Palliative Needs Screening Initiative within a Cardiac Care Unit

by

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Abstract

Problem & Purpose: Early palliative care detection and consultation is correlated with increased cohesion between a patient's wishes and their medical treatment as well as decreased length of stay, moral distress, and burnout in healthcare staff. Despite these benefits, the palliative care discipline is chronically underutilized in critical care settings such as the Cardiac Care Unit (CCU) of a large urban medical center. The purpose of this quality improvement (QI) project is to increase early detection and consultation for adult cardiac patients with palliative care needs using a nurse driven palliative needs screening tool (PNST). **Methods:** This QI project took place over a 15-week period. Throughout the implementation phase, patients admitted to the CCU were screened by the bedside nurse for palliative care needs using a validated screening tool (PNST). Patients with a positive screen would be addressed during daily interdisciplinary rounds. Completed screening tools were reviewed weekly to determine completion, and accuracy. **Results:** 133 patients were admitted to the Cardiac Care Unit over the fifteen weeks of QI implementation. Compliance with the PNST system ranged from 35-100% per week with an overall average of 64%. Percentage of positive PNST screenings ranged from 16-71% per week with an overall average of 52%. When compared to pre-implementation, global palliative consult rates increased from 30% to 33%. **Conclusion:** Analysis of results shows that screening for palliative care needs, and life-limiting illness was able to increase palliative consultation despite seasonal variations in cardiopulmonary exacerbations causing increased patient acuity and its effect on staffing resources as well as contextual elements such as unclear patient identification and provider preferences.

Palliative Needs Screening Initiative within a Cardiac Care Unit

Palliative care is an interdisciplinary medical approach that uses patient values and their goals of care to guide medical treatment. The goal of palliative care is to optimize quality of life for patients with life-limiting illnesses. Early palliative consultation in this patient population is associated with early determination of patient care goals and subsequently greater adherence to these wishes as the patient progresses to terminal or end-of-life stages. In addition to these benefits, early palliative consultation is also associated with decreased length of stay (LOS), earlier hospice referrals, and decreased use of aggressive life sustaining interventions, particularly those with minimal positive impact on a patient's quality of life (Romano, 2019). In addition to patient beneficence, avoiding aggressive life sustaining interventions with minimal benefit on patients' quality of life helps to reduce moral distress and burnout among medical staff (Kyeremanteng et al., 2018).

Despite the numerous advantages early palliative consultation offers, the discipline is chronically underutilized in the critical care setting. On a local level, the Cardiac Care Unit (CCU) excelled in their ability to coordinate advanced modalities to prolong a patient life but underperformed in their ability to promptly assess and address cohesion between a patient's wishes and their medical treatment plan. The causative factors for underutilization of palliative care were multifactorial, including a lack of formalized screening process, misconceptions of the role or timing for palliative care consultations, or the assumption that palliative care is synonymous with hospice or end-of-life care. Lack of screening for palliative care needs on admission were identified as a contributing factor to delaying or failure to consult palliative care (Zalenski et al., 2018).

Palliative care is an interdisciplinary medical approach that uses guided conversations for families and patients with life-limiting illnesses with a primary goal of establishing a set of patient values that inform their goals of care and subsequently their medical treatment. These meetings are led by a palliative care provider and include instrumental members of the care team such as the provider, nursing staff, family members and the patient themselves if appropriate. Secondary goals of palliative care involve supporting the patient and family through disease progression, coordinating transitions between stages of care, and offering palliative care expertise to the medical provider. Although palliative care as a discipline did evolve from assisting oncology patients nearing end-of-life, the discipline has evolved and is now able to assist patients in optimizing their quality of life throughout the progression of life-limiting illness. Modern palliative care has shifted from models that focus on prognosis to a simultaneous care model that uses symptoms and quality of life to modify therapy modalities valuing less aggressive interventions as the disease progresses (Romano, 2019). This simultaneous care model was indispensable as this DNP project was implemented in the CCU of a large urban medical center. CCU patients often experience progressive decline secondary to cardiovascular disease but can also experience acute exacerbations which can quickly worsen underlying conditions, making traditional prognosis difficult (Camal-Sanchez et al., 2018).

Internal evidence supporting a quality improvement initiative to increase the CCU's ability to identify patients with unmet palliative care needs was gathered over the course of this semester through interviews with site stakeholders. These interviews included meetings with the CCU nursing manager and assistant nurse manager, as well as representatives from the palliative care team. It seems as a cardiovascular unit, the CCU excels at coordinating advanced modalities to prolong a patient's life, often performing palliative consultation as a component of the pre-operative evaluation, however the CCU struggles at early recognition of palliative care needs

During these interviews it became clear that despite previous initiatives intended to increase early detection of palliative care needs, the CCU continued to underperform when compared to other units in addressing these needs. The CCU's use of a rotating system of providers was identified as a confounding variable that made standardizing provider education difficult. The purpose of this Doctor of Nursing Practice (DNP) project was to identify unmet palliative care needs in the CCU performing a PNST during admission to the unit, followed by addressing the positive screen with the multidisciplinary teams during daily rounds (Figure 1 & 2). The short-term goal of this project was for CCU providers to use the PNST to identify patients with unmet palliative care needs within 48 hours of admission to the CCU, with a goal of 100% compliance. The long-term goal of this project was to increase the quality of discussion surrounding consulting palliative care among the CCU care team.

Available Knowledge

For this QI project a literature review was performed, and five studies out of nineteen identified were selected because of their relevance to the proposed intervention and relative strength. Unfortunately, there were relatively few studies that focused exclusively on palliative screening among the cardiac patient population (Table 1 & 2). The studies by Zalenski and Flaherty et al., examined the use of PNST during admission followed by addressing positive screens during daily rounds, finding a commiserate increase in early palliative care consultation, code status changes, hospice referrals and reduction in hospital length of stay and average costs (2017; 2018). Camal-Sanchez et al., study examined palliative care needs among patients in advanced heart failure in a cardiac intermediate care unit (IMC) and intensive care unit (ICU).

While the researchers used the New York Heart Association (NYHA) staging III/IV to indicate advance heart failure, there was concern from the researchers that this staging system did not adequately capture patients who would benefit the most from a palliative care consult (2018).

Rationale & Specific Aims

The Promoting Action on Research Implementation in Health Services (PARiHS) framework was used to provide the theoretical underpinnings for this QI project, (Figure 3). This framework proposes that successful implementation of evidence into practice is a function of the nature and type of evidence, qualities of the local context or environment, and the way the process is facilitated. A novel characteristic of the PARiHS framework is that it recognizes the multi-dimensional interplay between evidence, context, and facilitation in successful project implementation (Kitson et al., 2008). The local context of the CCU also increased project implementation, as a cardiac specific unit that frequently coordinates advanced modalities requiring palliative consultation, CCU staff were often already knowledgeable of indications for palliative consultation. By beginning training by discussing the CCU staff members perception of palliative care, the PL was able to assess the participants baseline knowledge of palliative care, and tailor their training to their level of understanding. Although the evidence surrounding PNST efficacy is only moderate encompassing almost exclusively quality improvement projects, enhancing the context in which evidence is introduced and streamlining facilitation greatly increased the chance of successful project implementation.

