upon ICU admission as an effective strategy for facilitating early palliative care consultations (Jenko et al., 2015; Lapp & Iverson, 2015; Martz et al., 2020; Ma et al., 2019, Sihra et al., 2011). However, the authors of these studies also highlighted the need for screening periodically throughout the ICU stay, to identify patients who may develop high symptom burdens after the initial screening.

Barriers to Palliative Care Consultation

Although the benefits of palliative care consultations were exemplified, barriers to palliative care consultation in the ICU were significant challenges for the majority of the studies. Several authors noted that palliative care screening tools were quite effective in identifying patients with unmet palliative care needs; however, there were considerable difficulties with placing consultations (Hua et al., 2014, Jenko et al., 2015; Martz et al., 2020; Secunda et al, 2021; Zalenski et al., 2014). Organizational culture was a significant factor that negatively

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affected palliative care consultations for patients with positive screening criteria. Physicians typically had the sole authority to initiate consultations, which were mostly based on subjective observations and occurred after most treatment options were exhausted. This contributed to unequitable access to palliative care and confusion of palliative versus hospice services. Nurses were reluctant to place consultations due to knowledge deficits and lack of empowerment (Aslakson et al., 2014; Jenko et al, 2015; Nelson et al; 2013; Sihra et al., 2011). This was particularly problematic as nurses were considered to be more effective in identifying patients with unmet palliative care needs and in the best position to facilitate palliative care consultations. To overcome these barriers and empower nurses, nurses and physicians should receive appropriate education prior to implementing a palliative care screening protocol.

Setting, Stakeholders, and Systems Change

This Doctor of Nursing Practice (DNP) capstone project was conducted in the ICU of a small, 100-bed community hospital in Northern Virginia. The ICU consisted of 6 beds, which served critically-ill medical and surgical patients. For patients admitted to this ICU, acute respiratory failure, sepsis, and metastatic cancer were the most common admitting diagnoses.

Organizational Need

The organizational need for this project was established after interviewing key stakeholders and conducting a SWOT analysis of the practice setting (see Appendix C). Although the hospital had a palliative care team and a CAPC-validated palliative care screening tool within its EMR, neither the hospital nor the healthcare organization possessed a standardized screening and consultative process for patients in need of palliative care services. There were valuable opportunities associated with implementing a palliative screening tool to facilitate earlier palliative care consultations in the ICU. These included reducing patient symptom burdens, increasing ICU bed availability, enhancing associate engagement, and improving patient/family satisfaction (Aslakson et al., 2014; Khandelwal et al., 2015; Zalenski et al., 2017). The project's goals and potential benefits were in line with the organization's mission

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to “improve the health and well-being of the communities we serve.” Implementation of palliative care screening in the ICU was anticipated to have a micro systems change, impacting only a small sector of the organization and roughly 20 employees.

Key Stakeholders

Several key stakeholders were identified from various departments within the organization that will impact or may be impacted by the project. The primary stakeholders were ICU patients, as they were the targeted population and would benefit the most from the intervention. Patients’ families could have been classified as a primary stakeholder as well, depending on the reason for palliative care consultation. ICU nurses, hospitalists, and the palliative care team were the second most important stakeholders for the project. Without clinical staff buy-in and compliance with palliative care screening, the project would have been wholly unsuccessful. Initial approval and continued support for the project was required by the hospital administrators and ICU manager. Assistance from the organization’s clinical informatics team was needed to extract EMR data for statistical analysis to evaluate the outcomes of the intervention. Interdisciplinary collaboration between the palliative care team, ICU nurses, and physicians was essential throughout the project to address barriers and make adjustments when necessary. Furthermore, clear communication and active engagement with all stakeholders were crucial elements for maintaining key stakeholder buy-in and ensuring long-term sustainability of the project.

Implementation Plan with Timeline and Budget

The intervention for this project consisted of using the CAPC’s palliative care screening tool upon admission to the ICU (Weissman & Meier, 2011). The CAPC palliative care screening tool was scheduled to be implemented in the ICU for a total of 8 weeks. The three phases of Lewin’s Change Theory: unfreezing, changing, and refreezing, were also applied to help guide the implementation of the CAPC palliative care screening tool in the ICU (see Appendix D for project schedule).

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Implementation of the Palliative Care Screening Tool

During the implementation of this project intervention, ICU nurses would utilize the Epic EMR's CAPC palliative care screening flowsheet to screen all ICU patients within 24 hours of admission (see Appendix E). ICU patients with at least 3 primary admission criteria and 1 secondary admission criteria would be considered to have a positive screening. With attending hospitalist approval, ICU nurses would place palliative care consultation orders in the Epic EMR for patients with positive screenings. "Positive screening" and the number of criteria met would be documented in the order comment section as the reason for consultation. This would allow the palliative care team to prioritize consultations when constrained by staffing or time. Patients and/or family members were to be notified of the consultation and provided a palliative care educational handout (see Appendix F). Patients and family members with medical decision-making power reserved the right to refuse palliative care consultation. Refusal of palliative care consultation would be documented by the ICU nurse or palliative care provider in a brief focus note. Incarcerated and confidential patients would be excluded from all aspects of this project.

Unfreezing

The first phase of Lewin's Change Theory consisted of "unfreezing" current practice behaviors to instill a motivation to change (Burnes, 2019). Baseline statistics would be gathered and presented within this project proposal to help support the practice problem. After submission of the project proposal, project approval would be secured from the organization's internal review board (IRB). Next, meetings with individual key stakeholders would be scheduled to discuss the mission and vision of this project. This would provide key stakeholders the opportunity to ask questions and share challenges experienced with provisioning palliative care in the ICU. Key stakeholder leaders from each department would be chosen to form a project team and collaborate to address any potential barriers prior to implementation of the intervention.

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Change Process

To drive the change process prior to implementation, educational materials were disseminated to ICU nurses and one-on-one training provided by the project manager and the critical care nurse educator (See Appendix F). Short-term outcome goals were outlined at weekly intervals, while communication of goal achievements was scheduled for bi-weekly intervals throughout the implementation timeframe. This would help generate positive reinforcement of the desired behaviors (screening) and provide opportunities for modifying less-desired behaviors (Burnes, 2019). Frequent one-on-one key stakeholder meetings were scheduled at weekly intervals to sustain support for the project. Likewise, any additional barriers encountered during the intervention would be addressed quickly to ensure compliance with the screening process.

Re-Freezing

Data would be collected and analyzed at weekly intervals, with final data analyses occurring at the end of the 8-week implementation timeframe. The project manager and the organization's data analyst would conduct a statistical analysis to evaluate the project's outcome metrics. The aggregated final results would be disseminated to the key stakeholders and the organizational leadership team via infographic posters and a short PowerPoint presentation. If the project was successful, the project manager would make any necessary modifications to the implementation process, then seek approval by the IRB and leadership to expand the intervention to other inpatient units. This would re-freeze the successful behaviors generated by the project and sustain the project's practice changes until new modifications were needed in the future (Burnes, 2019).

Project Outcomes with SMART Goals

The primary outcome for this project was to increase palliative care consultations by identifying ICU patients with unmet palliative care needs earlier in their hospital stay. The most important SMART goal for achieving this outcome would be nurses' compliance with screening

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at least 60 percent of patients within 24 hours of ICU admission, by the end of the 8-week timeframe. The second SMART goal was to attain palliative care consultations for 60 percent of ICU patients, who met 3 or more primary admission criteria and at least 1 secondary admission criteria, by the end of the 8-week timeframe. These two outcome metrics were used to evaluate the effectiveness of the palliative care screening tool and the sustainability of the new consultation process.

Secondary project outcomes included a reduction in the average ICU length of stay and a reduction in the average ICU mortality rate. The project's third SMART goal was to achieve an average ICU length of stay of 7 days or less, by the end of the 8-week timeframe. The fourth SMART goal was to reduce the average ICU mortality rate by 10 percent, by the end of the 8-week timeframe. The secondary outcome metrics were used to evaluate the impacts palliative care consultations had on resource utilization and CMS quality measures.

Budget

Overall, this project was expected to inflict no additional expenses on the organization (see Figure 1). Approximately 12 ICU nurses were employed by the organization and possessed the ability to perform palliative care screenings, although this was not a standard practice. The organization also possessed a palliative care team (1 physician and 3 nurse practitioners), who consulted ICU patients as a part of their normal daily workflow. Likewise, the organization owned a version of the Epic EMR software system, which contained the CAPC palliative care screening tool and was readily available for use. As a member of CAPC, the IPAL-ICU project planning tools were free to access until 2023. Additionally, a data analyst with the organization graciously volunteered to donate "in-kind" to perform a statistical analysis of the collected data.

This project did not require any additional labor or services to implement its intervention. Rather, it aimed to utilize the staff and resources already in place to create a more streamlined, efficient process for identifying and referring ICU patients to palliative care services. The only

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expenses associated with this project were supplies for printing educational materials for ICU nurses, which was paid for out-of-pocket by the project manager. Although the project was essentially cost-neutral, the organization could benefit from significant cost savings (up to \$246,152) if the intervention successfully increased palliative care consultations. As previously mentioned, CAPC estimated increasing palliative care consultations by 1.36 consults per day could result in a cost savings of \$1.6 million dollars annually ($1.6 \text{ million} / 52 \text{ weeks} = \$30,769$ per week. $8 \text{ weeks} \times 30,769 = \$246,152$ for 8 weeks) (Centers to Advance Palliative Care, 2020).

