Developing a Critical Care Outreach Team to Improve Patient Outcomes and Promote Healthy Work Environments

Holly Lynn Losurdo, MSN, RN, CCRN, CNE
Heather Joy Cook, BSN, RN, CCRN, SCRN
Brittany Wells, BSN, RN, CCRN

(1) Nursing Finance & Resource Management, Rush University Medical Center, Chicago, IL, USA
(2) Nursing Finance and Resource Management, Rush University Medical Center, Chicago, IL, USA

Introduction:

The Critical Care Outreach Team (CCOT) provides expert critical care nursing support to acute care nurses and patients across 14 acute care floors. The primary goals of this initiative were to improve early recognition of patient deterioration and eliminate out-of-intensive care unit (ICU) cardiac arrests. Through purposeful interdisciplinary collaboration, the CCOT seeks to improve the work environment of bedside nurses, expedite delivery of high acuity care, and improve patient outcomes.

Critical Care Outreach teams, sometimes referred to as rapid response teams (RRTs), have been instrumental in decreasing patient mortality and preventing failure to rescue (FTR) (Aitken et al., 2015; Barwise et al., 2016; Mullany et al., 2016). Additional research indicates FTR is a nurse-sensitive factor and therefore related to a nurse’s work environment and the availability of CCOT services (Mushta, 2018). Critical care outreach teams have been associated with improved patient safety, patient satisfaction, nurse satisfaction, decreased hospital length of stay, and decreased ICU admissions (Aitken et al., 2015; Stolldorf, 2016). Finally, early detection and management of patient deterioration saves hospital resources (Bonafide, 2014).

Successful development and implementation of the CCOT was dependent on cultivating and sustaining a healthy work environment as outlined by the American Association of Critical Care Nurses (n.d.). Skilled communication and interprofessional collaboration empowered clinical ICU nurses to develop a highly specialized team to address priority needs of patients and nurses. Shared visionary leadership afforded the CCOT to make decisions regarding implementation of best practice to shape hospital policy. The result of this unique innovation in emergency response staffing is a CCOT that sustains itself by consistently providing high-quality, effective services reflected in supporting metrics.

Body

Process:

Bedside critical care nurses were recruited to improve patient flow during episodes of high acuity. These nurses gained operational aptitude while developing collegial interdisciplinary relationships. This disruptive innovation served as the prototype for CCOT services. Many challenges were encountered as the team gained momentum. Outreach support services, while in high demand by the acute care nurses, were perceived as an expense competing for limited resources. This required dedication and shared vision in building a healthy work environment to improve patient and nurse outcomes. Interprofessional stakeholders (critical care medicine, emergency medicine, director of pharmacy, director of respiratory, medical faculty, nurse researchers) were identified to improve collaboration among hospital leaders and regular meetings were held to elicit support and accountability. Reporting directly to the associate vice president of nursing finance expanded the CCOT’s scope of practice beyond clinical expertise, providing mentorship in business acumen. The team is empowered to actualize evidence-based solutions that enhance individual, team, and institutional nursing practice.
Collection, analysis, and reporting of data are the primary factors in the growth and sustainability of the team. According to Stolldorf & Jones (2015), constructing a CCOT responsive to the needs of its institution is likely to achieve improved outcomes. Internal review and quality improvement initiatives ensure the CCOT services are congruent with the dynamic needs of the organization. In addition to patient-focused measures such as mortality, emergency response time, and ICU readmission, nurse and provider outcomes encompassing engagement, satisfaction, and educational support are also observed. Clinical presentations of patients preceding emergency response calls are tracked to assist with the development of targeted education in early detection and prevention of patient deterioration.

Outcomes:

The CCOT was created in the setting of a healthy work environment and, likewise, has strengthened and sustained a healthy work environment. Interprofessional collaboration, skilled communication, empowered decision making, and shared visionary leadership resulted in CCOT growth from 1.0 FTE to 10 FTE. In this manner, the achievements of the CCOT have received meaningful recognition and the CCOT has been supported in disseminating its practice at local, national, and international conferences.

CCOT staffing has resulted in fewer codes blue and a statistically significant increase in rapid response calls, suggesting a positive correlation between use of CCOTs and early recognition of patient deterioration. Emergency response time has decreased by seven minutes expediting patient treatment. ICU nurses no longer have to leave a patient assignment to respond to an emergency in the acute care area which improves continuity of care and saves over 500 care hours annually.

