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BACKGROUND AND SIGNIFICANCE

- Critically ill patients in intensive care units (ICUs) are at higher risks for developing pressure injuries (formerly known as pressure ulcers [NPUAP, 2016]).
- Although pressure injury incidence in the ICU can be reduced, interventions have not yet succeeded in avoiding their development.
- Existing literature on the incidence (up to 56%) and prevalence of pressure injuries in the ICUs is scarce, and reports of incidence in this setting are mostly from studies conducted outside US and sometimes over 10 years old (Defloor, De Bacquer, & Grypdonck, 2005; Keller, Wille, van Ramshorst, van der Werken, 2002; Schoonhoven, Defloor, & Grypdonck, 2002; Jiricka, Ryan, Carvalho, & Bukvich, 1995).
- Despite the significance of pressure injury incidence on patient outcomes, minimal studies have examined it in ICUs. The limited literature available on pressure injuries epidemiology in the ICU is largely from studies done in Europe, South Africa, South America, and Canada (Reilly et al., 2007).
- Pressure injuries have a negative impact on mortality, morbidity, and cost in ICU patients.
- This study will address the need for more recent data on the incidence and prevalence of hospital-acquired pressure injuries in intensive care units in the US and will provide evidence for further research regarding the effectiveness of nursing care on prevention and management of pressure injuries in intensive care units.
- Prevention of pressure injury formation in hospitalized patients should be a care priority for healthcare providers especially in critical care settings.
- Pressure injuries, considered a quality of care outcome indicator, are costly incidents with a direct detrimental impact on the health of hospitalized patients.

SPECIFIC AIMS

- This pilot study will:
 - Systematically explore and assess the incidence and prevalence of pressure injury formation in an ICU setting.
 - Identify the methods of recording and documenting pressure injuries and assess the efficacy of the treatment modalities and interventions by appraising the documented outcomes.

PURPOSE

- The purpose of this retrospective observational study is to systematically explore and assess the incidence and prevalence of hospital-acquired pressure injuries in the intensive care units.
- The study is designed to address the following research questions:
 1. What is the frequency of hospital acquired pressure injuries in the ICUs and what methods are used to assess and classify pressure injuries?
 2. How pressure injuries are recorded in the patient's chart, and who is responsible for diagnosis and documentation of hospital-acquired pressure injuries in the ICU?
 3. Which care bundles and guidelines are used for prevention of hospital-acquired pressure injuries, which treatment modalities and interventions are used, and what outcomes are documented?

STUDY METHOD

- A retrospective chart review will be used to examine the incidence and prevalence of hospital-acquired pressure injuries in the ICUs and address the proposed research questions.
- Big Data will be used to identify ICU patients diagnosed with pressure ulcers during the study period.
- Subsequently, healthcare data will be abstracted from the medical records of the previously identified patients (abstracted from the Big Data [criterion sampling]). This purposeful sample will be further examined to address the study's research questions.

STUDY DESIGN

- The setting for this study, is a 1500-bed metropolitan county hospital serving the poor and underserved located in Miami-Dade County, Florida.
- The 40-bed SICU in this tertiary teaching hospital served an average of 800 patients each year who require post-operative intensive care and close monitoring. Patients (> 18 years old) are admitted to the Surgical Intensive Care Unit (SICU) after surgical procedures that include but not limited elective surgeries, oncology surgeries, and organ transplantation.

SAMPLE

- The sample for this study consists of post-operative patients admitted to SICU between the years 2014 through 2016.
- Using criterion sampling (i.e., pressure injuries) hospital's Big Data will be mined to identify and generate a list consisting of documented hospital-acquired pressure injury cases in the SICU (sample) for the years 2014 through 2016.
 - This list will be generated using the financial identification number (FIN) assigned to each case.
 - After the list using FIN is generated, a retrospective chart review (i.e., electronic medical records) will be conducted for inclusion criteria.
- Inclusion criteria:
 1. Medical records that indicated that the patient was initially admitted to the SICU within the established period of time,
 2. Patient was an adult (older than 18 years old) post-surgical patient,
 3. Type of surgical procedure was included in the admission note,
 4. Primary diagnosis leading to surgical procedure was documented in the chart,
 5. Presence of one or more pressure injuries acquired during the SICU stay,
 6. SICU length of stay of the patient.
- Exclusion criteria:
 1. SICU patients who are less than 18 years old to avoid inclusion of pediatric patients that may be medically considered adults based on weight parameters.
 2. Missing operative note regarding the surgical intervention,
 3. Missing primary diagnoses in the admission note,
 4. Patients admitted to the SICU for other than post-surgical procedures,
 5. Non-post-operative trauma patients admitted to the SICU as overflow,
 6. Surgical patients admitted to SICU 24 hours after their initial surgery to avoid confounding factors attributed to care delivered outside the ICU setting.

DATA COLLECTION PROCEDURES

- Following IRB approval hospital's Big Data will be mined for pressure injuries criterion sampling.
- The Quality and Patient Safety Office Information Technology Department may generate a list of patients admitted to the SICU during the study period that meet the criterion sampling criteria.
- This list will be generated using only the FIN as identifier.
- From this final list of SICU patients' medical records meeting inclusion criteria, data abstraction, using the standardized study's Data Abstraction Form, will be done by the RAs.
- Inter-rater reliability will be conducted by randomly selecting 10% of charts from each group for re-abstraction by the PI and comparison with the original chart review data collected by the Research Assistant. A minimum inter-rater reliability of 85% will be maintained.
- Measures:
 - Patient Demographics
 - Pressure injuries
 - Care bundles and Guidelines
 - Treatment Modalities and Interventions

DISCUSSION

- This pilot study is important to establish the incidence and prevalence of pressure injuries in critical care settings, particularly in intensive care units.
- The study will identify the adequacy of documentation of pressure injuries in intensive care units.
- The study will also inform on adherence and modalities of treatment of pressure injuries with special attention to pressure injury care bundles.



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