Methods

Local Context

As a critical care unit in a large urban medical center with a close working relationship with the local school of nursing and medicine, the CCU had a unique context that greatly enhances successful translation of evidence into practice. As a unit that frequently hosts new quality improvement and research initiatives, the CCU acted as a collaborative learning environment continually innovating and refining care modalities. This was due in large part to the transformational leadership of the CCU medical director, as well as the nursing management. These members of leadership use their position to act as role models within the unit, inspiring others to continue innovating care for the CCU population (Garavan et al., 2020). Despite the collaborative learning environment, and transformational leadership, the CCU previously attempted interventions to increase detection of unmet palliative care needs without success. These previous failures could be due in large part to the fact that the CCU operated with a rotating roster of providers who only worked in the CCU for a few weeks before alternating to other critical care units. Fortunately, in May 2022, prior to this project's implementation the CCU transitioned to a dedicated staff of CCU providers who only work in the CCU, greatly enhancing the context for implementation of a PNST project.

The pre-implementation process for consulting palliative care used the outdated prognostic palliative care model, instead of the modern simultaneous care model (Figure 4). In the prognostic palliative care model, patients were considered appropriate for a consult if their life-limiting illness is approaching end-of-life, with a prognosis of less than six months. In the current model, the provider is the sole decider in the choice to consult palliative care, but can be influenced by patient/family request, patient presentation, or ethical/moral concerns from nursing staff. A significant downside to this model was the delay in palliative care consultation until the patient was moribund. At this stage, the recommendations from palliative care become more focused on symptom alleviation similar to hospice. This delay in consultation becomes a positive feedback loop for provider misconceptions that palliative care is synonymous with hospice or end-of-life. Because of the significant role that acute exacerbation plays in worsening underlying cardiovascular disease, this model is no longer appropriate for the CCU, and has been phased out for the modern simultaneous care model that balances curative and symptomatic therapies against a patient's goals of care (Figure 5) (Romano 2019).

Intervention

This QI project took place over a fifteen-week period from late August through November 2022, in a fifteen bed CCU of a large urban medical center. The primary intervention of this project was the implementation of a PNST validated through multiple studies but tailored to more accurately represent the CCU population. This PNST was performed, documented, and signed by CCU nursing staff within the first 48 hours of admission to the unit. The PNST included screening for the concurrent presence of a cardiac specific life-limiting illness, and two or more unmet palliative care needs. The tool notably excludes screening on admission for patients being evaluated for transplant or Left Ventricular Assistive Devices (LVAD). As these patients automatically received palliative consultations during their evaluation, the intent behind this exclusion was to not overwhelm the palliative care team with inappropriate consults. Positive PNST were addressed by the daily care team rounds, with the provider documenting either the decision to consult palliative care or defer to consult by selecting from several relevant options before signing the document as well.

The first three weeks of the project consisted of pre-implementation education for CCU staff and providers. The CCU providers completed in-service educational sessions outlining the purpose of the project, documenting the provider portion of the PNST, items in the PNST that correlate with services the palliative care team offers, and patient scenarios concerning when to consult palliative care. Bedside nursing staff education took place concurrently and consisted of educational in-services outlining the purpose of the project, performing, and documenting the PNST, and common palliative care needs in the CCU population, finishing with two case scenarios to evaluate the nurse's ability to perform the PNST. Following pre-implementation, was a two-week lead-in phase beginning the execution of the PNST system, but only performing informal analysis of completion, and seeking informal feedback on the screening tool from staff and providers. During this time, staff who had not attended an educational in-service received one on one education to ensure a baseline understanding of the PNST system.

Study of the Intervention

Assessing the impact of PNST system implementation in the CCU incorporated weekly data collection and collation of completed PNST forms, and chart reviews of patients admitted over the course of the project. Completed PNST forms were analyzed by the project lead using the PNST audit tool to ensure documentation accuracy and completion. Chart reviews of patients admitted over the course of implementation surveyed the accuracy of the providers response to a positive PNST including documentation of family meetings to discuss goals of care, the outcome as well as documentation of palliative consults placed.

Measurement

Measurement and evaluations of project outcomes centered around the three goal stages: project, process, and outcomes. The project goals included incorporation of the PNST into the CCU admission documentation, with positive screens incorporated into daily multidisciplinary rounds. This adoption into nursing and provider workflow was achieved using educational in-services during pre-implementation with compliance monitored using process measures throughout the course of the project. Nursing staff and providers who continually failed to perform and document the PNST received additional one on one education from project team members to ensure compliance and project cohesion. Process goals during implementation include a goal of 100% of patients admitted to the CCU receiving a documented PNST within 48 hours of admission. This process goal was measured using ratio descriptive statistics of the number of patients with completed PNST divided by the number of patients admitted to the CCU over the course of the project. 100% of CCU providers addressing positive PNST during daily rounds was the next process goal, with the measurement also involving a ratio of patients with positive PNST screens addressed and documented by the provider on rounds, divided by the number of patients with positive PNST. As measures that directly calculate the number of staff and providers performing and documenting each part of the screening tools, these ratios had exceptional content and surface validity as well as test-retest reliability. An additional functionality of recording the ratios of completed PNST for providers and nursing staff allowed the project team leaders to identify team members who habitually fail to perform and document the PNST to include in additional training.

Outcome goals measured throughout the project include primary outcomes and secondary outcomes. Primary outcomes for nursing staff included a goal of 100% of patients admitted to the CCU be screened for the concurrent presence of life-limiting illnesses and unmet palliative care needs within 48 hours of admission. Because the PNST used in this project is based off tools used in similar QI projects examined in the literature review, it demonstrated adequate validity in accurately assessing patients for life-limiting illnesses and unmet palliative care needs (Zalenski et al., 2017; Flaherty et al., 2018). This PNST demonstrated risk for decreased inter-rater reliability secondary to subjective bias, which will be reduced through pre-implementation education. The measurement of this outcome goal will utilize ratio descriptive statistics to directly measure the number of patients with PNST completed within 48 hours of unit admission divided by the total number of patients admitted to the CCU over the course of this project. The second primary outcome goal was 100% of patients with positive PNST be assessed by the CCU provider for the necessity of a palliative care consult during daily rounds. In addition to assessment of palliative care needs, the provider documented this decision on the back of the PNST document. Measurement of this outcome also utilized ratios of CCU patients with PNST completed by both nursing and provider divided by the total number of patients with positive PNST completed solely by nursing.

Secondary outcome goals include assessing CCU nursing staff and providers for their perception of the efficacy of the PNST in promoting conversations in the care team regarding palliative care consultation. The first outcome predicted 100% of CCU nursing staff will find the PNST promotes care team conversations regarding consulting palliative care and be assessed via a satisfaction survey administered before and after implementation. This questionnaire consisted of five statements about the efficacy of the PNST intervention, with nursing staff selecting from Likert style responses ranging from very favorable to very unfavorable. In a similar fashion, the second secondary outcome goal predicted 100% of CCU providers will find the PNST promotes care team conversations surrounding palliative care consultation. This outcome was assessed before and after implementation with a questionnaire consisting of five statements surrounding the efficacy of the PNST intervention among providers with Likert style responses. Likert style responses or discrete rating scales have been used in science disciplines their invention by Rensis Likert in the 1930's. While these scales only generate ordinal level data, their high validity in quickly assessing the participants feelings surrounding the intervention makes them suitable for a questionnaire. In addition to using clear statements in the questionnaire, the reliability of Likert measurements can also be enhanced with the inclusion of a "Don't know/prefer not to answer" option to the discrete rating scale as well as an additional comment section. These additional options minimized the risk of participants selecting an option at random and increase the accuracy of data collected (Chyung et al., 2018).