Results

Quantitative and descriptive statistics were used to analyze pre and post-implementation data for this project. Pre-implementation data was collected from the Epic EMR for ICU admissions ($n=89$), occurring from July 10, 2021-September 10, 2021, to analyze the number of palliative care consultations placed, average ICU length of stay, and ICU mortality rate (See Appendix H). Of these admissions ($n=89$), 7 ICU patients (8%) received palliative care consultations. For consulted patients ($n=7$), only one patient (14%) received consultation within 24 hours, while 6 patients (86%) received consultation >48 hours after ICU admission. Total ICU mortality was 9 percent, although 100 percent of consulted patients ($n=7$) expired in the ICU. The average LOS for all ICU patients ($n=89$) was 2.99 days, while the average LOS for patients with consultation ($n=7$) was 9.46 days.

Throughout the 8-week project intervention timeframe, post-implementation data was collected from the Epic EMR from July 10, 2022-September 10, 2022, to evaluate the number of ICU patients screened, number of palliative care consultations placed, average ICU length of stay, and ICU mortality rate (see Appendix G for categories and specific metric measurements). For each outcome measure, a p-value of less than 0.05 was considered statistically significant.

A total of 82 patients were admitted to the ICU during the 8-week implementation period. Five of these patients were excluded from the study due to being incarcerated or classified as a confidential chart. After exclusion of these five patients, a total of 77 patients were included for

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participation in this project. For all ICU patients (n=77), 55 patients (71%) were screened using the palliative care screening tool, with 51 patients (66%) being screened within 24 hours of ICU admission, 4 patients (5%) not screened within 24 hours, and 22 patients (29%) not screened at any point during their ICU admission.

10 ICU patients (13%) met criteria for palliative care consultation (See Appendix I). Of those with positive screenings (n=10), 4 patients (40%) received palliative care consultations within 24 hours, while 2 patients (20%) received consultation >48 hours after ICU admission. Another four patients (40%) did not have consultations placed, despite positive screenings, due to hospitalists' declination.

The discharge disposition for patients with palliative care consultations (n=6) included one patient (17%) who expired in the ICU, 3 patients (50%) discharged with home hospice, and two patients (33%) discharged home. The discharge disposition for the ICU patients with positive screenings and no consultation (n=4), included 2 patients (50%) who were transferred to a skilled nursing facility and two patients (50%) discharged home. Total ICU mortality was 9 percent for all ICU patients and 17 percent for patients with consultation, respectively. The average ICU LOS for all ICU patients (n=77) was 2.11 days, while the average LOS for screened patients with consultation (n=6) was 5.69.

Of the total ICU patients admitted during the 8-week intervention timeframe (n=77), two ICU patients (3%) initially had negative screenings upon ICU admission, but rapidly deteriorated and were consulted by the palliative care team after re-evaluation by the ICU clinicians. One patient expired in the ICU, while the other expired on the medical-surgical unit. Both were DNR at the time of admission.

Statistical Significance

A Wilcoxon signed rank test was performed for statistical analysis of pre and post-intervention results, where a p-value less than 0.05 was considered statistically significant. The number of palliative care consultations placed pre-intervention (n=7) and post-intervention (n=6)

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were not statistically significant ($p=0.317$). Likewise, the difference in Total ICU LOS for 2021 (M 2.99 days) and 2022 (M 2.11 days) were not considered statistically significant ($p=0.1314$). However, the mean time to palliative care consultation post-implementation (1.33 days) was notably lower in comparison to pre-implementation data (4.14 days) and considered statistically significant ($p=0.024$). Post-implementation outcomes for ICU mortality were also statistically significant, with a 6 percent reduction in total ICU mortality ($p=0.014$) and an 83 percent reduction in ICU mortality for patients with consultation ($p=0.025$).

Evaluation of Project Plan Fidelity

Nurse compliance with performing palliative care screenings was the most critical component of this project. Failure to screen patients within 24 hours of ICU admission could have resulted in negative outcomes and subsequently, project failure. As such, compliance with the screening process was validated and tracked weekly using the Epic EMR. Clinically meaningful criteria for measuring fidelity to the project plan was considered achieved if >60 percent of ICU patients had completion of the palliative care screening flowsheet. Any variances were managed with peer coaching, obtaining frequent key stakeholder feedback, celebration of short-term goals, and positive reinforcement of the project's mission and objectives. Barriers impacting screening compliance were assessed and addressed throughout the 8-week intervention timeframe.

Patient Privacy Considerations

To protect patient privacy, the organization's Epic EMR's InterSystems IRIS Data Platform was used to collect, store, and retrieve pre and post-implementation data. A data analyst employed with the organization assisted with retrieving and analyzing project data. All statistical reports generated from the Epic EMR only contained aggregated data, which was categorized in a confidential Excel spreadsheet in the organization's secure cloud. Intellectus Statistics, a validated alternative to IBM's SPSS Statistics, was also used for analysis of the

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aggregated data within the Excel spreadsheet (Intellectus Statistics, 2020). As previously mentioned, incarcerated patients were excluded from all aspects of this project.

Approval Process

This project was approved by the University of St. Augustine for Health Sciences' (USAHS) EBP Project Review Council (EPRC) and the hospital's institutional review board (IRB). Hospital administrative approval was obtained during the project proposal development and was contingent on IRB approval.

Impact

Implementation of a palliative care screening tool in the ICU was largely successful. Seventy one percent of all ICU patients had completed screenings, 66 percent were screened within 24 hours of admission, and 60 percent received palliative care consultations (See Appendix H). These outcomes met the project's primary goal objectives for screening and consulting 60 percent of ICU patients. Surprisingly, the screening tool did not generate a greater number of palliative care consultations compared to pre-implementation data, although the screening tool did identify a greater number of patients with unmet palliative care needs. The most clinically-significant impact generated by this project was an average reduction of 2.88 days from ICU admission to palliative care consultation. The second most clinically-significant impact was a 6 percent reduction in total ICU mortality rates and an 83 percent reduction in ICU mortality rates amongst ICU patients who received consultations. The total ICU LOS was not significantly impacted, but the mean ICU LOS for patients with consultations was reduced by 3.77 days. This may be attributed to patients with unmet palliative care needs being identified and receiving consultations earlier in the ICU stay, compared to pre-implementation patient populations.

The screening tool was highly effective with identifying patients with chronic conditions, particularly metastatic cancer. It struggled to identify patients with more acute, life-threatening conditions. For example, one ICU admission was an aortic dissection that was deemed

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unsalvageable. This patient was facing imminent death but did not meet enough screening criteria to qualify for palliative care consultation upon ICU admission. However, the ICU nurses reevaluated the patient with the screening tool again when the patient's status deteriorated and were able to recommend consultation on Day 4. This highlighted the need for screening patients at regular intervals to identify patients who may qualify for palliative care consultation later in the ICU stay.

Barriers and Limitations

Screening of lower acuity patients posed the greatest barrier for compliance with this project intervention. A post-implementation evaluation was conducted to determine whether any of the 22 unscreened patients may have qualified for palliative care consultations. A chart review concluded none of the unscreened patients would have qualified for consultation and subjective ICU nurse assessment was sufficient in making this determination. This emphasized a key limitation of the screening tool, as it aided in providing objective support for consultation, but may not be essential for accurately eliminating ineligible patients.

Ten ICU patients had positive screenings, but 4 patients did not receive consultations due to hospitalist decision-making. Two of these patients were admitted under out-of-network hospitalist services and had life-threatening conditions. As a normal workflow, any complex care patients under these services are usually transferred to a local in-network facility; however, that facility was at maximum bed-occupancy during implementation of this project. These circumstances resulted in a lack of equitable access to essential services for these out-of-network patients. Follow-up will be needed to address how to approach this issue in the future.

Likewise, another patient met numerous screening criteria but was initially declined palliative care consultation due to being diagnosed with metastatic cancer of unknown origin during this admission. The physician opted to wait for further diagnostic work-up and oncologist treatment recommendations before ordering palliative care consultation. This case emphasized

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an important limitation of this tool, as clinical judgement was still required to determine appropriateness and timing of consultations.

Sustainability

The ICU nurses provided anecdotal post-implementation feedback, reporting the screening tool was easy to use and provided rapid, objective data when advocating for palliative care consultations. Screening criteria scoring also allowed the palliative care team to prioritize consultations by level of need, which may be advantageous when contending with census surges and short-staffing in the future. Since the screening tool existed within current EMR documentation flowsheets, it facilitated smoother incorporation and utilization in normal nursing workflows. These factors help promote long-term sustainability of the project plan and support expansion of palliative care screening on other inpatient units. Collaboration with the organization's clinical informatics team would be necessary to develop a more efficient EMR reporting and evaluation method if this intervention is to be widely adopted.

Dissemination Plan

The project's final results were translated into an infographic document, which was shared and celebrated with the ICU nurses, palliative care team, and hospitalists. A project poster was also created to generate greater awareness of its availability for nursing staff, management, and other healthcare providers working on other inpatient units. Dissemination of the project and outcomes is scheduled to be shared at the organization's Best Practice Council and Quality & Safety Council in December 2022, which will be attended by the Chief Nursing Officer, Director of Nursing, and numerous senior leadership executives. Additionally, a final virtual presentation is scheduled for December 2022, at the DNP Scholarly Project Symposium for University of Saint Augustine for Health Sciences. The completed DNP capstone paper will be uploaded to the University of Saint Augustine for Health Sciences' Scholarship and Open Access Repository (SOAR) database for future dissemination and preservation of this project.

Conclusion

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Since the onset of the COVID-19 pandemic, the need for integration of palliative care services in the ICU has never been greater. Despite numerous studies highlighting the overwhelming prevalence of ICU patients with unmet palliative care needs, healthcare providers have struggled with identifying and referring these patients in a timely manner. The positive outcomes generated by this project support universal screening to expedite identification of qualifying patients and placement of palliative care consultations earlier in the ICU stay. Healthcare organizations and patients may additionally benefit from improved quality of care, decreased costs of care, and enhanced interdisciplinary collaboration. Future expansion of universal palliative care screening to other inpatient units should be considered to increase equitable access to palliative care services for all patients.

