Recognition and Early Management of Acutely Ill Patients

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Clinical Skills Simulation Team
Aims & Learning Outcomes

The aim of this module is to describe and apply the airway, breathing, circulation, disability and exposure (ABCDE) approach to acutely ill patients.

The learning outcomes are to:

- Describe the clinical assessments of each element of the ABCDE approach.
- Describe the appropriate methods of oxygen and fluid delivery to acutely ill patients.
- Relate knowledge gained to case based scenarios.
- Understand the importance of SBAR when referring acutely ill patients.
- Evaluate own learning and recognise how improvements can be made.
Introduction
The General Medical Council expects that by qualification junior doctors will be able to provide immediate care in medical emergencies; specifically that the junior doctor will be able to: ‘Assess and recognise the severity of a clinical presentation and a need for immediate emergency care.’ (Tomorrows Doctors 2009)

Acutely ill patients are best approached using an ABCDE assessment in conjunction with a targeted history and examination in order to reach a diagnosis so that definitive treatment can be administered.

A: AIRWAY
B: BREATHING
C: CIRCULATION
D: DISABILITY
E: EXPOSURE
Bedside Assessments of Acutely Ill Patients

The clinical management of acutely ill patients requires that life threatening problems are immediately addressed whilst a diagnosis is sought so that definitive treatment can be administered.

The ABCDE approach and diagnostic synthesis are complementary and simultaneous processes (see figure on the next slide). Junior doctors can co-ordinate these activities by proceeding in a step wise fashion.
The ABCDE approach and diagnostic synthesis should be simultaneous and complementary processes.
Step 1: Initial Assessment

Much of the ABCDE assessment can be accomplished within moments of arrival at the bedside by observation of the patient and their charts.

Offering a handshake is a good way to start the bedside assessment, not only will this provide clinical information about the level of consciousness, airway patency and peripheral perfusion but will also reassure a potentially frightened and distressed patient.

Diagnosis requires a focussed history, examination and investigations – history from the patient may be limited and may need to be supplemented by information obtained from the bedside nurse, medical notes and relatives.

The ABCDE approach requires that concerns regarding each element of this bedside assessment have to be addressed before proceeding to the next element.

For example, an obstructed airway must be opened before breathing is assessed.
Step 2: Airway Assessment

Complete airway obstruction is very rare (patients usually dies within minutes) but partial airway obstruction is quite common and can be recognised by noisy breathing such as snoring or gurgling and evidence of increased work of breathing such as intercostal recession.

The commonest cause of partially obstructed airway is a reduced level of consciousness (due to reduced airway muscular tone, loss of protective airway reflexes, principally the gag and cough reflexes, retention of oropharyngeal secretions and tongue mal-position).

A partially obstructed airway can be relieved with simple manoeuvres such as jaw thrust or a chin lift. Airway adjuncts such as oropharyngeal or nasopharyngeal devices can also be useful.
Step 3: Breathing Assessment

Begin by counting the respiratory rate, breaths per minute (bpm). Increased respiratory work commonly accompanies acute illness as a result of an increased metabolic rate and oxygen consumption. This may lead to respiratory distress, signs of which include: inability to complete sentences, high respiratory rate, diaphoresis, accessory muscle use and cyanosis.

Focussed clinical examination including tracheal palpation, percussion and auscultation may uncover the diagnosis. (Tracheal deviation-tension pneumothorax, hyper-resonance-tension pneumothorax, dull percussion note-pleural effusion/empyema, wheeze, silent chest-acute severe asthma, left ventricular failure, diminished or bronchial breath sounds-pneumonia)
Step 3: Breathing Assessment

High flow oxygen should be administered to all acutely patients the effects of therapy should be assessed using pulse oximetry and the target oxygen saturations should be between 94% and above.

The appropriate oxygen delivery device to use is a oxygen mask with a reservoir bag. It is vital that the reservoir is kept inflated at all times this is usually achieved by setting the flow rate of oxygen to 15 L/min. This mask will usually deliver an inspired oxygen concentration (FiO₂) of 60-85%
Step 4: Circulatory Assessment

Begin by assessing the radial pulse, beats per minute (bpm), rhythm and character. Attach cardiac monitoring if available. Note the blood pressure.

Clinical signs that are common to hypovolaemic, obstructive and cardiogenic shock include:

- Confusion or agitation
- Cold extremities
- Reduced capillary refill
- Tachycardia
- Absent or small volume peripheral pulses
- Hypotension
- Oliguria
Step 4: Circulatory Assessment

The jugular venous pulse may be useful in distinguishing between hypovolaemic states (low) and cardiogenic or obstructive shock (elevated). Circulatory features of septic shock include warm peripheries (vasodilatation) and bounding pulse.

With the exception of cardiogenic shock, complicated by pulmonary oedema, the management of shocked patients invariably requires the administration of intravenous fluid.

Peripheral cannulae can usually be inserted into antecubital fossa or external jugular veins whilst central lines can be into internal jugular, subclavian and femoral veins. Very rarely venous access may require cut-down approach or an intraosseous approach may be needed if venous access cannot be obtained at all.
Step 4: Circulatory Assessment

Sizes of peripheral cannula are determined by gauge (12 largest, 14, 16, 18, 20, 22, 24 smallest).