Analysis

Quantitative and qualitative methods were used to draw inferences from the completed PNST forms. Weekly the PL collected and collated the completed PNST forms into run charts demonstrating patients admitted to the CCU, the completion of the PNST, the outcome of the PNST and the consultation of palliative care. These rates were then compared the CCU's global consultation rates obtained before implementation from August-July 2022. The data was then analyzed with descriptive statistics to enhance analyses. Descriptive statistics were used to better understand the patients clinical picture including reason for positive or negative PNST, lack of palliative consultation or family meeting.

Ethical Considerations

Prior to data collection and analysis, this Quality Improvement (QI) project was reviewed for ethical concerns by the University of Maryland School of Medicine Institutional Review Board (IRB). The IRB Human Research Protections Office (HRPO) determined this QI project could be permitted to be conducted under a Non-Human Subject's Research designation. This quality improvement initiative assessed patients for life-limiting illnesses and unmet palliative care needs, it will not collect any patient data beyond patient demographics, room number and the name of the patient's nurse and provider. Completed PNST documents were stored in a locked file cabinet in the charge nurse station only available to project team members and CCU charge nurses. Throughout the project, privacy and confidentiality will be maintained in accordance with Collaborative Institutional Training Initiative (CITI) and Health Insurance Portability and Accountability Act (HIPAA).

Results

In addition to the process changes listed above, structural changes were also required to enhance implementation success. Beginning with a CCU charge nurse meeting, the PNST tool was introduced for early training, evaluation, and feedback. With feedback from senior CCU nursing staff and management, the PNST form was adapted to include CCU specific conditions that were tied to progressive life-limiting illnesses. With the assistance of the Safety Quality and Service nursing council, the PNST form was added to the required admission documentation. Unit secretaries were also briefed regarding the PNST system, instructed to place the paper form in the chart of every newly admitted patient, and collected after provider documentation. A barrier identified was lack of CCU nursing staff attendance at educational in-services for the new

PNST system. To increase early adoption the PL and CCU Senior Clinical Nurses (SCN) began performing informal education in-services at the nurses' workstations.

With the assistance of the PL and CCU SCN's, over 85% of the CCU clinical nursing staff received training on the PNST system within the first three weeks of the project. 133 patients were admitted to the Cardiac Care Unit over the fifteen weeks of QI implementation. Compliance with the PNST system ranged from 35-100% per week with an overall average of 64%. Percentage of positive PNST screenings ranged from 16-71% per week with an overall average of 52%. When compared to pre-implementation, global palliative consult rates increased from 30% to 33% (Figure 6). In addition to outcome data, the PL disseminated an anonymous Systems Usability Survey (SUS) open to CCU nurses and staff who participated in the PNST system to determine their perceptions regarding the systems role in enhancing care team conversations surrounding palliative care consultation.

Furthermore, there were several contextual elements that likely interacted with the intervention. As a Cardiac specific unit, the majority of the CCU patients were admitted for cardiovascular or pulmonary concerns. Accurate palliative prognosis in this patient type is notoriously difficult, in addition to the gradual progression of their life-limiting illnesses, these patients often suffer from acute exacerbations that can greatly worsen their disease burden, particularly during the first few days of admission. Compounding this issue, is the exclusion of patients being evaluated for heart transplant or LVAD placement. This exclusion was done so as not to overwhelm the palliative care team with duplicate consults for patients who would already receive a palliative consult as part of their surgical workup. An unforeseen consequence of this decision was that a large portion of patients admitted to the CCU were experiencing acute exacerbation of their life-limiting illness worsening their overall disease burden. To pursue every available avenue for curative treatment, providers would contact the Heart Transplant or Cardiac Surgery teams to evaluate the patient for LVAD or heart transplant. Several days later the surgical team would finish their evaluation of the patient, often determining them not to be a candidate for these advanced modalities because of their poor prognosis. Because the PNST system was intended to be performed during admission when the patient was first being evaluated for these advanced modalities, these patients were allowed to go undetected by the system.

Other contextual elements that affected the intervention include several systemic and process stressors. By first introducing the PNST system to charge nurses and senior CCU management, the PL was able to quickly adapt the PNST template to screen CCU patients more appropriately for life-limiting illnesses. This introduction also allowed CCU charge nurses to be more familiar with the PNST system during the first three weeks of implementation leading to high initial compliance. During the fourth and fifth week of implementation however, the CCU began to suffer from staff shortages necessitating the closure of beds and the inclusion of the charge nurse in the staffing matrix. This change during the fourth week led to a massive decrease in compliance, with six admissions failing to be screened with the PNST system. After detecting this drop in compliance, the PL began efforts to regain the projects momentum including reminders to complete PNST screens during huddles, monthly updates, and charge nurse meetings. Other contextual elements include the use of a paper form for the PNST that required collection after the positive screen was addressed by the provider. While easy to locate and document, the paper form would frequently become lost, particularly if the patient was admitted and screened overnight. In the event of a lost form, the PL or available SCN would assist the dayshift nurse in filling out the form before addressing positive screens with the provider.

Key findings of analysis of available data include reasons for positive PNST and provider documentation. As a cardiac specific unit, the majority of positive PNST identified exacerbation of cardiopulmonary disease as the overwhelming life-limiting illness (39%). The remaining 61% of positive PNST were a combination of shock state, end stage liver disease, renal disease, and nursing discretion (high risk of accelerated death) (Figure 7). The most common unmet palliative care needs identified predominantly uncontrolled symptoms and uncertainty surrounding goals of care, with lower rates of frequent admissions and the surprise question (RN would not be surprised if the patient died within 12 months) (Figure 8). Among the provider responses to defer palliative consultation for a positive PNST, planned family meeting to discuss goals of care was the most common reason to defer palliative care consultation at 46%, followed by “No unmet palliative care needs at this time” composing 28%. Curiously evaluation for advanced modalities such as LVAD, or heart transplant were not uncommonly cited as a reason to withhold palliative consultation (15%), despite palliative consultation being a standard component of the evaluation process (Figure 9). While family meetings were the most common reason to defer palliative consultation, determining whether these meetings occurred was a more difficult task than anticipated. Family meetings conducted by the CCU care team were documented less than half the time (46%) in the providers daily progress notes. However, if the family meeting was attended by the palliative care team, this percentage increased to 94%.

Conclusion

Summary

While the PNST system did suffer from several undetected threats to its adoption and continuity, the system also demonstrated strengths in unexpected areas. Beginning the QI initiative by introducing the PNST system at a CCU charge nurse meeting allowed the PL to train charge nurses first, and likely increased early compliance with the system. Informal feedback and feedback obtained from the System Usability Survey (SUS) disseminated to CCU staff and providers highlighted the ease with which the system could be administered and the usefulness of having the pertinent information readily available when the care team rounded. Other strengths of the PNST system identified the use of guidance qualifiers to help stratify patients between moderate and severe presentations. For example, the life limiting illness of end stage renal disease was qualified with the guidance of a patient on active hemodialysis or with a creatinine over 6mg/dL. This guidance attempted to create a more objective form of evaluation in a system that could otherwise be considered subjective.