References

- Aslakson, R. A., Curtis, J., & Nelson, J. E. (2014). The changing role of palliative care in the ICU. *Critical Care Medicine*, 42(11), 2418–2428.
<https://doi.org/10.1097/ccm.0000000000000573>
- Aslakson, R., Cheng, J., Vollenweider, D., Galusca, D., Smith, T. J., & Pronovost, P. J. (2014). Evidence-based palliative care in the intensive care unit: A systematic review of interventions. *Journal of Palliative Medicine*, 17(2), 219–235.
<https://doi.org/10.1089/jpm.2013.0409>
- Bhadelia, A., De Lima, L., Arreola-Ornelas, H., Kwete, X., Rodriguez, N. M., & Knaul, F. (2019). Solving the global crisis in access to pain relief: Lessons from country actions. *American Journal of Public Health*, 109(1), 58–60. <https://doi.org/10.2105/ajph.2018.304769>
- Burnes, B. (2019). The origins of Lewin's three-step model of change. *The Journal of Applied Behavioral Science*, 56(1), 32–59. <https://doi.org/10.1177/0021886319892685>
- Camal-Sanchez, C. A., Simpson, T., Curtis, J., Owens, D., Burr, R. L., & Shannon, S. E. (2017). A quality improvement project to identify patients with advanced heart failure for potential palliative care referral in telemetry and cardiac intensive care units. *Journal of Doctoral Nursing Practice*, 10(1), 17–23. <https://doi.org/10.1891/2380-9418.10.1.17>
- Centers to Advance Palliative Care. (2020). *Inpatient palliative care program*.
<https://www.capc.org/toolkits/starting-the-program/designing-an-inpatient-palliative-care-program/>
- Centers to Advance Palliative Care. (2019). *America's care of serious illness: A 2019 state-by-state report card on access to palliative care in our nation's hospitals*.
<https://reportcard.capc.org/>
- Cox, C. E., Ashana, D., Haines, K. L., Casarett, D., Olsen, M. K., Parish, A., O'Keefe, Y., Al-Hegelan, M., Harrison, R. W., Naglee, C., Katz, J. N., Frear, A., Pratt, E. H., Gu, J., Riley, I. L., Otis-Green, S., Johnson, K. S., & Docherty, S. L. (2022). Assessment of

PALLIATIVE CARE SCREENING

clinical palliative care trigger status vs actual needs among critically ill patients and their family members. *JAMA Network Open*, 5(1), e2144093.

<https://doi.org/10.1001/jamanetworkopen.2021.44093>

Creutzfeldt, C. J., Wunsch, H., Curtis, J., & Hua, M. (2015). Prevalence and outcomes of patients meeting palliative care consultation triggers in neurological intensive care units. *Neurocritical Care*, 23(1), 14–21. <https://doi.org/10.1007/s12028-015-0143-8>

Cruz-Oliver, D. (2017). Palliative care: An update. *Missouri Medicine*, 114(2), 110–115. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6140030/>

Dang, D., Dearholt, S. L., Bissett, K., Ascenzi, J., & Whalen, M. (2022). *Johns Hopkins evidence-based practice for nurses and healthcare professionals: Model and guidelines* (4th ed.). Sigma Theta Tau International. https://www.hopkinsmedicine.org/evidence-based-practice/ijhn_2017_ebp.html

Finkelstein, M., Goldstein, N. E., Horton, J. R., Eshak, D., Lee, E. J., & Kohli-Seth, R. (2016). Developing triggers for the surgical intensive care unit for palliative care integration. *Journal of Critical Care*, 35, 7–11. <https://doi.org/10.1016/j.jcrc.2016.04.010>

Hamdan Alshehri, H., Olausson, S., Öhlén, J., & Wolf, A. (2020). Factors influencing the integration of a palliative approach in intensive care units: A systematic mixed-methods review. *BMC Palliative Care*, 19(1). <https://doi.org/10.1186/s12904-020-00616-y>

Hawley, P. (2017). Barriers to access to palliative care. *Palliative Care: Research and Treatment*, 10(1), 1–6. <https://doi.org/10.1177/1178224216688887>

Hsu-Kim, C., Friedman, T., Gracely, E., & Gasperino, J. (2015). Integrating palliative care into critical care. *Journal of Intensive Care Medicine*, 30(6), 358–364. <https://doi.org/10.1177/0885066614523923>

Hua, M. S., Li, G., Blinderman, C. D., & Wunsch, H. (2014). Estimates of the need for palliative care consultation across United States intensive care units using a trigger-based model.

PALLIATIVE CARE SCREENING

American Journal of Respiratory and Critical Care Medicine, 189(4), 428–436.

<https://doi.org/10.1164/rccm.201307-1229oc>

Hua, M. S., Ma, X., Li, G., & Wunsch, H. (2018). Derivation of data-driven triggers for palliative care consultation in critically ill patients. *Journal of Critical Care*, 46, 79–83.

<https://doi.org/10.1016/j.jcrc.2018.04.014>

Hughes, M. T., & Smith, T. J. (2014). The growth of palliative care in the United States. *Annual Review of Public Health*, 35(1), 459–475. <https://doi.org/10.1146/annurev-publhealth-032013-182406>

Hurst, E., Yessayan, L., Mendez, M., Hammad, A., & Jennings, J. (2017). Preliminary analysis of a modified screening tool to increase the frequency of palliative care consults.

American Journal of Hospice and Palliative Medicine, 35(3), 417–422.

<https://doi.org/10.1177/1049909117712229>

Intellectus Statistics. (2020). *Intellectus statistics: An SPSS alternative*.

<https://www.intellectusstatistics.com/intellectus-statistics-an-spss-alternative/>

Jenko, M., Adams, J. A., Johnson, C. M., Thompson, J. A., & Bailey, D. E. (2015). Facilitating palliative care referrals in the intensive care unit. *Dimensions of Critical Care Nursing*, 34(6), 329–339. <https://doi.org/10.1097/dcc.0000000000000143>

Kerckhoffs, M. C., Kant, M., van Delden, J. J., Hooft, L., Kesecioglu, J., & van Dijk, D. (2019). Selecting and evaluating decision-making strategies in the intensive care unit: A systematic review. *Journal of Critical Care*, 51, 39–45.

<https://doi.org/10.1016/j.jcrc.2019.01.029>

Khandelwal, N., Kross, E. K., Engelberg, R. A., Coe, N. B., Long, A. C., & Curtis, J. (2015). Estimating the effect of palliative care interventions and advance care planning on ICU utilization: A systematic review. *Critical Care Medicine*, 43(5), 1102–1111.

<https://doi.org/10.1097/ccm.0000000000000852>

PALLIATIVE CARE SCREENING

- Lapp, E., & Iverson, L. (2015). Examination of a palliative care screening tool in intensive care unit patients. *Journal of Hospice & Palliative Nursing*, 17(6), 566–574.
<https://doi.org/10.1097/njh.0000000000000202>
- Ma, J., Chi, S., Buettner, B., Pollard, K., Muir, M., Kolekar, C., Kollef, M., & Dans, M. (2019). Early palliative care consultation in the medical intensive care unit—a clustered randomized crossover trial (th371b). *Journal of Pain and Symptom Management*, 57(2), 396–397. <https://doi.org/10.1016/j.jpainsymman.2018.12.095>
- Martz, K., Alderden, J., Bassett, R., & Swick, D. (2020). Outcomes associated with a nurse-driven palliative care screening tool in the intensive care unit. *Critical Care Nurse*, 40(3), 23–29. <https://doi.org/10.4037/ccn2020702>
- McCarroll, C. (2018). Increasing access to palliative care services in the intensive care unit. *Dimensions of Critical Care Nursing*, 37(3), 180–192.
<https://doi.org/10.1097/dcc.0000000000000299>
- Mercadante, S., Gregoretti, C., & Cortegiani, A. (2018). Palliative care in intensive care units: Why, where, what, who, when, how. *BMC Anesthesiology*, 18(106), 1–6.
<https://doi.org/10.1186/s12871-018-0574-9>
- Mosenthal, A. C., Weissman, D. E., Curtis, J., Hays, R. M., Lustbader, D. R., Mulkerin, C., Puntillo, K. A., Ray, D. E., Bassett, R., Boss, R. D., Brasel, K. J., Campbell, M., & Nelson, J. E. (2012). Integrating palliative care in the surgical and trauma intensive care unit. *Critical Care Medicine*, 40(4), 1199–1206.
<https://doi.org/10.1097/ccm.0b013e31823bc8e7>
- Nadkarni, Y., Kukec, I., Gruber, P., Jhanji, S., & Droney, J. (2021). Integrated palliative care: Triggers for referral to palliative care in ICU patients. *Supportive Care in Cancer*, 30(3), 2173–2181. <https://doi.org/10.1007/s00520-021-06542-w>
- National Consensus Project for Quality Palliative Care. (2021). *Clinical practice guidelines for quality palliative care* (4th ed.). <https://www.nationalcoalitionhpc.org/ncp>

