Title:
An Impact Evaluation of a Newly Developed Pediatric Cardiac Intensive Care Unit Within a Children's Heart Center

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Session Title:
Frontline Clinical Leadership Posters
Slot (superslotted):
FL CL PST: Friday, September 26, 2014: 10:00 AM-10:30 AM
Slot (superslotted):
FL CL PST: Friday, September 26, 2014: 11:45 AM-1:00 PM
Slot (superslotted):
FL CL PST: Friday, September 26, 2014: 3:00 PM-3:30 PM

Keywords:
Impact Evaluations, Pediatric Cardiac Intensive Care and Value-Based Care

Learning Activity:

LEARNING OBJECTIVES	EXPANDED CONTENT OUTLINE	TIME ALLOTTED	FACULTY/SPEAKER	TEACHING/LEARNING METHOD	EVALUATION/FEEDBACK
Example Critique selected definition of the term, "curriculum"	**Example** Definitions of "curriculum" Course of study Arrangements of instructional materials The subject matter	**Example** 20 minutes	**Example** Name, Credentials	**Example** Lecture PowerPoint presentation Participant feedback	**Example** Group discussion: What does cultural training mean to you?

		that is taught Cultural "training" Planned engagement of learners				
	How to determine appropriate data collection and methods for impact evaluations within healthcare settings.	Review how data collection was selected for this impact evaluation Discuss the importance of using databases	10 minutes	Michelle Welander, DNP, RN, NEA-BC, CCRN-P	Poster presentation Participant feedback	Group discussion
	The impact nursing leaders can make by implementing evidence-based value added services with an emphasis on improved outcomes and high quality while maintaining cost.	Discuss importance of evidence-based findings being implemented to the patient's bedside Review the importance of healthcare leaders evaluating new programs	10 minutes	Michelle Welander, DNP, RN, NEA-BC, CCRN-P	Poster presentation Participant feedback	Group discussion

Abstract Text:

Purpose

The highly complex, pediatric patients with congenital heart disease require interprofessional teamwork and collaboration to ensure high quality outcomes with low mortality and morbidity (Penny & Shekerdemian, 2013). The purpose of this study was to conduct an impact evaluation for a newly formed Pediatric Cardiac Intensive Care Unit (PCICU) and to answer the question: Is there a difference between the Pediatric Intensive Care Unit (PICU) and PCICU on clinical outcome measures of pediatric cardiac post-operative patients and nursing resources?

Design

A retrospective pre-test and post-test design was used with the independent, treatment variable as T*ype of ICU:* PICU and PCICU. The dependent variables were hospital length of stay (LOS), ventilation duration, ICU LOS, mortality, cardiac arrest, catheter-associated urinary tract infections (CAUTIs), central line-associated bloodstream infections (CLABSI), RN nursing hours per patient day (NHPD), and RN turnover rates. The confounding variables included race, gender, age, surgeon, and STAT score. The STAT score is an empirically derived complexity stratification tool created by the (Society of Thoracic Surgeons and European Association for Cardiothoracic Surgery STS-EACTS) for the purposes of estimating risk of mortality by placing surgical procedures in categories ranging from 1 to 5 based on complexity (Jacobs et al., 2012).

Setting

The setting for this evaluation was a large, level I pediatric medical and surgical ICU located at a children's hospital within an academic medical center. This large pediatric ICU separated into two dedicated units, a PICU and PCICU, on January 1, 2012.

Sample

This evaluation was conducted using an accessible population of patients that had an operative cardiac procedure and were cared for post-operatively in the PICU from April 2010 through December 2011 and then the PCICU from January 2012 through April 2013. Patients excluded were those greater than eighteen or cases without a STAT score of 1 through 5.

Methods

The framework used to guide this evaluation was Owen's impact evaluation method. Descriptive statistical measures, *t* test, and Pearson's Chi Square were used for analysis. For purposes of this evaluation, an alpha level of .05 was used to determine statistical significance.

Results

In this impact evaluation, only a few of the clinical outcome findings reached a statistical significant difference between the two ICUs. Demographic data were used to compare the similarities between the PICU (*n*=296) and PCICU (*n*=333) for gender, age, STAT score and race. The only statistically significant demographic variable was surgeon, as Surgeon A was the only surgeon until the arrival of Surgeon B after program implementation in 2011. There was also a statistically significant difference found in the pediatric cardiac patient monthly mean NHPD provided. The PICU and PCICU did not have statistically different outcomes in regards to mortality, number of cardiac arrests, length of mechanical ventilation, ICU LOS, hospital LOS, CLABSI, CAUTI, or pediatric cardiac post-operative patient monthly mean NHPD. The RN controllable turnover rates increased substantially during the PCICU group time frame.

Conclusions

The findings from this impact evaluation did reveal the standard of care provided to the patients cared for in the PICU and now the PCICU has continued to produce good outcomes that have improved slightly over the time span reviewed. While only a few statistically significant differences were found, the clinical care outcomes that were discovered did have a clinical impact on the patient outcomes and costs for the organization. These clinical findings are examples of why impact evaluations are useful to healthcare leaders. They serve to provide that "just in time" data that is needed that can affect change to provide for future success in organizational performance and good patient outcomes (Owen, 2007).

Jacobs, J. P., Jacobs, M. L., Maruszewski, B., Lacour-Gayet, F. G., Tchervenkov, C. I., Tobota, Z., . . . Mavroudis, C. (2012). Initial application in the EACTS and STS Congenital Heart Surgery Databases of an emperically derived methodology of complexity adjustment to evaluate surgical case mix results. *European Journal of Cardio-Thoracic Surgery, 42*, 763-765.

Owen, J. M. (2007). *Program evaluation: Forms and approaches* (3rd ed.). New York, NY: Guilford Press.

Penny, D. J., & Shekerdemian, L. S. (2013). The American Heart Association's recent scientific statement on

cardiac critical care: Implications for pediatric practice. *Congenital Heart Disease, 8*, 3-19.