

Rapid response system

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Rapid response is a strategy to identify deteriorating patients and enact interventions before more serious deteriorations. For example, [Between the Flags](#) is a rapid response system program that has been implemented in NSW. Between the Flags has led to a reduction in cardiac arrests in NSW.

[Hypoxia](#), hypotension and reduced mental state make up the majority of rapid responses, followed by alterations in the other vital signs. In this podcast, you will also learn about the initial approach to take and how to follow through as a junior doctor. Assess your ABCD's and resuscitate simultaneously. Escalate if needed.

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About Dr Luke Collett

Dr Luke Collett is an ICU Clinical Fellow at Royal North Shore Hospital. He completed his [ICU](#) clinical training in 2016, after separate diversions into Emergency Medicine and Infectious Diseases. Furthermore, Luke recently returned from a fellowship year in Severe Respiratory Failure and ECMO at Guy's and St Thomas' Hospitals in London.

Luke is a keen educator. For instance, he is a trained simulation instructor and faculty on a number of courses. Also, Luke has previously run the MET calls workshop at the [NSW Pre-Intern Conference](#).

Rapid response system

With Dr Luke Collett, Intensive Care Fellow, Royal North Shore Hospital, Sydney, Australia

Introduction

Rapid responses were initiated as a strategy to identify deteriorating patients and enact interventions before more serious deteriorations. In NSW the Between the Flags program for calling rapid responses has led to a reduction in cardiac arrests.



1. Common rapid responses

- Hypoxia, hypotension and reduced mental state make up the majority of rapid responses, followed by alterations in the other signs (heart rate, resp. rate, etc).
 - Common underlying aetiology:

- Sepsis
- Pulmonary oedema and arrhythmias such as atrial fibrillation

2. Initial approach

- Assess your ABCD's and resuscitate simultaneously
 - Airway
 - Breathing
 - Circulation
 - Disability (and blood sugar levels - BSL)
- As you run through this schema consider three important questions:
 - Should I be escalating this?
 - What basic investigations can I initiate?
 - What is the underlying pathology driving this?

Case 1

It's after-hours and you receive a rapid response for a 78-year-old male, post-operative day zero neck of femur (NOF) fracture repair. He is back on the wards and his blood pressure is 85/60.

1. What can you do over the phone?

- Assess how critical the situation is
 - What are the other vital signs?
 - What is his baseline blood pressure? Is this an acute deterioration?
- Establish an effective working environment
 - Ask the nurse to meet you at the patient bedside with their notes, and additional equipment that you want
 - Initiate early bedside investigations (e.g. an ECG, blood sugar level, formal Glasgow Coma Scale (GCS))

2. What are the first things you want to know when you arrive at the patient?

- Perioperative course, how long has it been since the operation?

- Was there a lot of blood loss?
 - If this is not known, ask to see the anaesthetic chart
- Less urgently consider: how long were they fasted, did they get their usual medications including anti-hypertensives
- Differentials (can be classified into four causes of shock):
 - Hypovolemic causes, fasting or bleeding
 - Cardiogenic causes, arrhythmia (example atrial fibrillation)
 - Vasodilatory causes, infection or spinal anaesthetic
 - Less commonly, obstructive causes

3. As the first responder, the nurse tells you the patient is hypotensive and tachycardic (110bpm) but otherwise the vitals are within normal limits. When you examine him, his hands are cool to touch. What is the next step in your assessment and what investigations would you consider?

- Assess and resuscitate as per your ABCDE framework
 - Airway
 - Breathing
 - Circulation: Does this feel like cool shock? Does this feel warm like vasodilation secondary to sepsis? Is he in sinus rhythm or is this an arrhythmia?
 - Lay patient flat, confirm blood pressure (BP)
 - Get IV access:
 - Bloods including
 - Full blood count (FBC)
 - Urea Electrolytes and Creatinine (UEC)
 - Venous blood gases (VBG) or Arterial blood gases (ABG)
 - Fluid bolus
 - ECG
 - Disability: Is he maintaining their GCS?
 - Environment: Assess the wound for bleeding. Are there any drugs/blood products that the patient might be having a reaction to?
 - Remember - should I be escalating this?

4. You have run through the ABCDE schema and you're still waiting for the rest of the team. The blood pressure continues to fall, its now 75/50 and he getting more drowsy. What should you do?

- Call a code blue
- Continue treating

5. The code blue team arrive, what do you hand over?

- Be succinct
- You can use the ISBAR mnemonic to transfer critical information
 - Identify self, Situation, Background, Assessment and Recommendation
- A summarised ISBAR would be:
 - Situation: Worsening hypotension in a 78 year old male, 6 hours post surgery for NOF fracture
 - Assessment: Cool and tachycardic, wound dry, I don't think he is bleeding, we have given 250ml of fluid, his blood pressure is worsening and he is now drowsy

6. What is the role of the junior doctor once the rapid response team has arrived?

- You can be very useful:
 - Provide insight into the patient's baseline
 - Obtain IV access
 - Ensure there is a cross match
 - Call other treating teams
 - Stay and learn

7. What would you do if there was a respiratory cause of their rapid response instead?

- ABCDE Schema and the three important questions (escalating / begin basic investigations / consider what is the underlying pathology)
- Consider a mobile chest X-ray

Case 2

You get a call from the Urology ward. A patient is having a seizure.

1. How do you approach this?

- ABCDE Schema, ensure a Code Blue call has been activated
- Airway:
 - Ensure there is a patent airway with jaw thrust, Guedel's or nasopharyngeal airway
 - Put the patient on their side in the recovery position
- Breathing:
 - Look, listen and feel
 - Check the saturations and respiratory rate
- Circulation:
 - Check the heart rate and blood pressure
 - Identify if there is IV access
- Disability:
 - Assess GCS, often the stimulation of providing an airway will help illicit this
- Environment:
 - Check the BSL
- Escalate - ensure a code is called
- Begin basic investigations, think of a cause
- Treatment: Consider benzodiazepines, but most seizures will terminate within five minutes, so in general, wait. If you are considering initiating treatment ensure you can you deal with the complications which can arise, such as loss of airway

Take home messages

- Stay calm
- Step up
- Do the initial ABCDE assessment
- Stay once the ICU team arrive to value-add and learn

References

- Jones D et al. Medical Emergency Team syndromes and an approach to their management. *Critical Care*. 2006. 10(1): R30
- Gaieske D, Mikkelsen M, Parsons. Definition, classification, etiology and pathophysiology of shock in adults. Up to Date, Feb 2018

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Related Podcasts

- [The ICU consult](#)
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