PALLIATIVE CARE SCREENING

- Nelson, J. E., Curtis, J., Mulkerin, C., Campbell, M., Lustbader, D. R., Mosenthal, A. C., Puntillo, K., Ray, D. E., Bassett, R., Boss, R. D., Brasel, K. J., Frontera, J. A., Hays, R. M., & Weissman, D. E. (2013). Choosing and using screening criteria for palliative care consultation in the ICU. *Critical Care Medicine*, 41(10), 2318–2327.
<https://doi.org/10.1097/ccm.0b013e31828cf12c>
- Poudel, A., Kc, B., Shrestha, S., & Nissen, L. (2019). Access to palliative care: Discrepancy among low-income and high-income countries. *Journal of Global Health*, 9(2), 1–5.
<https://doi.org/10.7189/jogh.09.020309>
- Rodin, G., Zimmermann, C., Rodin, D., al-Awamer, A., Sullivan, R., & Chamberlain, C. (2020). COVID-19, palliative care and public health. *European Journal of Cancer*, 136, 95–98.
<https://doi.org/10.1016/j.ejca.2020.05.023>
- Rosa, W. E., Ferrell, B. R., & Mason, D. J. (2021). Integration of palliative care into all serious illness care as a human right. *JAMA Health Forum*, 2(4), e211099.
<https://doi.org/10.1001/jamahealthforum.2021.1099>
- Schockett, E., Ishola, M., Wahrenbrock, T., Croskey, A., Cain, S., Benjenk, I., Davison, D., & Yamane, D. (2021). The impact of integrating palliative medicine into COVID-19 critical care. *Journal of Pain and Symptom Management*, 62(1), 153–158.e1.
<https://doi.org/10.1016/j.jpainsymman.2020.12.014>
- Secunda, K. E., Krolikowski, K. A., Savage, M. F., & Kruser, J. M. (2021). Evaluation of automated specialty palliative care in the intensive care unit: A retrospective cohort study. *PLOS ONE*, 16(8), e0255989. <https://doi.org/10.1371/journal.pone.0255989>
- Sihra, L., Harris, M., & O'Reardon, C. (2011). Using the improving palliative care in the intensive care unit (IPAL-ICU) project to promote palliative care consultation. *Journal of Pain and Symptom Management*, 42(5), 672–675.
<https://doi.org/10.1016/j.jpainsymman.2011.08.002>

PALLIATIVE CARE SCREENING

Visser, C., Hadley, G., & Wee, B. (2015). Reality of evidence-based practice in palliative care.

Cancer Biology & Medicine, 12(3), 193–200. <https://doi.org/10.7497%2Fj.issn.2095-3941.2015.0041>

Wachterman, M. W., & Sommers, B. D. (2021). Dying poor in the US—disparities in end-of-life

care. *JAMA*, 325(5), 423–424. <https://doi.org/10.1001/jama.2020.26162>

Weissman, D. E., & Meier, D. E. (2011). Identifying patients in need of a palliative care

assessment in the hospital setting: A consensus report from the Center to Advance Palliative Care. *Journal of Palliative Medicine*, 14(1), 17–23.

<https://doi.org/10.1089/jpm.2010.0347>

World Health Organization. (2021). *Quality health services and palliative care: practical approaches and resources to support policy, strategy and practice*.

<https://www.who.int/publications/i/item/9789240035164>

Zalenski, R., Courage, C., Edelen, A., Waselewsky, D., Krayem, H., Latozas, J., & Kaufman, D.

(2014). Evaluation of screening criteria for palliative care consultation in the MICU: A multihospital analysis. *BMJ Supportive & Palliative Care*, 4(3), 254–262.

<https://doi.org/10.1136/bmjspcare-2013-000570>

Zalenski, R. J., Jones, S. S., Courage, C., Waselewsky, D. R., Kostaroff, A. S., Kaufman, D.,

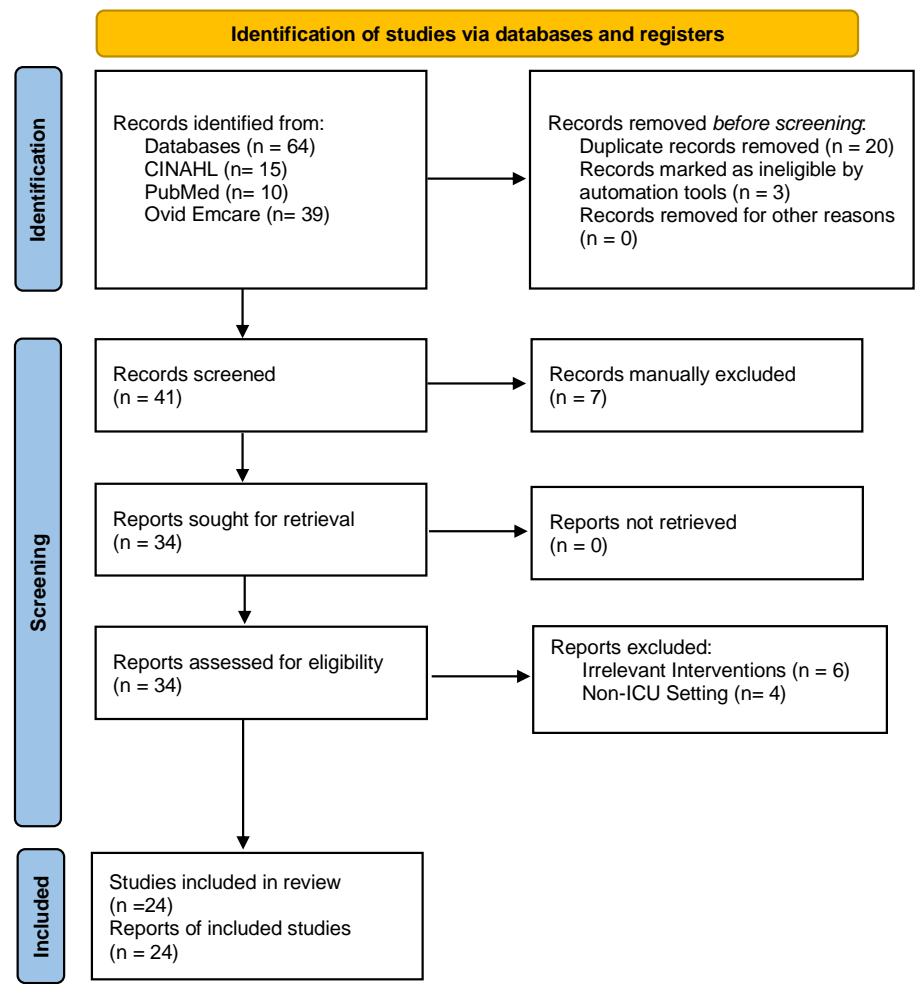
Beemath, A., Brofman, J., Castillo, J. W., Krayem, H., Marinelli, A., Milner, B., Palleschi, M., Tareen, M., Testani, S., Soubani, A., Walch, J., Wheeler, J., Wilborn, S.,...Welch, R.

D. (2017). Impact of palliative care screening and consultation in the ICU: A multihospital quality improvement project. *Journal of Pain and Symptom Management*, 53(1), 5–

12.e3. <https://doi.org/10.1016/j.jpainsymman.2016.08.003>

Table 1

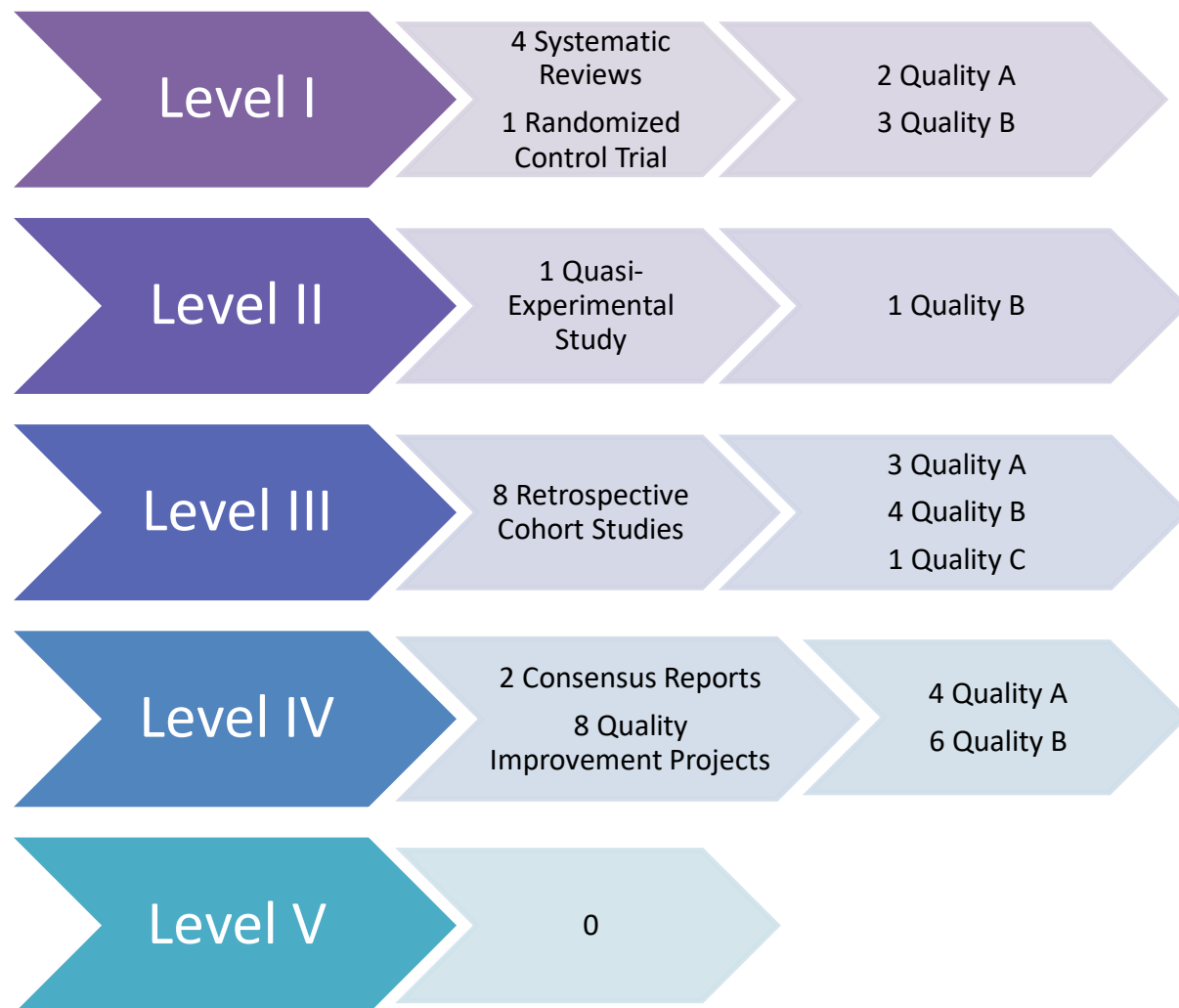
PRISMA Diagram



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Table 2

Evidence Search Results with Level and Grading of Evidence



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Figure 1

Budget

EXPENSES		REVENUE	
Direct	\$0	Billing	\$0
Salary and benefits (No additional costs. Project intervention performed within scope of normal work duties for ICU team and palliative care team)	\$0	Grants	\$0
Supplies (Personal out-of-pocket expenses for printer paper, ink, and misc. office supplies)	\$100	Institutional budget support	\$0
Services (IPAL-ICU project tools free with CAPC membership. EMR software already in use)	\$0		
Statistician (will consist of "in-kind" voluntary donation of time)	\$0		
Indirect			
Overhead	\$0		
		Total Revenue	\$0
Total Expenses	\$100	Potential Cost Savings for Hospital over 8-Week Period	\$246,152
Net Balance			-\$100 (not including potential cost savings)

