A NATIONAL EPIDEMIC

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Introduction

Rapid response systems have the potential to prevent adverse clinical outcomes, including cardiac arrest and death, as hospitalized patients show warning signs prior to deterioration. These programs that are designed to improve the safety of hospitalized patients whose condition is deteriorating quickly. They are based on accurate identification of high-risk patients, early notification of a team of responders who have been preselected and trained, rapid intervention by the response team, and ongoing evaluation of the system’s performance. Several terms are often used to refer to rapid response systems. These include critical care outreach, medical emergency teams, medical response teams, and rapid response teams. There are subtle differences between these terms, but all maintain two key features: how the team is activated; and the response of the team. Put yourself in the situations below. How would you respond?

Case Scenario #1

You are the nurse on a busy 36 bed telemetry floor working the 3pm-11pm shift with five patients assigned to you and you are about to get your sixth from the recovery room; a post-op hernia repair. As you walk into your last patients room for your initial assessment; the 68 year old male who was admitted this morning with atypical chest pain and shortness of breath, you find the patient with increased shortness of breath. You increase his oxygen from two to four liters per nasal cannula then to face mask, but doesn’t help his shortness of breath, and now he is starting to complain of chest pain.

Case Scenario #2

You are the nurse in the same day surgery unit and the morning surgeries are just starting to return which is normal for the morning workflow. Until you notice that your patient with a diagnostic colonoscopy is somnolent and only responsive to sternal rubs and is only breathing 7 breaths per minute.

The answer to both of these questions is that the nurse calls a rapid response for assistance in managing what could either be a life and death situation or a manageable event if caught early.

In the United States Hospitals, annually there are 209,000 cardiopulmonary arrests or code blues for short. Out of these code blues the survival rate is 23.9 % (AHA, 2015). With these code blues there is the possibility that many of them are preventable. For the patient who is on the Medical Surgical nursing unit there are signs of patient decompensation that if left untreated can lead to a code blue situation, and with that increased morbidity and mortality. This isn’t to say that the nurses caring for these patients are negligent; far from it. But when the nurse, on a typical day, is faced with the ever increasing demands of patient care, delegating tasks and making sure compliance is in order both regulatory and in documentation, it is difficult at times to see when simple patient distress may lead to a cardiac arrest; only to see in hindsight what may have been prevented. Nurses are also faced with the problem of getting help when they do recognize a problem with their patient; it can be very frustrating at not being able to get the needed help from the attending physician when help is needed the most.

History of Rapid Responses: Definitions, Differentiation from Code Blue

The start of rapid response teams began in Liverpool Australia in 1995 with the first pediatric rapid response team. It wasn’t until 2005, when the Institute for Healthcare Improvement (IHI), a healthcare organization whose mission is to improve health and healthcare worldwide, implemented the rapid response as their most aggressive move in their 100,000 lives campaign that rapid responses took off. (IHI, 2014)

By 2007, 1,500 hospitals had reported putting rapid response teams into action, and in 2008 rapid response teams or RRT, became part of hospital accreditation by the Joint Commission on Accreditation of Healthcare Organizations.

The goal of the rapid response team is simple; to come to the aid of a patient before that patient deteriorates clinically. By getting to the patient before this happens it thereby may prevent the need for patient transfer to the intensive care unit, respiratory collapse, cardiovascular collapse or all of the three. The difference between a rapid response and code blue is that in a rapid response while the patient may be possibly deteriorating he still has intact cardiopulmonary functioning. In a code blue situation, the patient is either in a respiratory arrest or a cardiopulmonary arrest.

The results from implementing a RRT have been mostly good with some studies citing the lack of cost effectiveness and which model of a RRT is better over another. A study by Leach and Mayo (2013) cited the need for improvement of regular team training to build cohesion when working together. But for the most part it has been a positive outcome for both staff and patients; with one qualitative study citing improved morale and teamwork, improved education for nurses and physicians, a positive redistribution of workload for nurses and physicians. The end result being that of
reduced code blues outside the intensive care unit, decreased length of stay and decreased morbidity and mortality. These facts were cited by studies done by the Institute for Healthcare Improvement (IHI) that revealed that in one hospital, when rapid response teams were in place that the number of code blues dropped while the survival rate increased from 40% to 60% (IHI 2014).