An electronic survey conducted in 2016 indicated 95% of bedside nurses believed the CCOT had a positive impact on patient throughput in expediting high acuity care. Bedside nurses reported improved job satisfaction (90%), patient safety (95%), and that the CCOT enhanced their skills and knowledge (87%). Physicians and providers perceived CCOT nurses as “great resources” that improve patient safety (88%) and provide advanced critical care nursing outside of the ICU setting (92%).

The use of early warning scores in early detection of patient deterioration has been extensively studied by the CCOT. Data from this hospital-based research was utilized to develop a post-ICU algorithm used to measure a patient’s risk for ICU readmission. Subjective nurse concern was also included in the algorithm as an effective measure of potential for deterioration (Aitken et al., 2015). As a result, the CCOT’s post-ICU algorithm demonstrated a statistically significant increase in sensitivity for identifying patients at risk for deterioration and ICU readmission.

Extensive interprofessional collaboration led to a shadowing program which began in 2015 affording 4th year medical students the opportunity to work with members of the CCOT to improve recognition and management of patient deterioration. Evaluation of this program is ongoing via electronic survey and has demonstrated improved interdisciplinary communication and understanding of professional roles and accountability.

Conclusion:

Inception of the CCOT has fostered an environment conducive to improved outcomes, innovative practice, and continual learning. Continual growth and interprofessional collaboration have presented new opportunities to address the use of early warning scores, implementation of an emergency response huddle, and formalized education for bedside nurses and unlicensed assistive personnel.

The CCOT is currently in the process of developing a Visiting Clinical Nurse Scholar program to facilitate international sharing of best practices based on relationships forged through dissemination of practice. Each initiative is derived through a healthy work environment and dedication to improving patient outcomes.
Title:
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Keywords:
Critical care outreach teams to improve patient outcomes, critical care outreach in a healthy work environment and interprofessional collaboration to prevent failure to rescue

References:


Abstract Summary:
Critical Care Outreach Teams (CCOTs) play a vital role in promoting healthy work environments and achieving positive patient outcomes. This presentation reviews strategies used in development and implementation of a CCOT. Through interdisciplinary collaboration and shared vision, clinical nurses can be empowered as change agents in actualizing this disruptive innovation.

Content Outline:
1. Introduction
   1. Description of the critical care outreach team (CCOT)
   2. Evidence-based support for use of critical care outreach teams in improving patient, nurse, and organizational outcomes
      1. Appropriate rapid response (RRT) dosing yields decreased mortality (Aitken et al., 2015; Barwise et al., 2016; Mullany et al., 2016)
      2. Perceived improvement in patient safety, patient satisfaction, nurse satisfaction, early recognition of patient deterioration, decreased cardiac arrest outside of the intensive care unit (ICU), decreased hospital length of stay, and decreased ICU admission (Aitken et al., 2015; Stolldorf, 2016)
      3. Early detection and management of patient deterioration saves the hospital money (Bonafide et al., 2014)
   3. American Association of Critical Care Nurses recommendations for healthy work environments related to critical care outreach teams
      1. Skilled communication
      2. True collaboration
      3. Clinical nurses are empowered by authentic leadership to build a healthy work environment and likewise lead by example in sustaining a healthy work environment
      4. CCOT nurses are partners in effective decision making and lead organizational operations
      5. CCOT staffing ensures patients receive the right care, from the right person, at the right time while facilitating continuity of care among the critically ill
      6. Meaningful recognition is demonstrated by the acceptance of the CCOT business plan, expansion of CCOT staffing, nurse and provider feedback, and the opportunity to disseminate findings at the local, national, and international level

2. Body
   1. Project Description
      1. CCOT mission and objectives
   2. Process
      1. Identification of metrics Used to sustain and expand CCOT
         1. Frequency of RRT and code blue calls
         2. CCOT and ICU nurse response time to emergency calls
         3. Duration of emergency calls
         4. Reason for emergency call
         5. Average cost of emergency calls
         6. ICU re-admission rates
         7. Disposition of patient post-emergency response
         8. Early warning score at point of care
      2. Interdisciplinary strategic alliances
         1. Critical care intensivists
         2. Emergency medicine
         3. Director of pharmacy
         4. Directory of respiratory therapy
         5. Nursing research liaisons
         6. Medical faculty
         7. Clinical staffing Office
         8. Senior nursing leadership
         9. Risk management
   3. Dissemination and use of data to guide practice
   4. Organizational education and empowerment of bedside nurses