Appendix A

Summary of Primary Research Evidence

Citation	Design, Level Quality Grade	Sample Sample size	Intervention Comparison	Theoretical Foundation	Outcome Definition	Usefulness Results Key Findings
(Martz et al., 2020)	Retrospective cohort study JHEBP Level III Quality C	St. Luke's Health System ICU, Utah n=112	Use of PC screening tool embedded in EMR. ICU patients with positive PC screening who received PCC, compared to ICU patients without PCC.	IPAL-ICU initiative and CAPC guidelines	Length of ICU stay, length of hospital stay, discharge disposition	Less than half of ICU patients with positive screening had PCC. Screening tool successful with identifying patients with unmet PC needs. Barriers with placement of PCC. *Lack of statistical data within article for reader reference
(Ma et al., 2019)	Randomized control trial JHEBP Level I Quality B	2 MICUs at Barnes Jewish Hospital n=199	Intervention: Trigger-based PCC for ICU patients with positive screening, compared to ICU patients without screening and trigger-based PCC	American College of Critical Care Medicine characteristic for end-of-life care in the ICU	Code status change, length of ICU stay, length of hospital stay, discharge disposition	PC screening and consultation led to increased DNR status, decreased ICU LOS. DNR status: 50.5% intervention group, 23.4% control group p<0.0001

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						<p>Hospice: 18.6 intervention group, 4.9% control group $p<0.01$</p> <p>Ventilation days: 4 days intervention group, 6 days control group $p<0.01$</p>
(Zalenski et al., 2014)	<p>QI project</p> <p>JHEBP Level IV</p> <p>Quality A</p>	<p>4 MICUs at Vanguard Health Systems, TN</p> <p>n=1017</p>	<p>Use of CAPC PC screening tool to screen ICU patients upon admission, compared to ICU patients without PC screening</p>	<p>IPAL-ICU Initiative and CAPC guidelines</p>	<p>Percent of ICU admissions screened, with positive screenings, and PCC</p>	<p>ICU patients with PC screening have greater likelihood of PCC 33.6%, $p<0.001$.</p> <p>40.7% ICU patients not screened.</p> <p>Only 3.4% ICU patients without PC screening had PCC.</p> <p>Barriers with PC screening compliance</p>
(Hua et al., 2014)	<p>Retrospective cohort study</p> <p>JHEBP Level III</p> <p>Quality B</p>	<p>n= 385,770 ICU patient admissions</p> <p>179 ICUs across US</p>	<p>Estimate prevalence of ICU admissions who met criteria for PCC.</p> <p>Assess which PC screening</p>	<p>Project IMPACT initiative</p>	<p>Mortality rate for patients with PCC and without PCC</p> <p>Number of PC triggers met</p>	<p>19.7% of ICU patients meet PCC criteria</p> <p>13.8% met 1 or more triggers</p> <p>85% met 5 or more triggers</p>

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			triggers identify ICU patients with unmet PC needs. Compare mortality rates between patients with PCC and without PCC		Triggers with highest prevalence	Most prevalent triggers= LOS >10 days (37.1%), stage IV cancer (27.8%), and cardiac arrest (27.3%) PC screening in ICU effective with identifying patients with unmet PC needs Most accurate identifying patients with 5 or more triggers
(Jenko et al., 2015)	Non-RCT with preintervention-postintervention study design JHEBP Level III Quality B	Duke University Hospital MICU MICU nurses n=27 MICU patients n=610	Use of Palliative Performance Scale (version 2) screening tool for trigger-based PCC compared to PCC rate without screening tool	Triple Aim Initiative and Institute of Medicine's "Dying in America"	PCC rate for ICU patients Percentage of nurses compliant with PCC protocol	PCC had 110% increase with PC screening tool Nurse compliance with PC screening tool varied between 24.2-85.6% PC screening tool effective with increasing PCC in ICU and identifying ICU patients with unmet PC needs
(Lapp & Iverson, 2015)	Retrospective, descriptive,	n= 200 ICU patients	Use of CAPC screening tool to trigger PCC	CAPC IPAL-ICU initiative	Number of PC screening criteria met	ICU patients with >CAPC criteria had

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	<p>exploratory study</p> <p>QI project</p> <p>JHEBP Level IV</p> <p>Quality B</p>	20-bed MICU/SICU at 341-bed hospital in midwestern US	versus no screening		<p>Percentage of patients with PCC</p> <p>Most common triggers</p>	<p>higher likelihood of being referred to PC (p<.0001.</p> <p>Patients with 8 or more CAPC criteria had greater than 50% chance of referral</p> <p>Number of screening criteria met correlated with mortality risk in the ICU (p<000.1)</p> <p>Mortality risk increased 1.5% for each additional CAPC criteria met</p>
(Nadkarni et al., 2021)	<p>Retrospective, descriptive, exploratory study/ QI project</p> <p>JHEBP Level IV</p> <p>Quality B</p>	n= 149 oncology ICU patients	EMR review comparing deceased oncology patient charts against 3 trigger-based PC screening tools	The World Health Organization, the European Society for Medical Oncology, and the American Society of Clinical Oncology recommendations	Most common triggers met by each PC screening tool, demographics of patients with positive screenings	<p>89% of patients had unplanned ICU admissions.</p> <p>Average age 65 years old</p> <p>56% referred to PC during ICU admission, 38% with no PC referral</p> <p>97-99% met PC referral criteria at time</p>

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						of ICU admission
(Creutzfeldt et al., 2015)	Retrospective cohort study JHEBP Level III Quality B	n= 1268 neuro-ICU patients n= 13,694 non-neuro ICU patients US ICUs from 2001-2008	Evaluation of neuro-ICU patients who meet at least one PC screening criteria	Project IMPACT initiative	Most common PC triggers met	PC screening effective w/ identifying neuro-ICU patients with unmet PC needs Most common neuro-ICU PC trigger was intracranial hemorrhage with ventilator support (n = 92; 7.3 %) Most common ICU PC trigger was patients with greater than 10 days ICU LOS (n = 805; 5.9 %)
(McCarroll, 2018)	Retrospective cohort study QI project JHEBP Level IV Quality B	n= 10 ICU patients 14-bed MICU Southwestern US hospital	Use of IPAL-ICU PC screening tool to increase PC referrals	The Institute of Medicine's <i>Dying in America</i> report, CAPC guidelines, and IPAL-ICU	Number of PC consultations	Only 10% ICU patients consulted prior to intervention. 30% ICU patients consulted after PC screening tool implemented. (200% increase) PC screening tool helpful with identifying and referring

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						ICU patients with unmet PC needs
(Hurst et al., 2017)	<p>Quasi-experimental design</p> <p>JHEBP Level II Quality A</p>	<p>n= 223 MICU patients</p> <p>2 MICUs</p>	Use of PC screening tool to increase PC consultations in ICU	IPAL-ICU initiative, CAPC guidelines	Number of ICU patients with PC consultations before and after implementation of PC screening tool	<p>PC consultations were higher after implementation of PC screening tool (p= .0011)</p> <p>PC screening greatly reduced time from ICU admission to PC consultation (p= 0.0001)</p> <p>No changes in ICU LOS or reduction in aggressive treatments (ex: ventilator use)</p>
(Hsu-Kim et al., 2015)	<p>Retrospective study QI Project</p> <p>JHEBP Level IV Quality B</p>	<p>n= 121 ICU patients</p> <p>MICU admissions from July-October 2010</p>	Retrospective evaluation of outcomes for ICU patients who met PC consultation criteria	CAPC guidelines	<p>ICU LOS</p> <p>Cost of Care</p> <p>Mortality Risk</p> <p>Days from ICU admission to PC consultation</p>	<p>7-day average from ICU admission to PC consultation</p> <p>No difference in cost of care for ICU patients with or without PC consultation</p> <p>ICU patients who had PC consultation</p>

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						<p>had greater LOS</p> <p>ICU patients with PC consultation had greater mortality risk (64.3%) vs without PC consultations (12.5%) (p= < .001)</p>
(Sihra et al., 2011)	<p>Non-RCT with preintervention-postintervention study design</p> <p>QI project</p> <p>JHEBP Level IV Quality B</p>	<p>n= 272 MICU and SICU patients</p>	<p>Use of PC screening tool vs no PC screening tool to increase PCC</p>	<p>IPAL-ICU initiative</p>	<p>Number of MICU patients screened divided by number of PCCs</p> <p>Number of SICU patients screened divided by number of PCCs</p>	<p>113 percent increase in PCC with PC screening tool for MICU patients</p> <p>51 percent increase in PCC with PC screening tool for SICU patients</p> <p>PC screening tool effective with identifying ICU patients with unmet PC needs and increasing PCC</p>
(Hua et al., 2018)	<p>Retrospective cohort study</p> <p>JHEBP Level III Quality A</p>	<p>n= 1,018,849 ICU patients</p> <p>New York ICU patients from 2008-2013</p>	<p>Retrospective analysis of PC screening tool and triggers, analysis of sensitivity and specificity for predicting 6-</p>	<p>Aslakson's "Evidence-Based Palliative Care in the Intensive Care Unit: A Systematic Review of Interventions" study</p>	<p>Percentage of ICU patients who expired within 6-months of ICU admission</p> <p>PC triggers that identified</p>	<p>PC screening tool triggers had high specificity and low sensitivity for calculating 6-month mortality in ICU patients.</p>