While the SUS and informal feedback identified some benefits to the PNST system, it also highlighted the shortcomings in using paper forms in a hospital system that primarily utilizes Electronic Medical Records (EMR). Staff feedback highlighted the nurses inability to determine if a staff member had previously performed a PNST for a patient, leading to multiple occasions of duplicate PNST. Because the CCU utilizes an EMR with built in reminders for patient documentation, the PNST workflow was often overlooked in cases of high patient acuity or staffing stress.

Interpretation

Analysis of results shows that screening for palliative care needs and life-limiting illness was able to increase palliative consultation rates in the CCU. This increase occurred despite a combination of the previously mentioned contextual elements including confusion surrounding patients identified for advanced care modalities, systemic stressors such as an increase in acuity and the inclusion of charge nurses into the staffing matrix, and provider preference. This hypothesis is well documented in previous studies examining the integration of palliative care consultation in critical care areas, finding provider resistance a significant confounding variable (McCarroll, 2018). Other confounding variables include the seasonal variation in cardiopulmonary exacerbations. It is known that cardiopulmonary exacerbations can be triggered by concurrent illnesses such as influenza or COVID-19 and worsened by patient comorbidities such as diabetes and tobacco use. Considering the pre-implementation data was gathered just before the season transition, and implementation occurred during the fall into the winter, the seasonal variation of cardiopulmonary exacerbations and their subsequent effect on patient acuity likely reduced this project's ability to positively effect palliative consultation rates in the CCU. Accounting for this seasonal variation of cardiopulmonary exacerbations in future palliative interventions for the adult cardiovascular would greatly decrease confounding variables, and likely increase early compliance with the project. Project implementation during the summer could help establish new workflows prior to seasonal increases in patient acuity. Utilizing pre-implementation data from the same season, but one year prior could also help to minimize seasonal differences in patient acuity.

Dissemination of this project's findings will include local and systemic efforts. On a local level, the PL will present their findings at the monthly Cardiac Transformation meeting attended by CCU staff and leadership. Findings will also be disseminated via monthly CCU updates to staff and providers. On a systemic level, the findings of this project have been collated with similar QI projects and included in a hospital wide palliative care initiative to examine adoption of a nurse driven palliative needs screening tool into the Electronic Medical Record as part of the admission process. The PL will also present their project at the Maryland Action Coalition summit (MDAC) and the University of Maryland School of Nursing (UMSON) poster day.

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Tables

Table 1

Table Summarizing Literature Review of Nurse Driven Palliative Care Screening

Citation: Camal-Sanchez, C. A., Simpson, T., Randall 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.proxy-hs.researchport.umd.edu/10.1891/2380-9418.10.1.17		**Level and Quality:** Level V Quality C
Purpose or Hypothesis	To assess the association between advanced heart failure and palliative care needs in a telemetry unit and cardiac ICU (CICU).	
Type of Evidence Research Design	Prospective quality improvement study	
Sample Population, Size, Setting	**Sampling Technique:** Criterion sampling **Eligible Participants:** Patients with advanced heart failure defined as left ventricular ejection fraction <50% (LVEF), NY Heart Association (NYHA) class III/IV. **Setting:** The study was performed at a Portland Oregon medical center. **Excluded:** Patients with LVEF>50%, NYHA I/II **Accepted:** 21 patients met inclusion criteria **Control:** Quality improvement project with no control arm **Intervention:** All 21 patients were included in intervention **Power analysis/Achieved:** No power analysis was reported **Group Homogeneity:** There were no significant baseline demographic differences between telemetry and CICU units.	
Intervention Procedures	**Control Protocol:** Quality improvement project with no control arm **Intervention Protocol:** Patients in the telemetry and CICU units who met inclusion criteria received a tool screening for comorbidities and psychosocial issues associated with unmet palliative care needs. **Treatment Fidelity:** The screening tool was based on a template created by the Center to Advance Palliative Care and completed by a DNP student with academic training in palliative care and clinical expertise in cardiology.	

Primary Outcome and Measures	**Dependent Variable:** The three most common comorbidities were hypertension, kidney and liver disease, while the most common psychosocial problems were nonadherence, leaving against medical advice, homelessness, and underlying psychiatric diagnoses. Patients in the telemetry unit had notably higher level of psychosocial problems than those in the CICU. **DV Measure:** Data was collected by the DNP student during daily cardiology rounds, with the assistance of the bedside provider.
Results/Conclusions	**Statistical Results:** A chi-square test of independence was used to analyze the association between screening criteria and unit, while interquartile intervals were calculated for LVEF values between the two units. There was a significantly higher level of unmet palliative care needs and lower LVEF in the telemetry unit when compared to the CICU. **Conclusions:** Patients in the telemetry unit had a higher incidence of nonadherence, and substance abuse, possibly limiting the type of therapies offered and subsequently negatively impacting their cardiac function.

Citation: 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.proxy-hs.researchport.umd.edu/10.4037/ccn2020702		**Level and Quality:** Level V quality B
Purpose or Hypothesis	To retrospectively identify outcomes of patients with positive nurse-driven palliative care screening tools who received a palliative care consult compared to patients who did not.	
Type of Evidence Research Design	Retrospective quality improvement cohort study	
Sample Population, Size, Setting	**Sampling Technique:** Criterion sampling **Eligible Participants:** Adult patients admitted for longer than 24 hours to the medical-surgical ICU with positive nurse-driven palliative care screening tools. **Setting:** A medical-surgical ICU in Idaho between September 2017 and March 2018. **Excluded:** Patients admitted for less than 24 hours, or who did not have a positive nurse-driven palliative care screening tool. **Accepted:** A total of 112 patients met inclusion criteria **Control:** Pretest/posttest cohort study without control **Intervention:** 112 patients were included in final analysis **Power analysis/Achieved:** Power analysis was reportedly performed, but not disclosed beyond admitting that the sample size was too small to adequately power the study. **Group Homogeneity:** 105 of the 112 patients included in the study were considered white/Caucasian.	

Intervention Procedures	**Control Protocol:** Pretest/posttest cohort study without control **Intervention Protocol:** Nursing staff completed the palliative care screening tools daily, notifying the multidisciplinary team of patients who screened positive giving the provider the opportunity to place the palliative care consult. **Treatment Fidelity:** Screening tool was delivered through electronic health record, but only performed Monday-Friday.
Primary Outcome and Measures	**Dependent Variable:** Differences in demographics and outcomes between patients with positive screening tools who did receive a palliative care consult and those who did not were assessed. **DV Measure:** Descriptive statistics were used to summarize patient characteristics and outcomes.
Results/Conclusions	**Statistical Results:** T tests were used to analyze continuous variables, while chi-squared tests were used for categorical variables. **Conclusions:** There was no significant difference between groups in length of hospital or ICU stay. Group differences by diagnosis was not possible due to underpowering of the study. Only 42% of patients with positive screening tools received palliative care consults, with female and non-mechanically ventilated patients more likely to receive palliative care consults.