Rapid responses aren’t just limited to the inpatient arena. According to a study by Lakshminarayana et al., (2014) 8% of rapid responses called were either for patients in the hospital for outpatient visits or for outpatient procedures. When the rapid response was resolved, the majority of those patients were admitted to the hospital. There are even rapid responses called for visitors in the hospital that experienced a significant event (Wittenauer, 2014).

Who calls a Rapid Response & Criteria for RRT

When calling for a rapid response team to attend to a deteriorating patient, institutional policy will dictate who may call a rapid response. In most cases it is usually the nurse taking care of the patient that initiates the rapid response request, but in some hospitals it can be anyone involved with the patient to include respiratory therapy, nursing, physicians and even family members may call for a rapid response. You should check your own hospital policy to see how this is handled. Any staff member who is concerned over the patient; especially if that patient has failed to respond to prescribed treatment by the medical/nursing team.

The reason that a rapid response is called on a patient is to prevent any further clinical decline, but with that being said the reasons are varied and will be discussed here and they are generic in nature. The reasons for calling a rapid response are listed in Table 1.

Rapid Response Team Members

Depending on the institution the rapid response team may be made up by different personnel, but in general the team may be made up of:

- A Critical care nurse
- Respiratory therapist
- Physician; either the hospitalist or an intensive care specialist or both
- Nurse assigned to that patient
- Nursing house supervisor
- Assistant nurse manager
- Clinical Nurse Specialist
- Clinical Pharmacist

Other team members may include anesthesia providers, surgical residents or surgical house physicians, paramedics (if used in that particular hospital).

The clinical nurse assigned to that patient needs to stay with that patient to give patient history and the events leading up the rapid response. This nurse is poised to be in a critical position because only this nurse knows that patient and his/situation.

The rapid response team is activated in many ways usually by overhead page within the hospital, beeper notification or both. It is important that when activating the rapid response to name the floor and room number; not the patient. In the hospital where I work, the announcement is repeated a total of three times to ensure the rapid response team members get the right floor and room number.

Team Member Treatments During a Rapid Response

Role of Patient’s Nurse. Once the rapid response team has responded to the patient room; usually less 3-5 minutes, the team begins treatment with specified roles for each team member. Once again, it is imperative that the patients’ own nurse stay with the patient to ensure report of situation of patient to include: patient history, events leading up to the rapid response, any pertinent labs or radiographic results, code status to include patient wishes for anything specific to be held such as intubation, CPR, defibrillation. The patients’ nurse also should name what treatments have been enacted on the patient and the patient response to said treatment. The other members of the rapid response team will perform their duties according to their specialty.

Role of Physician. The physician in charge of the rapid response team will review the report from the patient’s nurse to include pertinent history of the patient and the immediate problem at that given time. The physician will do a detailed assessment and give appropriate orders for treatment, and reassess once those orders are carried out. At times there are more than one physician at the scene of the rapid response, so it is important to know which physician is in giving orders for treatment; this is for documentation purposes as well as which physician to ask for assist with certain treatments during the rapid response situation (e.g. asking the intensive care physician for assistance in placement of a central line due to inability to obtain reliable peripheral intravenous access to administer vasopressor agents).