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			month mortality		patients at risk for mortality	
(Nelson et al., 2013)	Consensus report JHEBP Level IV Quality A	9 studies examining PCC triggers and practices in ICU	ICU patients with PC screening and PCC versus ICU patients with no PC screening or PCC	IPAL-ICU consensus report	Most common PC triggers met Comparison of ICU LOS with and without use of PC screening tool	Most common PC screening triggers met were symptom distress, family distress, poor prognosis, and ICU LOS PC screening triggers were effective to identify ICU patients at risk of dying, with unmet PC needs PC screening tool and PC consultations decreased ICU LOS and hospital LOS
(Camal-Sanchez et al., 2017)	QI project JHEBP Level IV Quality B	n= 21 ICU patients	Use of PC screening tool with 3 triggers for initiating PC consultation	CAPC guidelines and IPAL-ICU initiative	Number of PC triggers met Patient demographics	Renal disease, liver disease, HTN, noncompliance to medication regiment, and psychosocial needs most common triggers for HF patients PC screening effective with identifying ICU heart failure patients with unmet

PALLIATIVE CARE SCREENING

						palliative care needs.
(Mosenthal et al., 2012)	Consensus report JHEBP Level IV Quality A	All MEDLINE database articles focusing on SICU patients and palliative care from 1964-2011	Evaluation of SICU patient characteristics to develop strategies to integrate PC into SICU	IPAL-ICU consensus report	<p>Establish PC screening triggers for PC referral</p> <p>Number of PC consultations using consultative model (MD notification of positive PC screening, MD responsibility for placing referrals)</p>	<p>Most common triggers include multiorgan system failure, risk of mortality, SICU LOS >1 month, and greater than 3 SICU admissions</p> <p>Consultative model did not increase PC consultations. Trigger-based PC consultations may be more effective</p>
(Zalenski et al., 2017)	<p>QI project with prospective intervention and retrospective analysis study design</p> <p>JHEBP Level IV Quality A</p>	n= 649 ICU patients	<p>Use of trigger-based PC screening tool with 7 triggers</p> <p>Compared to patients with no screening and/or PCC</p>	IPAL-ICU initiative	<p>Number of patients with positive PC screenings</p> <p>Number of patients with PC consultations</p>	<p>35% ICU patients with positive screen</p> <p>ICU patients with positive screening more likely to have PCC (33.6% vs. 3.4%, $p < .001$)</p> <p>PCC screening effective with increasing PCC in the ICU. Reduces LOS and cost of care.</p>

PALLIATIVE CARE SCREENING

(Finkelstein et al., 2016)	Prospective cohort study JHEBP Level III Quality B	n= 492 SICU patients 14-bed SICU in NYC	Use of PC screening tool vs no PC screening tool to increase PCC in SICU	National Consensus Project for Quality Palliative Care Clinical Practice Guidelines for Quality Palliative Care	Number of ICU patients with at least 1 PC screening trigger Number of ICU patients with PC consultations	25% of ICU patients met at least 1 trigger 68% with positive screenings had PC consultations PC screening effective with identifying unmet PC needs for SICU patients and increasing PC consultations
(Secunda et al., 2021)	Retrospective cohort study JHEBP Level III Quality A	n= 1965 ICU patients with PCC from 2012-2017	Use of PC screening tool with 5 triggers to identify patients with unmet PC needs	IPAL-ICU initiative	Number of ICU patients who met at least 1 of the 5 PC screening triggers Number of ICU patients who had PC consultations	49% of ICU patients met at least 1 PC screening trigger Only 4% had PC consultation 58% had in-hospital death PC screening triggers help identify ICU patients with unmet PC needs. Healthcare provider judgement still needed- triggers miss

PALLIATIVE CARE SCREENING

						younger adult ICU patients with PC needs
(Cox et al., 2022)	Prospective cohort study JHEBP Level III Quality B	n= 257 ICU patients 6 ICUs Jan 2019- Sept 2020	Needs at the End-of-Life Screening Tool (NEST) for PC screening and PCC in the ICU	IPAL-ICU initiative, CAPC guidelines	NEST score Most common triggers met	44% of ICU patients had positive screenings Most common triggers include organ dysfunction, severe neuro deficits, worsening ADL functions, cardiac arrest, and metastatic cancer NEST PC screening tool not a substitute for clinician judgment Purely trigger-based PCC practices not effective

Legend: CAPC (Center to Advance Palliative Care), ICU (Intensive Care Unit), IPAL-ICU (Improving Palliative Care in the ICU), MICU (Medical Intensive Care Unit), n (sample size), PC (palliative care), PCC (palliative care consultation), QI (Quality Improvement), SORT (Strength of Recommendation Taxonomy)

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Appendix B Summary of Systematic Reviews (SR)

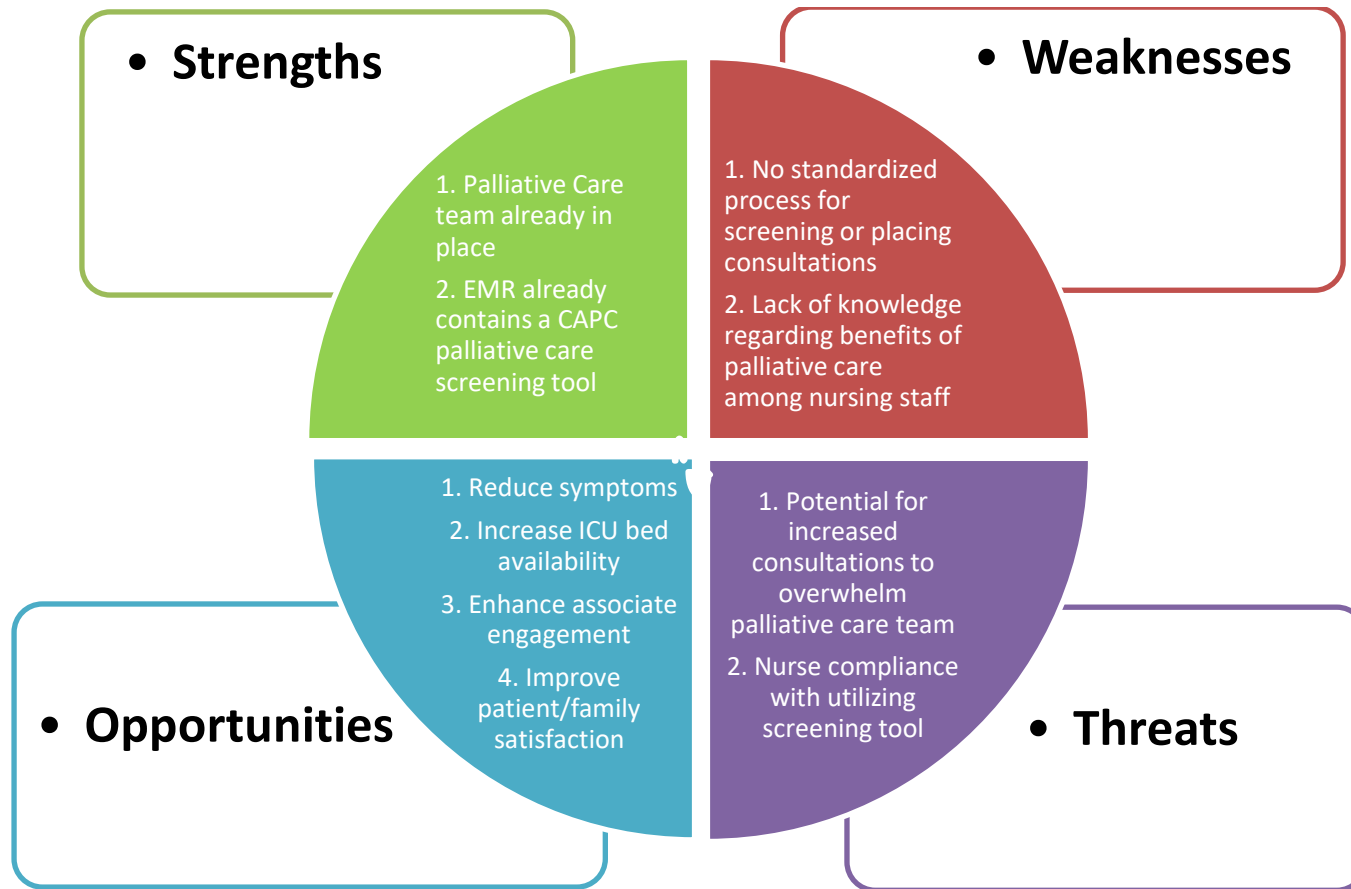
Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation/Implications
(Aslakson et al., 2014)	JHEBP Level I Quality B	Comparison of interventions made between integrative, consultative, or usual consultation of PC	n= 37 studies assessing 30 various PC interventions Adult ICU patients Studies from 1988-2011	Systematic Review of 5 RCTs, 31 pre/posttest/cohort studies, 1 case-control study Excluded non-ICU studies, pediatric patients, and commentary/opinion/review articles	Manual extraction and analysis	75% of studies reflected decrease in ICU LOS w/ consultative PC 67% of studies had decrease in hospital LOS w/ consultative PC 44% of studies showed reduction in ICU LOC w/ integrated PC 40% of studies had decrease in hospital LOS w/ integrated PC	Consultative PC interventions more effective than integrative PC interventions PC screening in ICU effective in single studies
(Khandelwal et al., 2015)	JHEBP Level I Quality B	Does PC reduce ICU admissions and LOS? How effective is PC in ICU?	Adult ICU patients Studies from 1995-2014	Systematic review of 9 RCTs and 13 non-RCTs Excluded non-ICU studies, pediatric patients, and commentary/opinion/review articles	Manual extraction and analysis Mean relative risk reduction	PC had 37% mean relative risk reduction for ICU admissions and 26% for ICU LOS	PC in ICU showed decreased risk for ICU admissions and LOS
(Kerckhoffs et al., 2019)	JHEBP Level I Quality A	Identify palliative care decision-making strategies in the ICU	n= 32 studies examining palliative decision-making strategies in the ICU	Inclusion: articles that contained decision-making strategies for continuing or withdrawing aggressive interventions, in the	PubMed and Embase	19% of studies featured the use of PC as a decision-making strategy	Increased communication with family resulted in decreased use of aggressive

