Failure to Rescue

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Introduction

Quality improvement in healthcare is a continuous process that evaluates care delivery in the attempt to maintain and improve patient outcomes. This process must be multidisciplinary. "Nurses have a direct impact on patient safety and healthcare outcomes. Nursing must be recognized and empowered to mobilize performance improvement knowledge and practice measures throughout the organization" (Yoder-Wise, 2011, p. 393).

The Institute of Medicine defines patient safety as the lack of accidental injury due to medical care. Adverse events are those injuries that are caused by an error or omission in medical care provided (Kohn, Corrigan, & Donaldson, 2000).

In 2003, the Agency for Healthcare Research and Quality (AHRQ) established a set of patient safety indicators to measure preventable complications in patients that receive care in hospitals. One of these indicators is the failure to rescue. Failure to rescue is the inability to save a hospitalized patient's life after the development of a complication related to care or disease process. Patient safety is the key focus of many hospital administrators as many regulatory agencies are scrutinizing preventable adverse events, and tying hospital reimbursement to these events. Since the development of failure to rescue as a patient safety indicator, many studies have linked nursing care and patient outcomes. "The failure to rescue rate has been suggested to be a sensitive indicator of the quality and quantity of nursing care. Nurses are often the first members of the healthcare team to detect subtle signs and symptoms of developing complications…" (Simpson, 2005, p. 25). This link has been supported by several nursing researchers. These findings have supported the formation and use of rapid response teams with the goal of providing early intervention during episodes of clinical decline (Manojlovich & Talsma, 2007). Moldenhauer, et al. (2009), point out that prior to a cardiac or respiratory arrest,

patients will show evidence of clinical decline up to eight hours prior to the event. They then established a tool to increase the ability of nurses to identify and intervene in the event of patient clinical decline by identifying certain physiologic changes defined as clinical triggers.

Project Identification

Facility X is a licensed 190 bed community hospital that treats a wide variety of medical and surgical patients of all ages. Registered nurses within the facility range from diploma, associate degree nurses, and BSN's. Facility X also has a Rapid Response Team (RRT) comprised of nurses who are trained in Advanced Cardiac Life Support and Pediatric Advanced Life Support. These nurses are staffed twenty-four hours per day, seven days a week. They are available by pager and Facility X's internal voice-activated communication system.

Facility X utilizes and electronic medical record (EMR). RRT encounters are documented in the EMR by RRT staff after being called by staff nurses or physicians. These encounters capture patient name, visit number, location, reason for call (which are multiple selection of the clinical triggers identified by Moldenhauer, et al (2009), and the interventions performed by the RRT member. These clinical triggers had been present in Facility X's policy and procedure for RRT utilization for several years prior to this quality improvement project.

This quality improvement project examines Facility X's nursing staff's ability to consistently recognize clinical deterioration in patients that experienced cardiac or respiratory arrest, and their use of the facility's Rapid Response Team to provide assistance and education prior to these events. The goal was to determine what impediments were present to the nursing staff's response to signs of clinical decline. These were broken down into four categories: 1) nursing staff failure to recognize sings of clinical deterioration, 2) nursing staff failure to assess patients in a timely manner, and 3) staff failure to communicate concerns.

Team Identification

To perform this quality improvement project, a multidisciplinary team was needed for problem identification, goal development, data collection, and recommendations for change. Members include the Chief Nursing Officer (CNO), an advanced practice nurse specialist, two rapid response nurses, the rapid response team manager, a quality analyst, the Performance Improvement Coordinator, and two staff nurses. In addition to these members, a representative from the Information Systems Department (IS) was included in the preliminary meetings to make them aware of the project in the event that changes to the EMR were necessary. The CNO was the initiator of this project, and she enlisted the assistance of the advanced practice nurse specialist and quality analyst to develop a plan. The advanced practice specialist assists staff nurses in the institution in research, and serves as advisor to the Nurse Practice Executive Council. The Performance Improvement Coordinator assessed ability of the quality department staff's time and resources. RRT and staff nurses were included as they are the direct care providers in the events under study, and are the focus if intervention/education is needed. The RRT and staff nurses will perform the data collection. The quality analyst has been the main contact with the RRT and has been providing data analysis and support for this team. The analyst will develop the data collection criteria and tool, and analyze the results.

Data Collection

In order to perform data collection, a denominator population needed to be established. The team elected to use expired patients as the initial population. Those patients who had elected Comfort Measures Only or Do Not Resuscitate status were excluded. While no benchmark comparisons would be available, the team felt that a process measurement approach would be clinically useful. By examining the care delivery provided to an at risk patient prior to a

cardiopulmonary arrest, deviations from policy or failure to recognize clinical decline could be evaluated, and the proper education could be provided to direct care providers.

Case review of Code Blue (Facility X's designation for cardiopulmonary arrest) for one year to assess for the presence of clinical triggers (Appendix A) utilizing the data collection tool (Appendix B) was performed. RRT and staff nurses attended a training regarding the data collection tool. This education was performed by the quality analyst to ensure that all abstractors were consistent in abstraction methods. The quality analyst collated the information obtained with the RRT call log located within the EMR.