Role of Respiratory Therapist. The respiratory therapist will assess the respiratory status of the patient to include a respiratory history. Also assessed are things like if the patient is on home oxygen, continuous positive airway pressure (CPAP), bi-level positive airway pressure (BIPAP), history of chronic obstructive pulmonary disease and or pneumonia, and the patient’s ability to clear his or her airway by themselves. The respiratory therapist will assess the patient for respiratory rate, rhythm, pattern, lung sounds, and SPO2 of the patient. The respiratory therapist will also assist with ventilation and perform arterial blood gas analysis of patient if warranted and ordered.
from the physician. The respiratory therapist will administer treatments such as oxygen if not already done, respiratory treatments such as albuterol, dual nebulizer treatments, as well as assess the respiratory status of the patient when these treatments are completed. The respiratory therapist will also be responsible to start the patient on bi-level positive airway pressure assistance or prepare for endotracheal intubation, and assist the physician with the endotracheal intubation. It should be noted that in some hospitals, respiratory therapists are the ones that are performing the endotracheal intubations.

**Role of the Rapid Response Nurse.** The rapid response nurse, who is usually an intensive care nurse, will assess the patient to include most recent vital signs, the most recent labs and medications given, blood glucose just to name a few. The rapid response nurse should also be there to put the patient on a cardiac monitor if not already monitored and monitor the patients’ rhythm. This could be very important, especially if there is a change in the rhythm, and this rhythm change is the underlying reason for the change in patient condition (for example if a rhythm changed from normal sinus rhythm to atrial fibrillation with a rapid ventricular response). The rapid response nurse will also ensure that there is appropriate intravenous access, give intravenous medications per physician order/protocol, receive other orders from the rapid response physician and enact those orders.

**Role of the Pharmacist.** The clinical pharmacist will be on standby to ensure that any medications needed for the patient are readily available, and also can assist with verification of compatibility of medications.

**The Role of the Supervisor.** The administrative supervisor is vital for ensuring that there are not unwarranted people in the patient area who are not pertinent to the patient at that time and for coordinating care and for transfer to the intensive care unit should that need arise.

**Other Team Members.** Other possible team members are the nurse manager of that floor. This person gives information and assists with family who may need emotional support and other information necessary to give consent or to withhold care. Personal care assistants can be a great help during this time to assist with positioning of the patient and to help with running labs, assisting with transferring the patient to the intensive care unit if needed and to assist with CPR should the patient deteriorate to that point that the patient experience cardiopulmonary arrest.

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**Resolution or Escalation of the Rapid Response**

Once the rapid response has begun and treatment ensured, the process can last anywhere from five minutes to over an hour (although this is in an extreme case). There are usually a few ends to a rapid response situation and they will be listed here:

1. The patient will stabilize well enough to the point that he or she will be kept on the same nursing unit and continue with the same nursing care; albeit with maybe a little closer monitoring. An example of this may be when a rapid response is called on a patient for an extreme hypoglycemic event. After the blood glucose has been stabilized there is no need to move the patient at that time as that patient has recovered; albeit that patient will probably have his blood glucose monitored more closely or have a dose adjustment of his oral glycemic med or insulin.

2. Or that the patient on a medical-surgical nursing unit will be transferred to an intermediate care unit or a step down unit for closer monitoring and a slight increase of patient care. An example of this is when a patient admitted for community acquired pneumonia to a medical surgical floor has a rapid response called due to an increased shortness of breath or dropping oxygen saturation. This may happen when the patient needs increased oxygen, non-invasive pressure support by way of continuous positive airway pressure (CPAP) or bi-level positive airway pressure (BIPAP). It should be noted that only 15.9% of hospitals have a step down or intermediate care unit (AHA 2014).

3. Or that the patient may need to be transferred to the intensive care unit. This may happen for one of two reasons. The first reason is the patient deteriorates into having a full respiratory and/or cardiopulmonary arrest and survives. When this happens this patient will need an emergent transfer to the intensive care unit; but only after it has been deemed that the patient is relatively stable enough for transfer. The second reason is when it is believed that the patient will further decompensate and need further emergent care that current nursing unit or an intermediate care/step down unit can accommodate. In either case of transfer, the nurse currently taking care of the patient should accompany the patient to the unit; the ICU responding to the rapid response may not always be the nurse to assume care for that patient once he has been transferred.

