

THE TRIPLER ARMY MEDICAL CENTER RAPID RESPONSE TEAM

*A Force for Improved Communication
and Patient Safety*

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Tripler Army Medical Center (TAMC) implemented a fully funded and executed Rapid Response Team (RRT) on November 1, 2006. The team has been very well received and is widely perceived as being of great value across the institution. Executed as a Pilot Study sponsored by MEDCOM Patient Safety, the TAMC RRT demonstrates that RRT's are feasible, effective and relevant in the Military Health System (MHS). Dr. Eric Crawley, Chief of Critical Care at TAMC believes the RRT has been a force for positive change in the inpatient venues and has contributed to a safer and more collaborative environment. In this article Dr. Crawley shares the concepts behind and the motivations prompting the creation of the RRT, interim results and several illustrative cases.

Rationale and Potential Benefits of RRT's

The Tripler RRT model makes a distinction between the RRT and the Code Blue Team. It is important to understand the differences between the teams. The Code Blue team continues to be the team which brings the equipment and personnel necessary to mount the robust ACLS response required when a patient is in extremis. The RRT response has a much smaller footprint and is more cognitive and measured in nature. As the response is less dramatic than the Code Blue, staff are often less hesitant to activate the RRT versus the Code Blue Team. A premium is placed on assessment, interpersonal and communication skills among responders. For the above reasons, the RRT is not intended for patients who are in need of immediate lifesaving interventions.

The main benefit of the TAMC RRT is that it institutionalizes a means of identifying and responding to patients who are manifesting early signs of clinical deterioration or symptoms of concern. This comes from the recognition that in retrospect most cardiac arrests were predictable based on vital signs and other clinical findings present in the hours leading up to the arrest. It is generally accepted that

interventions applied earlier in the course of a patient's decline might avert cardiac arrests or organ system failure. The unfortunate reality is that preventable morbidity and mortality continues to occur. This could potentially be averted if staff were better at identifying problems and intervening at an earlier point.

Preventable adverse patient outcomes attributable to human factors are often related to one or more of the following elements: communication failure, deficits in knowledge, and/or skill or lapses in attention. The RRT concept can potentially mitigate each of these human factors. As successful RRT implementation is reliant on a commitment to education of hospital staff and RRT responders, it is a means for conveying concepts which enhance communication among members of the health care team.

RRT training is an opportunity to reinforce communication tools such as SBAR (Situation, Background, Assessment, Recommendation) and tackle barriers to effective communication which arise from differences in rank, position and experience. In addition to enhancing communication, the pre-implementation training seeks to provide staff members with the cognitive skills necessary to identify and respond to patients with subtle findings suggesting clinical deterioration. During the RRT response, the more experienced RRT nurses often function as teachers and mentors providing much needed clinical expertise. This reassures the junior nurses that help is readily available if they find themselves outside their clinical comfort zone.

Training not only emphasizes the RRT activation triggers but also the institutional expectation that an RRT call is mandatory when a trigger is met. The RRT in effect becomes a forcing function that requires staff members to address findings of concern and when activated prompts the health care team to focus their attention and review the diagnostic and treatment plan in more detail than perhaps they might have otherwise.

To dispel concerns that the RRT will make unilateral medical decisions or make value judgments regarding quality of prior care, it is essential that the role of the RRT is well defined. Tripler has placed great emphasis on the collaborative nature of the RRT. The RRT does not supplant or usurp the primary team but responds to assist the primary team with assessment, stabilization, communication and if necessary the transfer of their patient

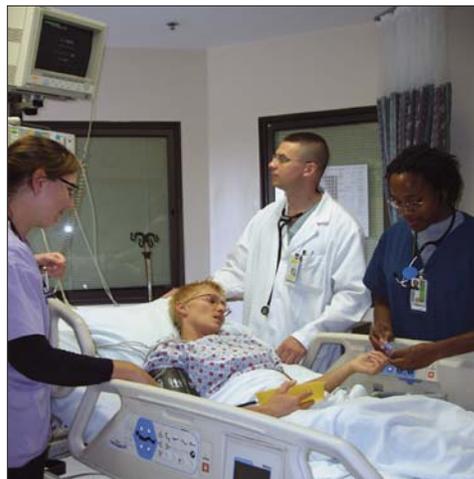


Photo of Rapid Response Team in action from Tripler RRT Family Brochure. Brochure caption reads: We hope you never need to use the Rapid Response Team, however, Tripler Army Medical Center is committed to providing programs for patient safety and quality care.

to a higher level of care. When the RRT is called, the primary service must also be notified. The RRT works under the direction of the primary service in support of that team's treatment plan. This framework has been well received by all clinical services.

Specifics of the TAMC RRT

The team is available twenty-four/seven to all inpatients and outpatients. Although initially envisioned as an inpatient resource it has shown value in the outpatient clinics as well. The team responds to a patient's bedside within five to ten minutes of activation. It is comprised of a Critical Care Nurse, and a Respiratory Therapist, with an on call Critical Care physician functioning as the team consultant. The team has some limited standing orders, and the RRT nurse brings a device allowing for point of care ABG testing. Each response is documented in the inpatient record and data is collected via an RRT log. Caller surveys are distributed to grade each response and patient follow ups are performed six to eight hours post response.