Citation: Zalenski, R. J., Jones, S. S., Courage, C., Waselewsky, D. R., Kostaroff, A. S., Kaufman, D., Beemath, A., Brofman, J., Castillo, J. W., Krayem, H., Marinelli, A., Milner, B., Palleschi, M. T., Tareen, M., Testani, S., Soubani, A., Walch, J., Wheeler, J., Wilborn, S., & Granovsky, H. (2017). Impact of Palliative Care Screening and Consultation in the ICU: A Multihospital Quality Improvement Project. *Journal of Pain & Symptom Management*, *53*(1), 5–12.e3. https://doi-org.proxy-hs.researchport.umd.edu/10.1016/j.jpainsymman.2016.08.003		**Level and Quality:** Level V Quality B
Purpose or Hypothesis	The purpose of this research study was to determine the outcomes of receiving palliative care consultation (PCC) in patients who had a positive screen for palliative care referral compared to those who did not receive a palliative care consultation despite a positive screen.	
Type of Evidence Research Design	Prospective multi-center quality improvement study	
Sample Population, Size, Setting	**Sampling Technique:** Convenience sampling **Eligible Participants:** Adult patients admitted to intensive care unit (ICU) in any of the participating hospitals during the study timeframe from October 15th 2012-April 21st 2013. **Setting:** ICU located in one of the seven participating hospitals located in the Midwest and South Texas. Two hospitals were large urban academic medical centers, while the other five were community hospitals. **Excluded:** Patients not full code on admission.	

	Accepted: 431 adult patients screened positive for palliative care triggers, 26 were excluded due to missing data, so 405 patients were included. **Control:** 244 patients did not receive a PCC **Intervention:** 161 patients received a PCC **Power analysis/Achieved:** No power analysis reported **Group Homogeneity:** Study population demonstrated good homogeneity and ethnic diversity.
Intervention Procedures	**Control Protocol:** Quality improvement project with no control **Intervention Protocol:** Nursing staff screened patients for palliative care risk factors within 24 hours of admission, reporting positive screens to the ICU provider or attending depending on the location. The provider would then decide whether to consult palliative care. **Treatment Fidelity:** Provider preference whether to consult palliative care and patient preference concerning palliative care remains a large confounding factor in these studies.
Primary Outcome and Measures	**Dependent Variable:** Primary outcomes evaluated included change in code status to DNR, discharge to hospice, 30-day readmission rates, hospital length of stay, and total direct hospital costs. **DV Measure:** Clinical outcome data was taken from the electronic medical records by project assistants. Costs were obtained from the central accounting system for the hospitals and included medications, procedures, services, and labor.
Results/Conclusions	**Statistical Results:** Using odds ratio, patients who screened positive for palliative care needs and received PCC were significantly more likely to receive code status change and be discharged to hospice than those who did not receive a PCC. Additionally, patients who received a PCC early in their hospital stay were significantly more likely to have decreased length of stay and associated hospital costs. **Conclusions:** The researchers proposed that early palliative care screening with PCC was significantly associated with higher code status changes to DNR, hospice referrals, and reduction in both length of stay and average hospital cost.

Citation: Flaherty, C., Fox, K., McDonah, D., & Murphy, J. (2018). Palliative Care Screening: Appraisal of a tool to identify patients' symptom management and advance care planning needs. *Clinical Journal of Oncology Nursing*, *22*(4), 92–96. https://doi-org.proxy-hs.researchport.umd.edu/10.1188/18.CJON.E92-E96		**Level and Quality:** Level III, quality B
Purpose or Hypothesis	This systematic review analyses the Palliative Assessment Screening Tool (PAST) to evaluate its ability to aid in the identification of hospitalized patients with palliative care needs and facilitates creation of advanced directives.	
Type of Evidence Research Design	Systematic review of quality improvement studies with retrospective chart review	
Sample Population, Size, Setting	**Sampling Technique:** Convenience sampling **Eligible Participants:** Adults admitted to the medical-surgical oncology/orthopedic unit **Setting:** Medical-surgical oncology/orthopedic unit of a large urban medical center **Excluded:** Presence of substance abuse disorder and lack of palliative care needs **Accepted:** 50 patients were retrospectively accepted **Control:** Retrospective study without control arm **Intervention:** Six patients were identified as duplicates due to readmission and removed from the group, reducing the study population to 44 participants. **Power analysis/Achieved:** No power analysis was reported **Group Homogeneity:** Study population had homogeneity of baseline demographics.	
Intervention Procedures	**Control Protocol:** Retrospective study without control arm **Intervention Protocol:** Prior to implementation nursing staff was educated via slideshow presentations concerning using and assisting the patient in documenting the PAST. Information concerning the PAST tool was also disseminated to the hospitalist team of provider during an inpatient care committee meeting. Following implementation, the PAST would be completed by the patient and bedside nurse, who would sign the document and request a palliative care consultation during the daily interprofessional team rounds. **Treatment Fidelity:** Provider preference whether to consult palliative care remains a large confounding variable in these studies.	
Primary Outcome and Measures	**Dependent Variable:** The number of palliative care consults, completion of advanced directives and symptom management from admission to discharge. **DV Measure:** Using chart review, the number of palliative care consults and advanced directives were manually counted from the electronic health record (EHR), while pain, nausea and shortness of breath were captured in the EHR during admission and discharge.	

Results/Conclusions	**Statistical Results:** Because this study was likely underpowered to produce statistically significant results. However, using NCSS software, the researchers were able to identify a 34% increase in palliative care consults in the three months following implementation. **Conclusions:** While the researchers were able to show an improvement in their primary outcome of palliative consultation, comparing their secondary outcomes was difficult without pre-implementation data. For instance, 59% of participants completed advanced directives during their stay, and on discharge patients reported decreases in nausea, pain, and shortness of breath, but comparison is impossible without knowing what the rates were prior to implementation.

Table 2

Evidence synthesis table

Category (Level Type)	Total Number of Sources/Level	Overall Quality Rating	Synthesis of Findings
Level I	0	N/A	N/A
Level II	0	N/A	N/A
Level III	1	**Quality B** While Flaherty et al., performed a systematic review of the PAST, they did not disclose the number of studies included, only summarizing their findings (2018).	The primary endpoint of increasing palliative care consultation was met, with a 34% increase in palliative consults in the three months following implementation compared to the three months before implementation. Conclusions for secondary endpoints were unable to be evaluated given that the researchers did not disclose the pre-implementation data.
Level IV	0	N/A	N/A
Level V	3	**Quality B** While none of the studies demonstrated power analysis or sufficient sample size, their results were consistent with conclusions fully explained, and included implications for further research.	Three of the studies included in this evidence review received level III ratings. The first study by Camal-Zanchez et al., evaluated the use of a cardiac specific palliative needs screening tool in a cardiac ICU and telemetry unit. The researchers found that palliative care needs were curiously higher in their telemetry unit than the cardiac ICU. One possible reason proposed by the researchers is the role nonadherence and substance abuse in this population, limiting the type of therapies offered, subsequently increasing their risk of early progression to advanced heart failure (2017). The next study by Martz et al., did not find a significant difference in primary endpoints including hospital and ICU length of stay. However, this study suffered from a number of confounding variables including an underpowered almost entirely Caucasian study population (2020). Zalenski et al., was able to find an association between palliative care screening and early palliative care consults led to significantly higher code status changes, hospice referrals, reduction in length of stay and average hospital cost (2017).