3. Outcomes
   1. CCOT growth from 1.0 FTE to 10 FTE
   2. Decreased code blue calls, statistically significant increase in rapid response dosing
   3. Decreased response time to emergency calls by seven minutes
4. Improved continuity of care with ICU nurses afforded more time with critically ill patients (500 hours saved annually)
5. Improved satisfaction of bedside nurses in acute care (via electronic survey, 2016)
7. Increased nurse engagement captured through annual NDNQI survey
   1. Incorporated CCOT research
   2. Incorporated subjective nurse concern, validated in nursing literature as an effective measure of potential patient deterioration (Aitken et al., 2015)
10. Established shadow program with 4th year medical students to improve recognition and management of patient deterioration which yielded improved interdisciplinary communication and collaboration (2015)

4. Conclusion
   1. Ongoing evaluation consistent with CCOT mission and objectives
   2. Future endeavors
      1. Interdisciplinary emergency response huddle
      2. Formal education in early recognition and management of the deteriorating patient for acute care nurses
      3. Formal education in early recognition of the deteriorating patient for unlicensed assistive personnel
      4. Development and implementation of nurse-driven morbidity and mortality rounds
      5. Incorporation of frailty and trending of early warning score into surveillance of patients at risk for deterioration
      6. Global initiatives
         1. Shared expertise regarding best practices for CCOT
         2. Development of Visiting Clinical Nurse Scholar Program based on shadow experience in United Kingdom

First Primary Presenting Author

Primary Presenting Author
Holly Lynn Losurdo, MSN, RN, CCRN, CNE
Rush University Medical Center
Nursing Finance & Resource Management
Critical Care Outreach Nurse, Team Lead
Chicago IL
USA

Professional Experience: Masters prepared, dual certified critical care RN with 20 years of clinical and leadership experience. Critical Care Outreach Nurse, Team Lead for last 3 years. 2012-present critical care faculty in traditional baccalaureate program. Numerous poster presentations at local, national, and international conferences.

Author Summary: Holly Losurdo is an experienced critical care nurse who works in the acute care and academic setting. She currently serves as co-lead of a critical care outreach team serving a 697 bed academic medical center. Holly teaches critical didactic and leadership courses at the pre-licensure baccalaureate level. She is presently pursuing PhD studies. Holly is passionate about studying the effects of nurse-sensitive indicators on patient outcomes.

Second Secondary Presenting Author

Corresponding Secondary Presenting Author
Heather Joy Cook, BSN, RN, CCRN, SCRN
Rush University Medical Center
Nursing Finance and Resource Management
Stat Acuity RN, Team Lead  
Chicago IL  
USA 

**Professional Experience:** Critical care nurse with 12 years progressive leadership and clinical experience. Currently practicing as team lead of the STAT Acuity RNs in critical care outreach within a larger academic medical center. Certifications in both critical care and stroke care allows for broad scope of clinical deterioration, and passion for education fosters strong interdisciplinary relationships.  

**Author Summary:** Heather practices as a critical care outreach RN with certifications in critical care and stroke care. Through actively building positive relationships with attending physicians, an idea for unique collaboration was created. This partnership specifically highlights the experiences in pairing expert nurses and medical students as they are emerged into the acute hospital setting as novice physicians.  

Any relevant financial relationships? No  
Signed on 08/01/2018 by *Heather Cook*

Third Secondary Presenting Author 

**Corresponding Secondary Presenting Author**  
Brittany Wells, BSN, RN, CCRN  
Rush University Medical Center  
Nursing Finance and Resource Management  
Stat Acuity Nurse  
Chicago IL  
USA 

**Professional Experience:** 4 years neuro surgical intensive care unit experience 1 year critical care outreach experience Medical Student Collaborative Mentor Holds national certification in critical care nursing  

**Author Summary:** Brittany Wells has four years neurosurgical ICU experience and has been working as a critical care outreach nurse for one year. She serves as a nurse mentor for the Medical Student Collaborative Mentor and has authored several evidence-based unfolding case studies for the Collaborative.