Advanced Practice Nurse (APN) Intensivists: A Model for Generating Potential Revenues and Cost-Effective Healthcare Delivery in the ICU

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INTRODUCTION

- Intensive Care Units (ICUs) account for over 10 percent of all US hospital beds, have over 4.4 million patient admissions yearly, and account for close to 30% of acute care hospital costs.
- ICUs that use a physician intensivist model of care have improved patient outcomes, less resource use, and lower mortality rates (up to a 40% reduction), large reduction in in-hospital mortality following trauma, particularly in the elderly, and may help save almost 54,000 Americans in the U.S. each year.
- The need for critical care services has continued to grow due to an increased aging population and medical advances that have extended life expectancy. This increased demand for ICU services has resulted in efforts to improve patient outcomes, optimize financial performance, and implement models of care in ICUs that will enhance the quality of care and reduce health care costs.
- By the year 2020 an estimated 22% shortage of intensivists is expected as a result of the aging population and a growing demand for intensivists. This shortage will have increased to an approximate 35% shortage of intensivists by 2030.
- Over 5 billion dollars in healthcare costs could be saved annually by implementing changes in physician staffing just in non-rural U.S. hospitals.

BACKGROUND

- Advanced Practice Nurses (APNs) are increasing in presence in acute care settings both in the United States and globally.
- The largest group of APNs is nurse practitioners. Some APNs function as Acute Care Nurse Practitioners (ACNP) in hospitals and ICUs. In spite of this increased visibility and participation in the healthcare arena, healthcare providers and potential employers are still unfamiliar with the scope of practice of APNs.
- Care provided by APNs in acute care has been documented in numerous studies examining quality of care, mortality, and morbidity. Results of these studies have indicated that the quality of care provided by APNs is equal to that of physicians as well as being cost effective.
- However, studies in the ICU documenting the role of APNs in reducing the costs of care on specific patient outcomes are very limited.
- In ICUs, the role of APNs has been evolving to replace physicians (input substitution) and support patient care rather than providing traditional nursing care.
- APNs function as members of multidisciplinary teams in closed (intensivist lead) or semi-closed (intensivist shared lead) ICUs. Collaborative practice rather than individual or autonomous practice is the norm in both instances.
- The APN Intensivist is a healthcare provider with a high level of independence and specialization in the management of critically ill patients in critical care settings.
- Very little has been published on this relatively new sub-specialty role of APNs.
- The lack of literature to explain the role of APNs as intensivists and of research to evaluate the effectiveness of this APN role made the need clear for research to examine the role economically and its effect on quality of care and patient outcomes.
- The empirical evidence of the effects of APN intensivists on patient outcomes and healthcare costs remains scarce compared to the well documented effects of APNs in other areas and models of healthcare delivery.

OBJECTIVES

- The primary aim of this study was to examine the dose effect of APN Intensivists in a surgical intensive care unit (SICU) on patient outcomes, healthcare charges, charges for APN Intensivists services and APN Intensivists special initiatives when APN intensivist staffing differed.
- The study also examined if there was a difference in health care charges for SICU length of stay and charges for APN Intensivists services when the SICU is staffed by differing APN intensivist staffing levels.
- The study also explored different procedures performed by these providers.

METHODS

- The study used a retrospective chart review of randomly selected patients admitted to a Surgical Intensive Care Unit (SICU) during a 5-year study period (2009-2014).
- These years were further divided into 4 time-periods (T1-T4). Each of the four time-periods represented a different level of APN Intensivist staffing.
- Jackson Memorial Hospital (JMH), the setting for this study, is a 1500-bed metropolitan county hospital serving the poor and underserved in Miami-Dade County, Florida.
- The 40-bed SICU in this tertiary teaching hospital served an average of 800 surgical patients admitted to 24 hours after their initial surgery, 5) patients without endotracheally intubated (orally or nasally), 6) the patient had an indwelling urinary catheter, 7) the patient was discharged from the intensive care unit to a regular hospital floor, and 8) the patient did not die in the SICU.
- Exclusion criteria: 1) missing primary diagnoses in the admission note, 3) patients admitted for other than post-surgical procedures, 4) trauma patients admitted as overflow, 4) surgical patients admitted to 24 hours after their initial surgery, 5) patients without endotracheal tubes, and/or indwelling urinary catheters.

RESULTS

- Study findings indicated no statistically significant difference in the SICU length of stay among the time-periods (M=3.27, SD = 3.32, t (202) = 1.02, p= .31).
- Charges for APN services (generated revenues) increased over the 4 time periods from $11,268 at T1 to $51,727 at T4 when a system to capture APN billing was put into place.
- For each of the four study time-periods (T1, T2, T3, and T4), total healthcare charges for APN Intensivists’ services for the sample were $90,478.
- Study revealed potential areas for revenue generation and the implications for practice advancement.
- Study also documented various procedures associated to APN Intensivist practice in the SICU.

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<th>Charges for APN Intensivists’ Services Over Four Time-Periods (T1-T4)</th>
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<tbody>
<tr>
<td></td>
<td>T1</td>
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<tr>
<td>Charges</td>
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DISCUSSION

- In the present study’s setting medical interns (PG1-PG3) are not allowed to charge for procedures that are not supervised by either a fellow or attending physician.
- Trained APN Intensivists are allowed to perform such procedures with the consent of the attending physician independently and allowed to bill as independent providers.
- This is particularly significant for APN Intensivists in the SICU since they are able to capture revenues without the physical presence of an attending physician, especially on the night shifts when the physical presence of attending physicians is decreased.
- The present study findings add to our knowledge of billing for APN services in the SICU by providing data that were not found in the literature.
- Study also suggests potential of APN intensivists in generating revenues through performance of procedures related to their skills and competencies.
- Despite the magnitude of ICU complications, there is a dearth of research documenting APN Intensivists’ effects in generating outcome-driven care indicators, demonstrated reductions in length of stay, decreases in costs, and prevention of healthcare-associated complications.
- In light of the dearth of the literature examining the effects of APN intensivists on patient outcomes and healthcare costs, further research is needed to fill this gap in our knowledge.

REFERENCES