Figures

Figure 1

Palliative Needs Screening Tool: Nursing Documentation

Positive PNST:

>1 Life-Limiting Illness

> 2 Unmet Palliative Care Needs

Palliative Needs Screening Tool (PNST)

Nursing Documentation

Please check one:

Positive PNST ☐

Negative PNST ☐

Does the Patient Have a Life-Limiting Illness? (Please check all that apply)	**Yes**
Advanced Dementia or CNS Disease (e.g. history of stroke, ALS, Parkinson's) Assistance needed for most self-care (e.g. ambulation, toileting etc...)	☐
Advanced Cancer (metastatic cancer with active or recent chemotherapy)	☐
End Stage Renal Disease (on dialysis or creatinine>6)	☐
Advanced Lung Disease (interstitial lung disease, pulmonary hypertension, pulmonary fibrosis with active IV/Inhaled therapy)	☐
Advanced Heart Failure with Exacerbation, Candidate for LVAD or Transplant (chronic dyspnea or chest pain with minimal activity or rest)	☐
End Stage Liver Disease (recurrent ascites, GI bleeding, or hepatic encephalopathy)	☐
Shock State (e.g. cardiogenic, mixed or septic shock with hypotension and signs of end organ failure)	☐
Nursing Discretion- High Risk of Accelerated Death (found down, >20-minute resuscitation before ROSC)	☐
Does the Patient Have Two or More Unmet Palliative Care Needs (Please check all that apply)	
Frequent Visits (2 or more admissions within last 6 months)	☐
Uncontrolled Symptoms (admission prompted by uncontrolled symptoms e.g. pain, dyspnea, fatigue, depression etc...)	☐
Functional Decline (e.g. decline in mobility, frequent falls, signs of physical wasting, new skin breakdown etc...)	☐
Uncertainty Surrounding Goals of Care and/or Caregiver Distress (e.g. anxiety, uncertainty, spiritual or emotional distress surrounding their goals of care and/or caregiver unable to meet long-term needs)	☐
Surprise Question: You Would Not be Surprised if This Patient Died Within 12 Months	☐

Figure 2

Palliative Needs Screening Tool: Provider Documentation

Provider Documentation

Provider Documentation of Positive Screens During Interdisciplinary Rounds (Please select from the options below)	**Yes**
Family Meeting in Next 48 Hours- Note to be filed afterwards	☐
Palliative Care Consulted	☐
No Family Meeting or Palliative Consult Needed: Patient to be Discharged in Next 24 Hours	☐
No Family Meeting or Palliative Consult Needed: Patient/Family Declined	☐
No Family Meeting or Palliative Consult Needed: No Unmet Palliative Care Needs at this Time	☐
No Family Meeting or Palliative Consult Needed: Other	☐

Other Reason for not Consulting Palliative Care: ________________________________

____

Provider Signature Date/Time: ____

Figure 3

The PARiHS model by Kitson et al., (2008)

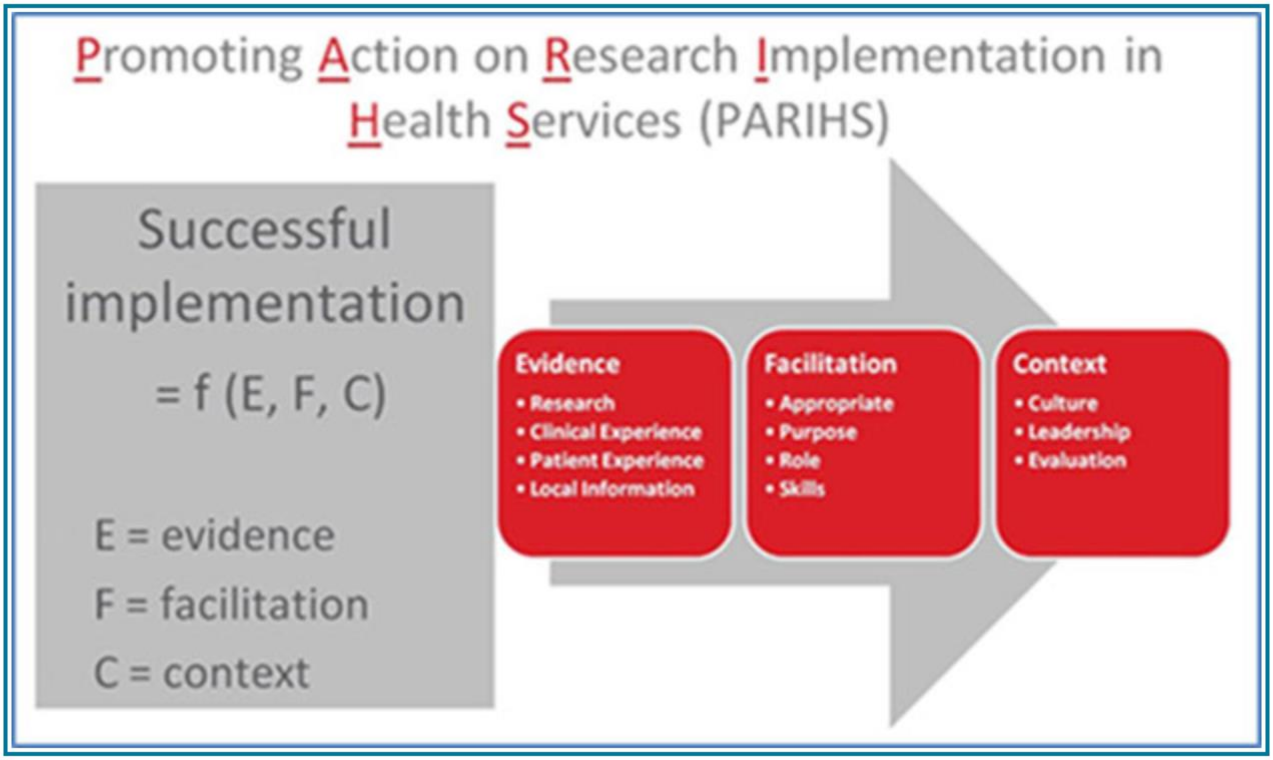

Figure 4

Current process of consulting palliative care for patients in the Cardiac Care Unit