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Citation	Quality Grade	Question	Search Strategy	Inclusion/Exclusion Criteria	Data Extraction and Analysis	Key Findings	Usefulness/Recommendation/Implications
				ICU setting, from 1997-2018, and in the US Exclusion: non-ICU settings, articles that do not feature decision-making strategies, prior to 1997 or after 2018, and international studies		4 studies showed decreased ICU LOS with PC consultations Poor prognosis was a common outcome measure amongst all studies	interventions and LOS PC may help facilitate communication
(Hamdan et al., 2020)	JHEBP Level I Quality A	Identify barriers and catalysts for palliative care in the ICU	n= 24 studies that focused on factors influencing palliative care consultative practices in the ICU	Included studies from 2007-2018, English language, peer-reviewed, with focus on adult population, and palliative care integration in the ICU. Excluded studies for pediatric and neonatal populations, non-empirical studies, effects of PC on metrics, and PC policies.	CINAHL, PubMed, AMED, EMBASE, Scopus PsycInfo, Web of Science, and Sociological Abstracts databases	Top four factors affecting PC integration in the ICU included: organizational structure, policies, and multi-disciplinary involvement 2. Clinical environment/work culture 3. Interpersonal factors and barriers 4. Decision-making	Early PCC needed in the ICU Multiple, complex factors affect PC integration in the ICU Communication with family an important factor

Legend: CAPC (Center to Advance Palliative Care), ICU (Intensive Care Unit), IPAL-ICU (Improving Palliative Care in the ICU), MICU (Medical Intensive Care Unit), n (sample size), PC (palliative care), PCC (palliative care consultation), QI (Quality Improvement), SORT (Strength of Recommendation Taxonomy)

Appendix C
SWOT Analysis of the Project Setting



PALLIATIVE CARE SCREENING

Appendix D

Project Schedule

	NUR7801								NUR7802								NUR7803							
Activity	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15	Week 1	Week 3	Week 5	Week 7	Week 9	Week 11	Week 13	Week 15
Meet with preceptor	x		x				x		x		x		x		x		x		x		x		x	x
Gather baseline statistics to support the need for this project		x	x	x	x	x																		
Prepare project proposal and submit to IRB and organizational leadership	x	x	x	x	x	x	x	x																
Obtain IRB and leadership approval for the project								x	x	x														
Meet with key stakeholders. Discuss support for the project, potential barriers, challenges experienced by ICU nurses. Answer questions.			X			x		x	x	x	x	x	x	x	x	x	x	x					x	
Choose a group of key stakeholders from involved departments to form project team							x	x	x															
Discuss potential barriers and/or challenges to implementing intervention with key stakeholders. Collaborate with key stakeholders to create potential solutions to barriers. Address all major barriers prior to implementation. Continue to re-assess at frequent intervals							x	x	x	x		x		x		x		x						

PALLIATIVE CARE SCREENING


[illegible]

PALLIATIVE CARE SCREENING

Appendix E

EPIC EMR CAPC Palliative Care Screening Flowsheet

*No permission for use needed. CAPC palliative care screening tool is already contained within the hospital's Epic EMR software.

Palliative Care Assessment
 Does patient have a potentially life-limiting or life-threatening ...
Patient Strengths/Weaknesses
Strengths (Must Choose Two)
Patient Weaknesses
Admission Primary Criteria
Do you expect patient to expire within 12 months or before adult...
Frequent Admissions
Difficult-to-Control Physical or Psychological Symptoms
Complex Care Requirements
Decline in Function, Feeding Intolerance, or Unintended Decline ...
Admission Secondary Criteria
Admission from Long-Term Care Facility or Medical Foster Home
Elderly Patient, Cognitively Impaired, with Acute Hip Fracture
Metastatic or Locally Advanced Incurable Cancer
Chronic Home Oxygen Use
Out-of-Hospital Cardiac Arrest
Current or Past Hospice Program Enrollee
Limited Social Support
No History of Completing an Advance Care Planning Discussion/...

Appendix F

ICU Nurse and Patient Education Handout

Palliative Care What You Should Know

To learn more about
palliative care, go to
getpalliativecare.org

Palliative Care (pronounced pal-lee-uh-tiv) is specialized medical care for people with serious illness. This type of care is focused on providing relief from the symptoms and stress of a serious illness. The goal is to improve quality of life for both the patient and the family.

Palliative care is provided by a specially-trained team of doctors, nurses and other specialists who work together with a patient's other doctors to provide an extra layer of support. It is appropriate at any age and at any stage in a serious illness, and it can be provided along with curative treatment.

1 WHERE DO I RECEIVE PALLIATIVE CARE?

Palliative care can be provided in a variety of settings including the hospital, outpatient clinic and at home.

2 DOES MY INSURANCE PAY FOR PALLIATIVE CARE?

Most insurance plans, including Medicare and Medicaid, cover palliative care.

3 HOW DO I KNOW IF PALLIATIVE CARE IS RIGHT FOR ME?

Palliative care may be right for you if you suffer from pain, stress or other symptoms due to a serious illness. Serious illnesses may include cancer, heart disease, lung disease, kidney disease, Alzheimer's, HIV/AIDS, amyotrophic lateral sclerosis (ALS), multiple sclerosis, Parkinson's and more. Palliative care can be provided at any stage of illness and along with treatment meant to cure you.

4 WHAT CAN I EXPECT FROM PALLIATIVE CARE?

You can expect relief from symptoms such as pain, shortness of breath, fatigue, constipation, nausea, loss of appetite and difficulty sleeping. Palliative care helps you carry on with your daily life. It improves your ability to go through medical treatments. It helps you better understand your condition and your choices for medical care. In short, you can expect the best possible quality of life.

5 WHO PROVIDES PALLIATIVE CARE?

Palliative care is provided by a team including palliative care doctors, nurses and other specialists.

6 HOW DOES PALLIATIVE CARE WORK WITH MY OWN DOCTOR?

The palliative care team works in partnership with other doctors to provide an extra layer of support for you and your family. The team provides expert symptom management, extra time for communication about your goals and treatment options and help navigating the health system.

7 HOW DO I GET PALLIATIVE CARE?

You have to ask for it! Just tell your doctors and nurses that you would like to see the palliative care team. You can start with the Provider Directory on GetPalliativeCare.org. That's where you can find palliative care in your area, quickly and easily.

PALLIATIVE CARE SCREENING

Appendix G

Outcome Measures

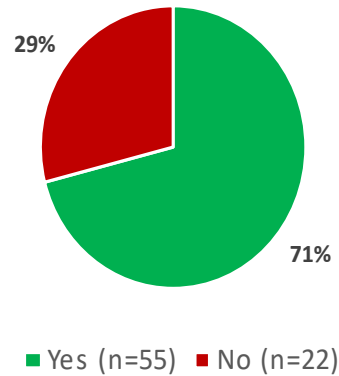
MEASURES	CATEGORIES						TIME for DATA COLLECTION						Criteria	Define the	BASELINE
Name & Metric (definition)												Wilcox Signed- Rank Test	State the p value or other criteria	Clinically meaningful criteria	Values
	OUTCOME	PROCESS	BALANCING	FINANCIAL	SUSTAINABILITY	CONTEXT	Baseline	First Week	30 days	60 days	90 days				
Number of ICU patients screened for palliative care consultation. For a given period of time, (sum the total number of ICU patients with palliative care screening form completed)		X			X	X	X	X	X	X	X	X	p<0.05	>60%	0
Number of patients with positive screening and palliative care consultation. For a given period of time, (sum of the total number of ICU patients with a positive screening and palliative care consultation ordered)		X			X	X	X	X	X	X	X	X	p<0.05	>60%	7 patients with PCC only
Average time from ICU admission to palliative consultation. For a given period of time, (sum the total number of days admitted to ICU before receiving consultation)/(total number of patients who received consultation)		X			X		X		X		X	X	p<0.05	Decrease by 1 day	4.14 days
Average ICU length of stay in days For a given period of time, (sum the number of days of the ICU stay for each patient)/(the total number of ICU patients).	X		X				X		X	X	X	X	p<0.05	Decrease by 2 days	9.46 days
ICU mortality rate. For a given period of time, (sum the total number of ICU patient deaths)/(total number of ICU patients)	X			X			X		X	X	X	X	p<0.05	<10%	9%