4. The last scenario is that the patient either experiences a complete cardiopulmonary arrest or does not survive, or that it is decided by the patient and/or family of the patient that the patient should be made comfortable and no escalation of care will be made. This is probably one of the most difficult decisions that are made by the patient/family. At this time the patient will either be kept on that unit or possibly be transferred to a hospice unit.

It is recommended that the patients’ own primary care provider be notified of the change in the patients’ condition as well as the rapid response, treatments given and the patient outcomes. This update can be given in SBAR format for brevity and conciseness of information. With SBAR, the information is brief and to the point when dealing with the patient.

The acronym SBAR is:

- **S** - situation at the time of the rapid response,
- **B** - background of the patients’ pertinent history and events leading up to the rapid response,
- **A** - assessment- very brief and focused assessment of the patient,

The person whom a rapid response has been called who is not an inpatient such as one who is there for outpatient testing or for that person who is a visitor or staff will need to be taken to the emergency room and be taken by the rapid response team members. Only when the rapid response team has successfully given report should that patient be handed over to the emergency department staff.

**Documentation During and After the Rapid Response**

Documentation of the rapid response is usually done both during the actual event by a recorder; usually a registered nurse, and that information is usually transferred onto a formal rapid response treatment form after the situation has calmed down to allow for documentation to occur. These rapid response forms are usually preprinted with various spaces for documentation with spaces for the recorders signature and the physician signature. Documenting the events of a rapid response as with a code blue are just as important as with any other documentation in nursing. It is important for a couple of reasons. The first reason is that the rapid response form acts as an order
Setting Up Rapid Response Program

For the nurse who is reading this and works where there is no rapid responder program, there may come a time, and soon, when your hospital sets up a rapid response program. When they do, here are a few things that they may want to consider when setting up the program.

1. Involve everyone in the education process. Of course the Emergency department and intensive care units should probably have the lead roles for formulating the protocols, procedures and such, but don’t forget about ancillary departments; especially in the education phase. Why do you ask? Because a lot of rapid responses happen in places totally not expected such as: the gift shop, cafeteria, as well as entrances to and from certain places like the bathrooms. One should also consider the uniqueness of the health care organization in which the rapid response team will be responding to. Just because a rapid response team does something one way in another hospital doesn’t mean it will work for your facility.

2. When setting up the program, consider skills, communication abilities and attitudes as well as which members would work well together.

3. Encourage the team that, “when in doubt”, call the rapid response. When starting out a new rapid response program, staff members will need to be encouraged to call a rapid response, and if (or when) one is called when really not needed to not chastise or belittle the person who called it. There will be a learning curve for everyone involved. One way to help ensure that a rapid response is rightly called is having something attached to the employee badge as a reminder of the main criteria for calling a rapid response.

4. Ensure that relationships are fostered between departments during the implementation phase of the rapid response team.

5. Make sure that follow up is done to see how many rapid responses are done, and to see patient outcome. It may also be a good idea to see the statistical data versus the number of code blues in the facility; especially once the program has been in place for a few months.

6. It may be a good idea to use the SBAR form of communication in a rapid response situation. SBAR could prove to be very useful when the nurse is giving a report to the physician(s) upon arrival in to the rapid response. The SBAR is a verbal form of report that was detailed earlier and is given orally to this physician.

New Facets of Rapid Response on the Horizon

In conclusion, whether you are new to the rapid response paradigm or your hospital has been doing rapid response for years, here are some new things going on with rapid response teams and the movement itself.

The first and foremost newer thing is the development of an International Society of Rapid Response Systems (ISSRS). This international organization is made up of Doctors, nurses and respiratory therapists whose purpose is for improving the ability of hospitals to detect and respond to the deteriorating patient and decrease in hospital mortality and morbidity (ISSRS 2014). They hold a major international conference every year.

Newer innovations in our country have included things like having participation from family members when calling a pediatric rapid response. Another innovation is where a hospital has not implemented just one rapid team, but several teams for different things like burns, strokes, ST elevation myocardial infarction, and more; depending on the needs of the patient.