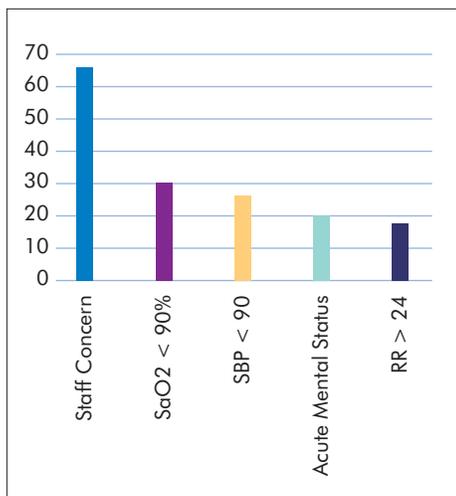
The Call Criteria or activation triggers are similar to those published in the literature, with the exception of our selection of a more sensitive tachypnea trigger. They are:

- RR < 8 or > 24
- HR < 40 or > 130
- Acute Change in Mental Status
- SpO₂ < 90% with O₂ Supplement
- SBP < 90 mmHg
- Staff Worried
- Family Concerned

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Since inception, the RRT has responded to one hundred thirty-four calls throughout the facility. The average has been twenty-seven calls per month which is in line with IHI call rate predictions of 10calls/100beds/month. Often, multiple triggers were met. The most common trigger found in 68% of calls was activation due to Staff Concern. This seemingly vague and subjective trigger has been found to be very sensitive and meaningful. The table below demonstrates frequency of calls by trigger.



A review of call dispositions reveals that the majority (56%) of patients could be managed on their ward. Transfer to the ICU was required in 25%, Stepdown Unit in 9%, and ER in 5%. To date it does not appear that the RRT has adversely affected the ICU census. Currently there is insufficient data to comment on changes in Code Blue rates, ICU length of stay or other objective outcomes primarily due to challenges in establishing historical baseline data, and the brief interval since RRT implementation.

In the near future, Hospitalists will be incorporated into the team. A Pediatric RRT is being developed. We will be using automatic clinical alerts from the electronic medical record system to help increase identification of patients meeting RRT trigger criteria. In recognition of the value of patient and family concerns, effective June 1, 2007 a Family Brochure explaining the RRT will be given to all patients during admission. The brochure will explain when and how a patient or family member can contact the RRT. The RRT will follow up with patients and family members within

twenty-four hours of a call to make sure their concerns have been addressed.

Illustrative Cases

Recently, a 35 year old woman admitted for abdominal pain developed respiratory distress. The RRT was activated and a presumptive diagnosis of massive pulmonary embolism was made. The patient was rapidly transferred to the ICU where after confirmation she received thrombolytic therapy with resolution of her respiratory distress. It is doubtful that the evaluation and transfer would have occurred as expeditiously without the RRT.

A woman in her early 20's was preparing to be discharged from an ambulatory surgical center. She appeared pale and diaphoretic and became orthostatic. She and her husband were highly concerned. The surgical team was unavailable and the RRT was called. The RRT evaluated the patient and conferred with the surgical team. It was very reassuring to the patient and husband that their concerns were taken seriously. The patient left later that day with improved confidence in the care the institution provided.

A patient on inpatient psychiatry with depression and anxiety developed increasing dyspnea which had been ascribed previously to anxiety based on prior negative evaluations. The psychiatry nurse was appropriately concerned and activated the RRT. The patient was found to be in impending respiratory failure from undiagnosed neuromuscular disease. This response averted what would have most likely been a Code Blue on a locked psychiatric ward.

Summary

The TAMC experience with the RRT has been uniformly positive. It is our belief that our staff are better able to recognize subtle findings leading to the earlier identification of clinical deterioration and that when recognized, those staff now have a means of rapidly marshalling help. We believe that the RRT nurse in particular brings expertise to the bedside in support of an increasingly junior and transient nursing staff. The institutional expectation that the RRT will be called when trigger criteria are met places the responsibility on the staff member to seek help. The collaborative essence of the team provides assistance to the primary team without com-

promising that team's autonomy. The enlistment of patient and families in team activation sends a message to our beneficiaries that the institution is responsive and that their concerns are taken seriously. The net effect of all of the above is to create an environment where communication is enhanced, help is embraced and patient safety is maximized.

While not a panacea it is our sincere belief that when funded and executed appropriately with adequate staffing, the RRT concept can significantly improve the quality of inpatient care provided in the MHS. This author believes it is time for the MHS to embrace that which is widely viewed as essential in the civilian healthcare sector.

Comments, questions and requests for RRT implementation and training aids can be directed to Dr. Crawley at (808) 433-2297 or Eric.crawley@us.army.mil.

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