Rapid Response Teams

Rebecca Richmond, MHA Administrative Fellow Thomas Jefferson University Hospital

Each year, The Joint Commission, which evaluates and accredits nearly 15,000 healthcare organizations and programs in the U.S., releases its National Patient Safety Goals. The implementation of these goals is required by all accredited organizations in order to improve the quality and safety of patient care.¹ One of the 2008 National Patient Safety Goals requires hospitals to develop medical response teams by December 2008.² Physicians at the University of Pittsburgh Medical Center (UPMC) were the first in the U.S. to develop these teams, often referred to as Rapid Response Teams (RRT) or Medical Emergency Teams (MET), in 1989.³

As part of this trend, the Rapid Response System Collaborative was established in 2006. The Collaborative, whose goal is to implement RRT programs in teaching and community hospitals, was organized by the Association of American Medical Colleges and the Delmarva Foundation, and sponsored by The Robert Wood Johnson Foundation. In 2006, Thomas Jefferson University Hospital (TJUH) joined the Collaborative. The RRT program was launched as a trial in May 2006 on a medical floor. It expanded to four medical/surgical floors, and was expanded again to the entire inpatient population (625 beds) at TJUH in October 2006.

The TJUH RRT consists of highly trained personnel that function as a pre-code team: an ICU nurse, respiratory therapist, medicine resident, anesthesiologist, and, unique to TJUH, a surgical resident. Bedside clinicians (nurse, resident, attending) call the RRT by activating a page when the patient meets criteria (Table 1). After being called, the team arrives within three minutes to the bedside, at which time they analyze the clinical situation, begin interventions to stabilize the patient, and communicate with the patient's attending physician and house staff. The team then helps the caregiver initiate a plan, and turns care back to the normal caregivers. Patients are often transferred to an ICU or step-down setting. On average, the team completes its work and disperses in under 60 minutes. The objective is to provide advanced care for unstable patients early enough to prevent cardiac or respiratory arrest in non-ICU settings.⁴

Table 1.

CRITERIA TO CALL AN RRT AT TJUH:

- Blood Pressure: below 90 or above 180
- Heart Rate: below 45 or above 125
- Respiratory Rate: below 8 or above 24
- Oxygen Saturation: below 90% or increasing oxygen requirements
- Acute change in mental status
- New onset of chest pain
- Staff member concerned about patient
- Patient has not responded to treatment already underway for recent change in status

TJUH's RRT program entails intensive education and communication efforts throughout the hospital and among all staff. A multidisciplinary committee was established to review individual cases, address opportunities for improvement, and update a report card, which was developed to track key measures indicating utilization and outcomes of the RRT. This committee continues to meet bi-weekly and closely reviews the report card.

Based on internal performance measures, preliminary results from the scorecard and staff input are positive. Tracking metrics from the outset has yielded the following results from calendar year 2007:

- Average response time 2.33 minutes
- Survival to discharge rate 73%
- Patient intubation rate 25%
- Transfer to higher level of care rate 77%

As of March 2008, over 700 RRT calls have occurred at TJUH. This suggests that ill patients, for whom early intervention is imperative, are receiving care prior to further clinical decline.

An important positive outcome of the RRT is the empowerment of nurses who call for help when they are unsure of a patient's condition. For example, bringing a critical care nurse to the bedside with the RRT call has led to an early diagnosis of a post-operative stroke. Although staff nurses are the most frequent initiators of RRT calls, residents and attending physicians have also called the RRT when a patient requires many caregivers rapidly at the bedside to treat their worsening symptoms. Initially, some physicians worried that the team would usurp the functions of the medical and house staffs, however, these concerns have dissipated with the RRT team working closely with the bedside nurse and house staff. Furthermore, attending physicians are to be notified via telephone by a team member within 15 minutes of arriving at the patient room. Plans are underway to adapt the RRT structure to the Jefferson Hospital for Neuroscience and the Methodist Hospital Division.

TJUH has also developed two unique RRT structures for both pediatric and obstetric patients. Jefferson's Pediatric RRT was developed to bring pediatric expertise to the patient's bedside. The Pediatric RRT responds to inpatients 13 years and younger with pediatric-specific supplies and equipment. Currently the Obstetric Critical Response Team (OBCRT) responds to obstetric emergencies on the ante- and post-partum patient floors, and is working to expand to the Emergency Department and other inpatient areas that treat pregnant patients. Both of these RRT structures have unique criteria for calling the team, separate monitoring, and defined oversight meetings to review calls.

Overall costs and financial ramifications of the RRT program are difficult to measure. TJUH shows virtually no staffing costs to support the RRT as the system for RRT response mimics the current hospital system for responding to cardiac and respiratory arrests (code) calls. However, the opportunity cost of clinicians leaving their area or current work to respond to the RRT call is difficult to quantify. Of course, quantifying the costs of these preemptive interventions versus eventual cardiac or respiratory arrest events is not possible.

Whether RRTs reduce mortality in hospitalized patients has been the subject of debate, mostly due to mixed research results. At least one retrospective six-year study of a tertiary hospital showed that as RRT calls increased, cardiac arrests decreased.⁵ Although the focus of most clinical practice is evidence-based, the RRT has become a permanent trend due to The Joint Commission's regulations. Quantifying RRT outcomes will continue to evolve as increased experience with this intervention grows.

References

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