Patient Care Process Measure Goal

Once data analysis had been completed, the team reconvened to establish a goal for improvement. This process improvement project was designated a nursing sensitive indicator by the administration of Facility X, as it "…reflect(ed) the structure, process, and outcomes of nursing care (Yoder-Wise, 2011, p. 399). This project evaluated the nursing staff's ability to accurately assess and intervene in the clinical decline of a patient. Phase 2 of this project will include the RRT and staff nurses, advanced practice specialist, and quality analyst. Gaps in assessment and recognition of clinical triggers will be identified and a plan for organizational improvement including nursing education will be developed. Phase 3 is to develop an assessment tool to evaluate clinical response related to medical providers. The following questions will be evaluated: 1) was the physician notified, 2) was there a delay in physician response to notification, 3) was there a delay in patient diagnosis, and 4) were personnel and resources mobilized. Phase 4 will focus on the quality of clinical care response process asking if there was an error in diagnosis, and were appropriate interventions and treatments initiated. This step in the process will need to include a physician champion to evaluate this information and educate as

deemed appropriate. This physician champion has been named, and awaits inclusion in the process when needed. The end goal of this endeavor is to examine more closely the processes that currently are used in practice in facility X when a patient experiences clinical decline.

Evaluation

The goals of this project is to reduce the number of code and adverse events experienced by patients in Facility X, decrease the number of code events per 1,000 discharges, and increase the percent of patients discharged alive who have suffered a code event. Baseline results for these outcomes prior to intervention are already present for Facility X going back 10 years. Data collection results for the initial phase of this project demonstrated that 75% of patients exhibited clinical triggers within eight hours of their code event. Of the patients who exhibited clinical triggers, only 44% survived to discharge from Facility X, while the patients who did not have clinical triggers prior to their event had a survival to discharge rate of 83% (Appendix C). This reinforces the need for nursing recognition and intervention in the event of clinical deterioration. The RRT and its manager have prepared an educational opportunity for all staff nurses within the facility to share the projects findings and to increase awareness of clinical decline triggers and appropriate nursing interventions. This team has tentatively set an improvement goal of a 10% increase in RRT calls related to presence of clinical triggers.

In order to successfully incorporate the planned changes with nursing staff, the RRT has many different assets that will aid in this process. RRT members are well known within the facility and are respected team members. These nurses interact with all departments on a daily basis and have established relationships with the floor staff. These established relationships and respect give the RRT power to influence their peers. The RRT hopes to facilitate change on the individual staff level by being able to educate and inform coming from an area of expertise. This

approach, motivating others to embrace change, utilizes Roger's Innovation-Decision Process. "The diffusion of innovations theory provides perhaps the most comprehensive framework for understanding innovation adoption and offers insight on factors affecting both individual and organizational behavior (Okafor & Thomas, 2008, p. 354).

  Quality improvement is not a destination, but a continually evolving journey. By encouraging and challenging their direct care providers to seek out areas to improve processes, patients who seek care at Facility X will continue to receive safe care by empowered employees.

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References

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Appendix A

Clinical Triggers*

~Systolic Blood Pressure <90

~Heart rate <40 or >130

~Oxygen saturation <88%

~Urine Output < 50cc in 4 hrs

~Acute mental status change

~Respiratory Rate <8 or >30

~Increasing oxygen requirements

~Acute Significant Bleed

~Acute loss of pulse, color, or movement of extremity

*Moldenhauer, Sabel, & Chu, 2009

Appendix B

Data Collection Tool

Failure to Rescue Data Collection Tool

Visit#	Date Time of Code:	5/19/2009 6:42:00 AM
	Time to Start Review of Record:	5/18/2009 10:42:00 PM

PATIENT INFO: Patient Name: [redacted] Date of Birth: [redacted] LOS: 9

Principal Diagnosis: OTHER SEPTICEMIA DUE TO GRAM-NEG Discharge Dat: [redacted]

CODE INFO: Code Location: ICU Type of Code: Cardiac

Disposition of Patient After Code: Death Outcome of Code: Expired

TRIGGER *In the space below, enter the date and time each trigger occurred. For the first event for each trigger, document the date/time of the last nursing assessment prior to the trigger.*

T1 Respiratory Rate <8 of >30

T2 Saturation <90

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5/18/09  2338  57%  last RN assess = 5/18/09 2010 on 100% ventilator
5/18/09  2348  53%  on 100% vent
5/19/09  0200  42%  on 100% vent
5/19/09  0130  51%  on 100% vent
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T3 Heart Rate <40 or >130

T4 Systolic BP <90

```
5/18/09  2348  84/48    last RN assess 5/19/09 2010
5/19/09  0200  76/50
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T5 Urine Output <30 ml in 2 hours

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5/19/09  0415 - 10 ml , last RN assess 0405 with note MD aware
5/19/09  0432 - notify MD low urine output
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T6 Acute Mental Status Change

For the following triggers, answer Yes or No as appropriate if the medical record demonstrates the trigger occurred. If Yes, include the date and time:

T7 Rapidly Increasing Oxygen Requirements	NA	T9 Acute Significant Bleed	NA
T8 Acute Loss of Pulse/Color or Movement of Extremity	NA	T10 Seizure	NA

Appendix C

Trigger	Volume	Percent
T 4 Systolic BP <90	26	32.91%
T 3 Heart Rate <40 or >130	13	16.46%
T 2 O2 Saturation <88%	12	15.19%
T 5 Urine Output <50 in 4 Hrs	9	11.39%
T 6 Mental Status	7	8.86%
T 1 RespiratoryRate <8 or > 30	7	8.86%
T 7 Increasing O2 Requirements	3	3.80%
T 9 Acute Significant Bleed	1	1.27%
T 8 Acute Loss of Pulse, Color, or Movement of Extremity	1	1.27%
Grand Total	79	100%

Patients With Triggers

- RRN Encounter 0/19 Code Events: 0%
- Survived Code 12/19 Code Events: 63%
- Survived to Discharge 8/18 Patients: 44%

Patients Without Triggers
N=6

- RRN Encounter: 0%
- Survived Code: 100%
- Survived to Discharge: 83%