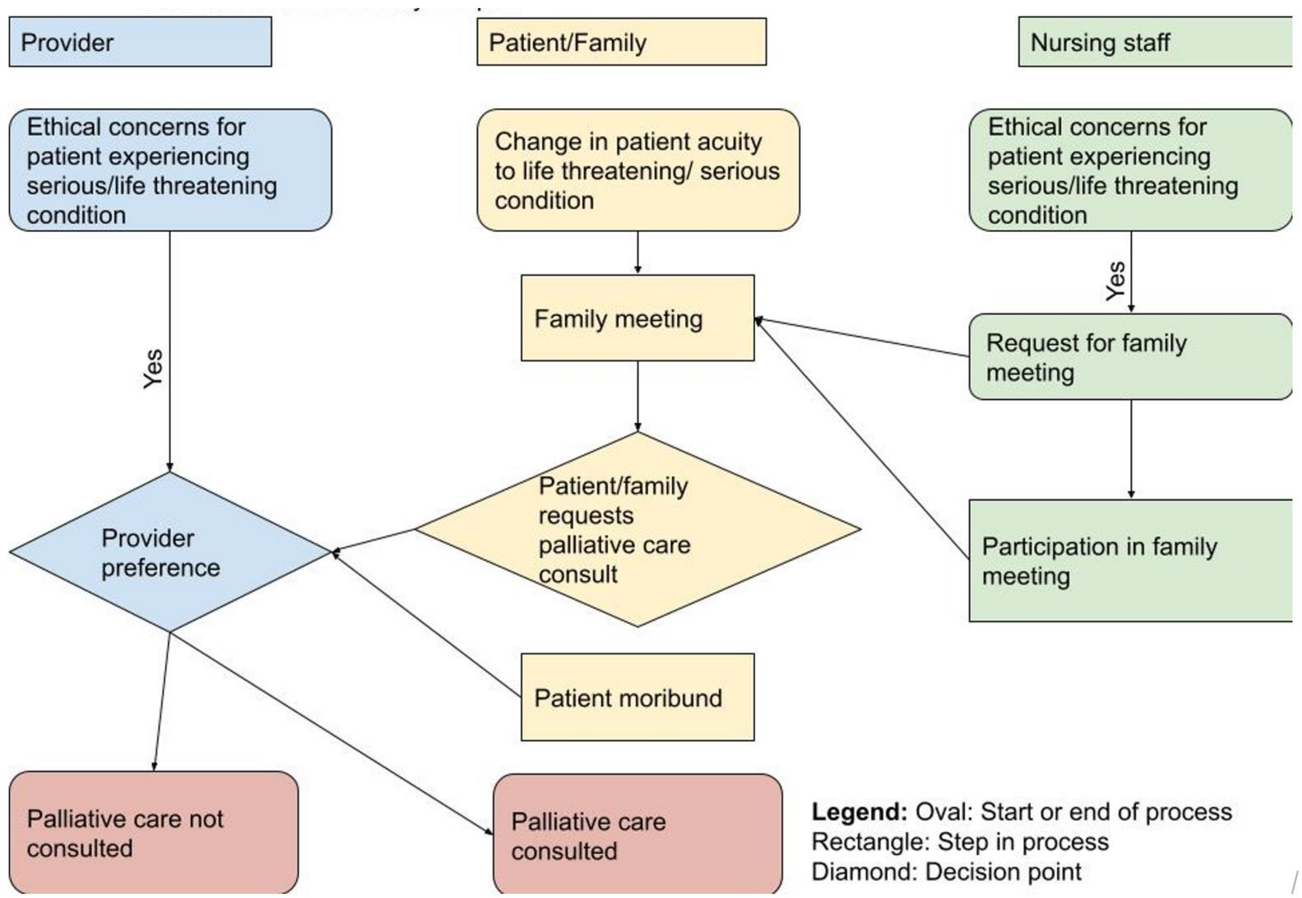

Figure 5

Desired process of consulting palliative care for patients in the Cardiac Care Unit