PALLIATIVE CARE SCREENING

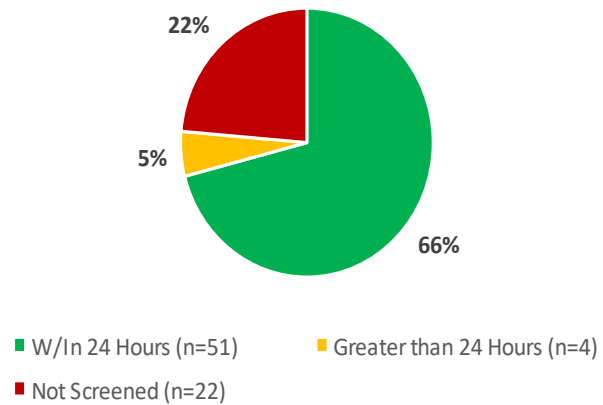
Appendix H

Pre-and-Post-Implementation Summary of ICU Patients with Palliative Care Consultations

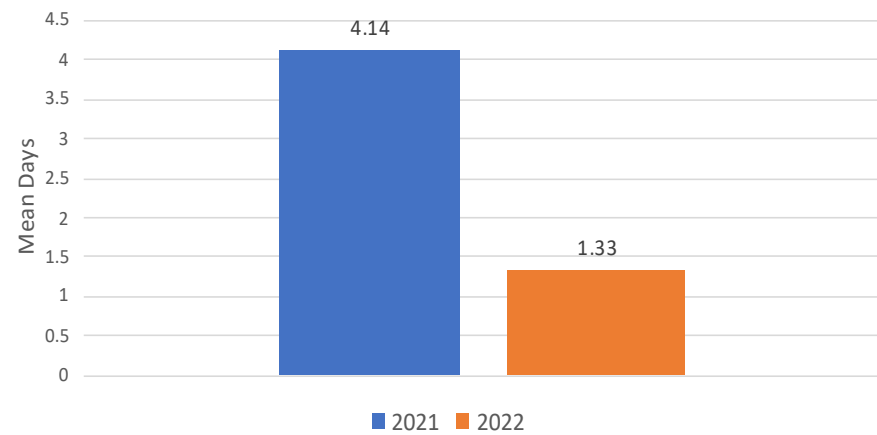
Total ICU Patients Screened



Percent of ICU Patients Screened w/in 24 Hours

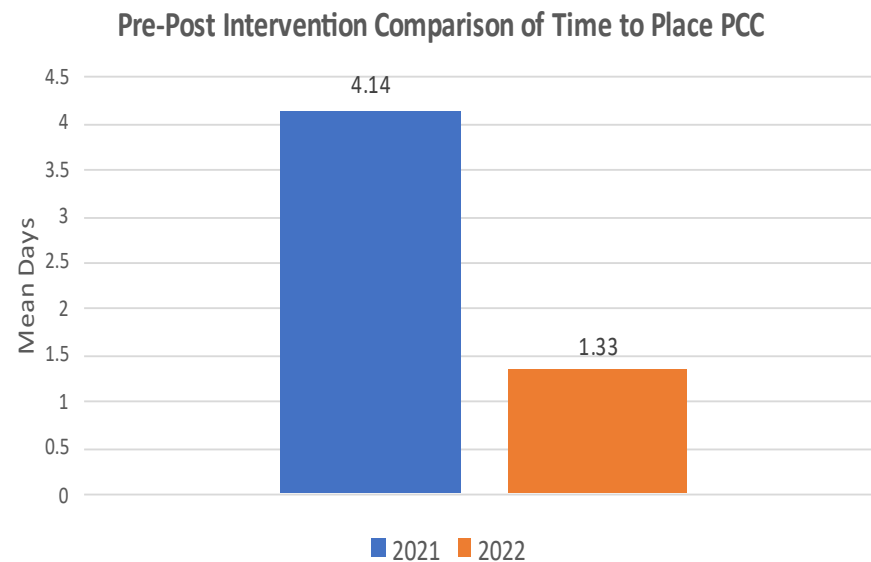
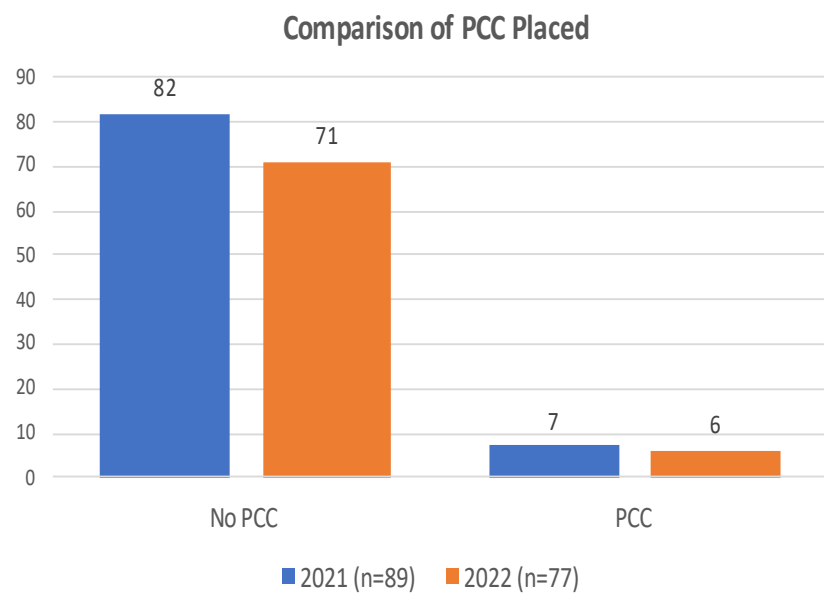


Pre-Post Intervention Comparison of Time to Place PCC



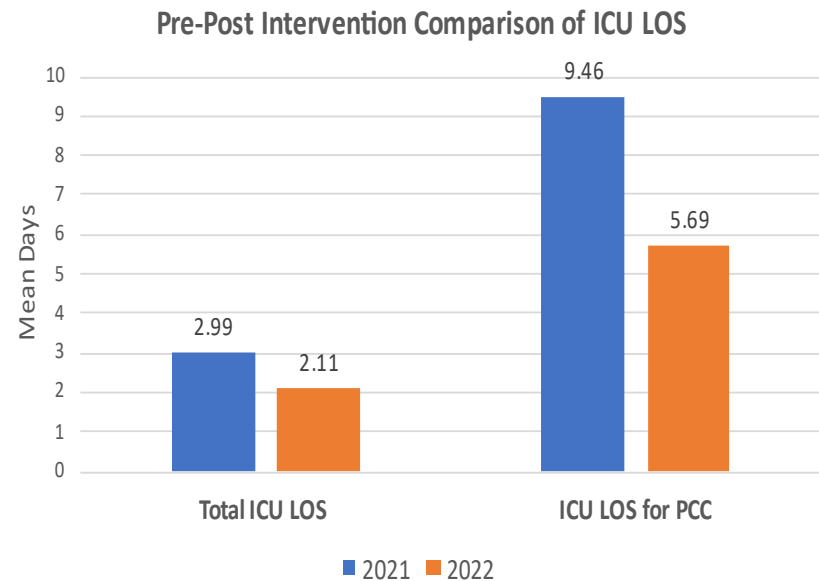
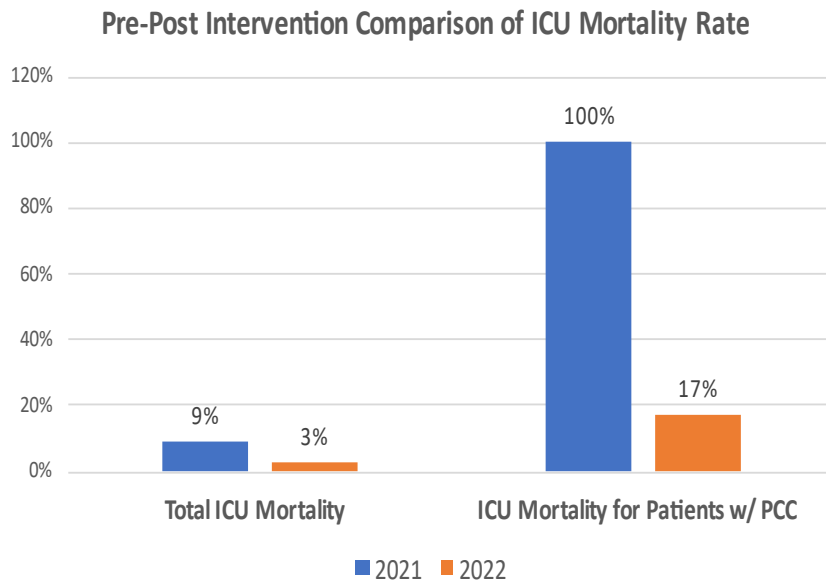
Appendix H (Continued)

Pre-and-Post-Implementation Summary of ICU Patients with Palliative Care Consultations



Appendix H (Continued)

Pre-and-Post-Implementation Summary of ICU Patients with Palliative Care Consultations



PALLIATIVE CARE SCREENING

Appendix I

Post-Intervention Aggregated Data for ICU Patients with Positive Palliative Care Screenings

CC	Screened	Screened w/in 24 hrs	Positive Screening	PCC Ordered	PCC w/in 24 hours	2022 ICU LOS	Code Status	Discharge Disposition
Renal Failure	Y	Y	Y	Y	Y	7.78	changed to DNR	Home
Metastatic Cancer	Y	Y	Y	Y	Y	3.56	changed to DNR	Home Hospice
COPD	Y	Y	Y	Y	Y	4.7	Full	Home
Metastatic Cancer	Y	Y	Y	Y	Y	3.12	changed to DNR	Expired in ICU
Metastatic Cancer	Y	Y	Y	Y	N	10.17	changed to DNR	Home Hospice
Metastatic Cancer	Y	Y	Y	Y	N	4.82	DNR at time of admission	Home Hospice
COPD	Y	N	Y	N	N	1.72	Full	AR/SNF
CVA	Y	N	Y	N	N	3.58	Full	Home
COVID-19	Y	Y	Y	N	N	2.16	DNR at time of admission	Home
CHF	Y	Y	Y	N	N	7.09	Full	AR/SNF