



Rapid Response Teams in Hospitals (RRT)

Khalil Rizk, MPH, MHA, CPHQ



RAPID RESPONSE TEAMS (RRT) in HOSPITALS

RRT results in 37%
reduction in post-
operative deaths

RRT results in
50% reduction
in cardiac
arrests outside
ICU



Triggers for Calling the Rapid Response Team in the Hospital:

- 1- Change in Heart Rate
- 2- Change in Oxygenation
- 3- Change in Respiratory Rate
- 4- Change in Blood Pressure
- 5- Signs of Hemorrhage
- 6- Decrease in Urine Output
- 7- Decreased level of consciousness/ Onset of agitation/ Delirium, or Seizures



Outline

- What is RRT
- Why RRTs
- Organization of RRTs
- A hospital's Experience with RRT
- Costs and Benefits of RRTs
- Needed Action





The first of the six interventions of “Save 100,000 Lives” Campaign of the Institute for Healthcare Improvement (IHI-2004)



“Deploy Rapid Response Teams at the first sign of patient decline”

Joint Commission’s National Patient Safety Goal # 16 introduced in 2008



Organization Accredited
by Joint Commission International

“Goal 16: Improve recognition and response to changes in a patient’s condition”



What is RRT?

- A method of bringing ICU-level care to the bedside of clinically deteriorating and critical patients by a multidisciplinary team
- When a nurse is concerned about the patient's worsening condition, RRT responds to the patient at the bedside
- The RRT will stabilize the patient's condition and integrate his/her care with the primary team



Why RRTs?

- To prevent deaths outside the ICU by attending to the patient as soon as the primary care team recognizes the need for the RRT to intervene
- “Help is available around the clock”
- Primary physicians are busy and may not be available
- Not all staff have enough experience to deal with critically ill patients





Evidence-Based Practice

Studies show that RRTs results in:

- **50%** reduction in the occurrence of cardiac arrest outside the ICU
- **58%** reduction in post-operative complications requiring transfer to ICU
- **37%** reduction in post operative deaths.
- RRTs may decrease the overall hospital mortality by a mean of **26%**.



How Does it Work ?

- **Primary nurse recognizes a change in the baseline patient's condition**
- **Physiologic changes can be gradual or sudden, they should trigger calling the RRT**



Triggers for Calling the RRT



(Bellomo et al)

Staff Concerned/Worried

"THE PATIENT DOES NOT LOOK?ACT RIGHT", gut instinct that the patient's condition is deteriorating

Change in Respiratory Rate / Labored Breathing

Respiratory rate is less than 8 or greater than 30 per minute

Change in Oxygenation

Oxygen saturation below 90%



Change in Heart Rate

Heart rate changes to less than 40 bpm or greater than 120 bpm

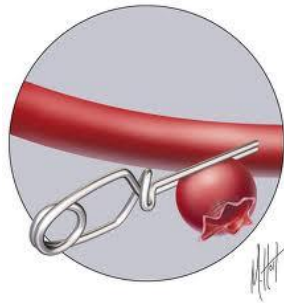


Triggers for Calling the RRT

Change in Blood pressure

Systolic pressure drops below 90 or rises above 180 mmHg

Hemorrhage



The patient develops uncontrollable bleeding from any site

Decrease in Urine Output

Urine output is less than 50 cc over 4 hours



Triggers for Calling the RRT

Decreased Level of Consciousness

The patient becomes somnolent, difficult to arouse, confused, or obtunded

Other Alterations in Consciousness

Changes in mental or CNS status, slurred speech, limb or facial weakness, seizure, etc.

Additional Criteria

Chest pain unrelieved by nitroglycerin, threatened airway, or uncontrolled pain



Organization of RRTs

- Patient's baseline condition deteriorates during 6.5 hours before an expected critical event or actual cardiac arrest happens
- RRT constitutes of a group of trained healthcare professionals (intensivists, nurses, respiratory therapists...)





Organization of RRTs (Pronovost & Angus)

Rapid Response System Models

Model

Personnel

Medical Emergency Team

Physicians (intensivists or hospitalist) and nurses

Critical Care Outreach

Critical Care physicians and nurses

Rapid Response Team

Critical Care nurse, respiratory therapist, and physician (critical care or hospitalist)



A Hospital's Experience with RRT

(William S. K.)

- ✓ Pilot test in 2004
- ✓ 128-bed non-teaching acute care community hospital
- ✓ Team members included: 6 nursing leaders, 4 ICU staff nurses, 3 respiratory therapists, and the chief nursing officer.



A Hospital's Experience with RRT

Planning

- ✓ Review current evidence-based practice
- ✓ Establish an RRT structure
- ✓ Evaluate the skill level of the members
- ✓ Establish triggers for calling the RRT
- ✓ Provide education
- ✓ Measure results
- ✓ Deploy program pagers
- ✓ Develop feedback mechanisms
- ✓ Provide ongoing education for responders



A Hospital's Experience with RRT

Implementation

- ✓ RRT team: Critical care nurse and respiratory therapist
- ✓ In-house call 24/7
- ✓ Easy-to-remember pager 1111
- ✓ RRT expected to arrive at the scene within 3-5 minutes
- ✓ Uniform communication technique: SBAR



A Hospital's Experience with RRT

Follow-up

- ✓ Key indicators were tracked to measure patient's outcomes before and after implementation of the RRT
- ✓ Information collection included: demographics, location, reasons for the call, call start time, call end time, and narrative information for the primary physicians



Costs of RRT

- **Special remunerations of the RRT members**
- **Costs of staff education**





Benefits of RRT

Significant improvements in clinical outcomes:

A focused study compared 24,193 patients hospitalized before the start of RRT with 24,978 patients hospitalized after the RRT was put in place. RRT was activated 376 times in a period of 20 months.

Findings:

Decrease in cardiac arrests from 11.2 to 7.5 cardiac arrests per 1,000 patients



Benefits of RRT

- Improved patient safety and shorter hospital stays
- Fewer code blues and fewer transfers to ICU
- Increased awareness by nurses of signs and symptoms leading to deterioration in a patient's condition
- Decline in hospital mortality and morbidity
- Avoidance of pain and suffering
- Increased satisfaction of patients
- Increased job satisfaction among nurses



RRTs...They do save lives!

**Dr. Don Berwick,
President and CEO of IHI,
stated:**



“The names of the patients whose lives we save can never be known. Our contribution will be what did not happen to them.”



Needed Action

Hospitals in Lebanon are encouraged to consider the implementation of RRTs as an evidence-based approach to improve the efficiency of early intervention and reduce the risk of delayed attendance to cardio-pulmonary arrests.



*Thank
You*

Special thanks to:

- ***The organizers of this event – The Lebanese Society for Quality and Safety in Healthcare (LSQSH)***
- ***My assistant - Joelle Khysho, Risk Management Officer, AUBMC***