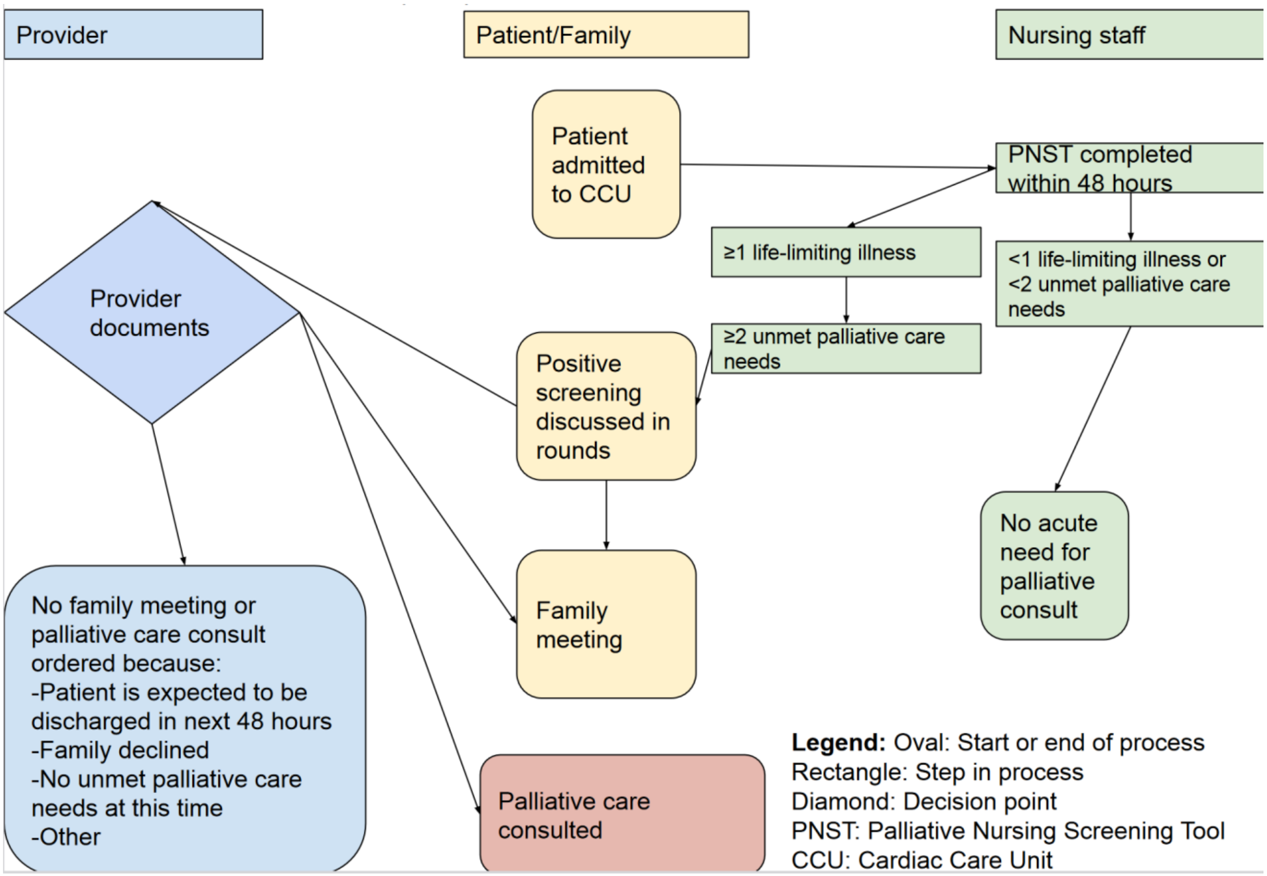

Figure 6

Run chart of PNST compliance rates over time

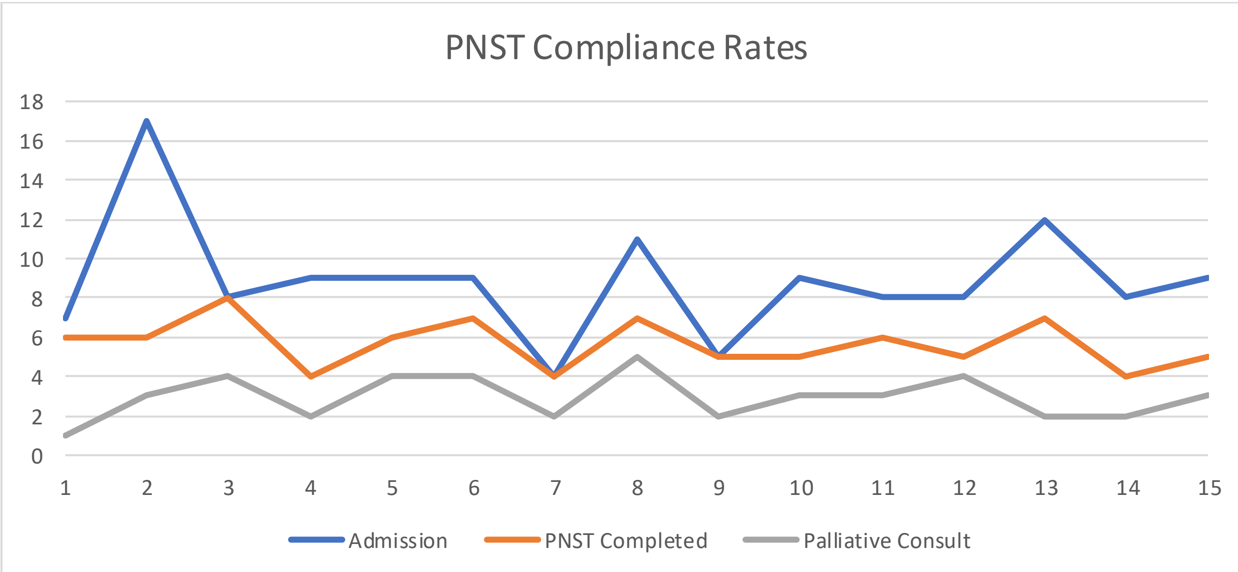

Figure 7

PNST Identified Life-Limiting Illnesses

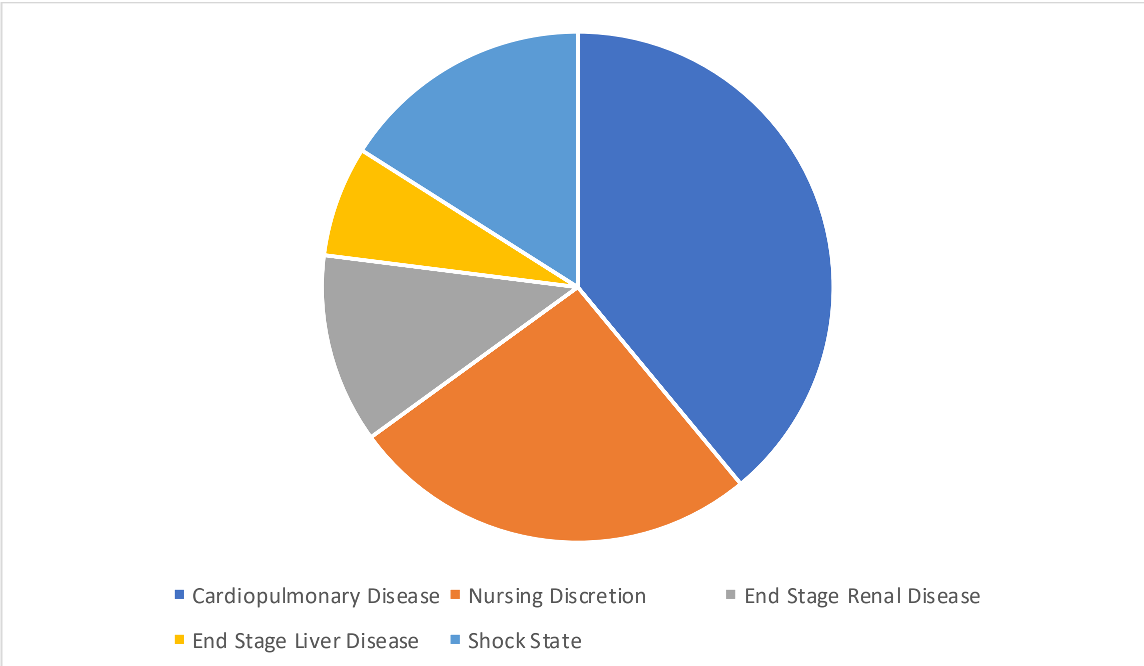

Figure 8

PNST Identified Unmet Palliative Care Needs

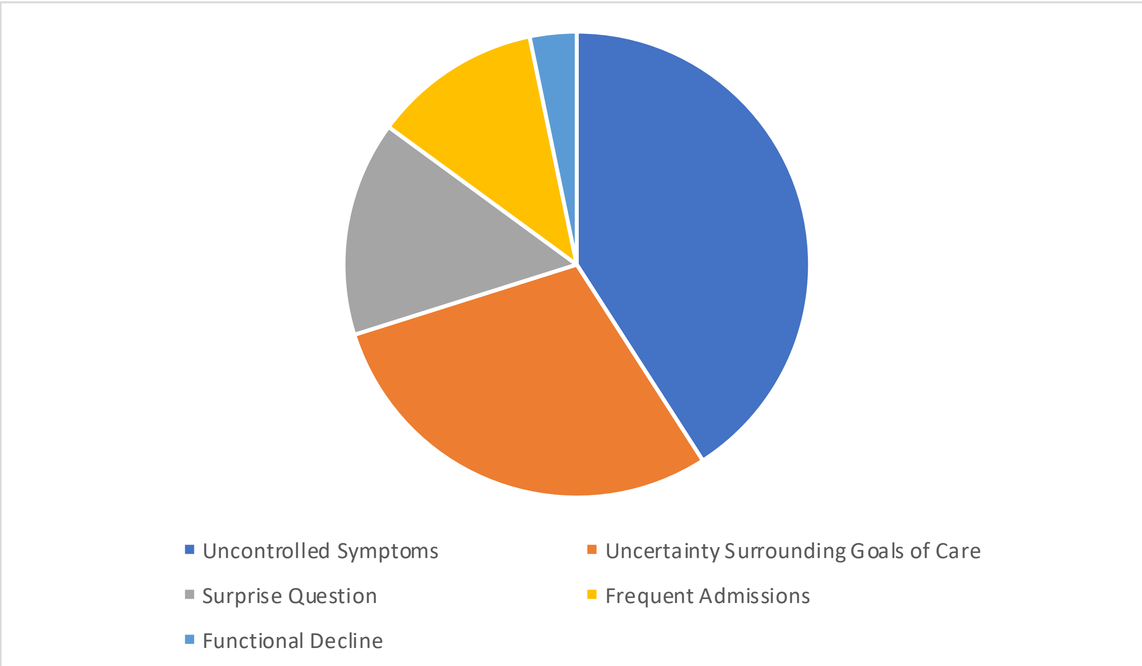

Figure 9

Provider Documentation Response to PNST: Reason to Defer Palliative Consultation