Newer research is also helping to identify the need for standardizing the parameters in connection with the risk of deterioration. Take for example one study done in New Zealand by Hereford et al., (2013). In this study, physiological parameters were studied in all New Zealand Public Hospitals to ascertain which patient was at risk of clinical deterioration based on physiological parameter that were measured. The parameters that were measured were: vital signs, urine output, consciousness, oxygen saturation and oxygen delivery. What the researchers found was there was that there were too many variables used in the criteria of clinically deteriorating patients who needed a rapid response called and that a more standardized criteria may be of benefit in the early detection of patients needing interventions.

The processes, guidelines, protocols and members of a rapid response team may change. But the most important thing will remain as a single goal for that team; to continue to give safe patient care.

References


American Heart Association 2015. Statistics on Code Blues http://www.heart.org/HEARTORG/General/Cardiac-Arrest-Statistics_UCM_448311_Article.jsp


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Riverside County Regional Medical Center Department of Nursing Protocol for Rapid Response team. (2008).

Robinson Memorial Hospital: Policy and Procedure for Rapid Responder Team (2013).


Wittenauer, J. (2014). Personal Quote/Observation of Rapid Responses at Place of Employment

Additional Resources

Agency for Healthcare Research and Quality: www.ahrq.gov

ANCC Magnet Recognition Program: www.strategiesformunsemanagers.com

Institute for Healthcare Improvement: www.ihi.org

## Appendix A

### Sample Rapid Response Team Record

<table>
<thead>
<tr>
<th>Date:</th>
<th>Room # / Location:</th>
<th>Time Called:</th>
<th>Arrival Time:</th>
<th>Event Ended:</th>
</tr>
</thead>
</table>

### Primary Reason for Call:
- [ ] HR less than 40
- [ ] SBP less than 90 mmHg
- [ ] RR less than 8
- [ ] SpO₂ less than 90%
- [ ] Acute Significant Bleed
- [ ] Failure to respond to tx
- [ ] Staff concerned / worried
  Specify: ____________________________________________
- [ ] HR greater than 130
- [ ] Acute Mental status change
- [ ] RR greater than 24
- [ ] FiO₂ 50% or greater
- [ ] Seizures

### Recommendations / Interventions:

#### Airway / Breathing:
- [ ] Oral Airway
- [ ] Suctioned
- [ ] Nebulizer Treatment
- [ ] Intubated
- [ ] NPPV
- [ ] Bag Mask
- [ ] O₂ Mask / Nasal
- [ ] ABG
- [ ] CXR
- [ ] No Intervention

#### Circulation:
- [ ] IV Fluid Bolus
- [ ] Blood
- [ ] EKG
- [ ] CPR
- [ ] Defibrillation
- [ ] Cardioversion
- [ ] No Intervention

### Medication(s):

____________________________________________________
____________________________________________________

### Other Interventions

Specify: ____________________________________________

____________________________________________________

### Outcome:
- [ ] Stayed in room
- [ ] Transferred to ICU
- [ ] Transferred to SDU
- [ ] Other: ___________________________________

[ ] Notified Physician: ____________________________

(name)

Time: ____________________________

### Assessment:

Temp _______ BP _______ HR _______ RR _______ SpO₂ _______ GCS _______

____________________________________________________
____________________________________________________

### Background:

____________________________________________________
____________________________________________________

### Assessment:

#### Temp _______ BP _______ HR _______ RR _______ SpO₂ _______ GCS _______

____________________________________________________
____________________________________________________

### FOLLOW-UP REPORT:

____________________________________________________
____________________________________________________

Signature: ____________________________ Date/Time: ____________________________

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**DO NOT WRITE BELOW THIS LINE**

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*MISSOURI BAPTIST MEDICAL CENTER*

**RAPID RESPONSE TEAM RECORD**

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*WHITE - Chart*

*CANDARY - PI Department*