Poiseuille’s law states that flow is inversely related to the length of the IV catheter and directly related to its radius to the fourth power.

Therefore flow fastest down short cannula with large diameter.

Therefore two 16-gauge lines are recommended for resuscitation.

Administer intravenous fluids if hypotensive. Bolus of 500 ml of crystalloid (containing sodium in the range of 130-154 mmol/L) over 15 minutes. (NICE IV Fluid Therapy Guidelines 2013).
Step 5: Disability Assessment

**Disability** refers to neurological status, relevant clinical examination would include assessment of the level of consciousness, focal and localising neurological signs, pupillary reflexes and signs of meningism.
Step 5: Disability Assessment

Level of consciousness can be rapidly assessed using the AVPU method.
Step 6: Exposure Assessment

**Exposure** is a prompt to ensure the body is examined as a whole. Paying particular attention to wound sites or other injuries on the body. During examination, being mindful of environmental temperature and potential adverse effects of cooling (shivering causes increased metabolic work and contributing to further cardiovascular decompensation).

Both body temperature and bedside blood glucose levels should be assessed.
Step 7: Diagnostic synthesis, investigation and definitive management

Once diagnosis is obtained and/or the causes of deterioration understood, definitive treatment can be started.

This may require transfer of the patient to the operating theatre, interventional cardiology laboratory, endoscopy suite, intensive care unit or high dependency unit.

Regardless, transfer will need to be conducted by trained personnel and the proposed management carefully communicated to the patient and those close to the patient.
Referral of Acutely Ill Patient using the SBAR Approach

Following the bedside assessment it is likely that the junior doctor will need to discuss further management with a senior colleague. The NHS Institute for Innovation and Improvement has recommended the Situation, Background, Assessment and Recommendation (SBAR) approach for such communications.

**SITUATION**
- Identify yourself (name, role, location)
- Confirm the identity of the person you are speaking to
- Identify the patient (name, age, sex, and location)

**BACKGROUND**
- Relate the history
- Date of admission
- Diagnosis
- Management
- Describe the current interventions

**ASSESSMENT**
- State what you think is happening
  - e.g. “I think the patient has septic shock secondary to pneumonia”

**RECOMMENDATION**
- State the request
  - e.g. “I need you to see this patient urgently; please come to the ward immediately”
Recognition & Early Management of Acutely Ill Patients
Case Example 1

Acutely Ill Patient 1: Septic Shock

Mr John Jones
### Case Example 1

### Patient Information

<table>
<thead>
<tr>
<th><strong>Name</strong></th>
<th>Mr John Jones</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td>62 Years</td>
</tr>
<tr>
<td><strong>Weight</strong></td>
<td>75 kg</td>
</tr>
<tr>
<td><strong>Height</strong></td>
<td>175 cm</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td>Male</td>
</tr>
</tbody>
</table>

**Background**

*History of present complaint*

Mr Jones underwent a total knee operation two days ago. He now complains of a cough and being off his food. He responds to voice, respirations 20 bpm, sats 92% using nasal specs, pulse 90 bpm, BP 103/60 mmHg, temperature 38.5°C. A nurse wants you to review this patient as his National Early Warning Score is 7.

**Setting**

Orthopaedic ward, Llandough Hospital

**Patient Information**

*History*

Mr Jones is a type 2 diabetic and smokes 20 cigarettes per day. He takes bendroflumethiazide, simvastatin, and since the operation is receiving low molecular weight heparin and the usual post operative analgesia. He is allergic to penicillin.

*Medication*

*Allergies*
How would you manage this acutely ill patient?

Mr John Jones
**Case Example 1**

**Doctor:** I feel awful, I have been coughing and am off my food and feel sweaty.

**Doctor...is it normal to feel like this after an operation?**
Recognition & Early Management of Acutely Ill Patients

Case Example 1

Notes on the Management of Septic shock

If a patient has a confirmed or suspected infection and has 2 or more of the below:

- Signs and symptoms of infection from their NEWS chart
  1. Temperature > 38.3°C or < 36°C
  2. Heart rate > 90bpm
  3. Respiratory rate > 20 / min
  4. Acutely altered mental state

- or signs from their blood tests:
  5. White cell count >12 or <4 x 10^9
  6. High glucose > 12 g/dL

Begin the **SEPSIS 6!**
## Notes on the Management of Septic shock - Perform the sepsis 6

<table>
<thead>
<tr>
<th>Step</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>High flow oxygen via mask with reservoir bag</td>
</tr>
<tr>
<td>2</td>
<td>Take blood cultures (and other relevant cultures e.g. sputum sample)</td>
</tr>
<tr>
<td>3</td>
<td>Administer broad spectrum intravenous antibiotics as per hospital policy</td>
</tr>
<tr>
<td>4</td>
<td>If hypotensive administer 500 ml of crystalloid (containing sodium 130-154 mmol/L) over 15 minutes</td>
</tr>
<tr>
<td>5</td>
<td>Measure serum lactate (may be raised if septic) and haemoglobin</td>
</tr>
<tr>
<td>6</td>
<td>Measure hourly urine output (consider catheterisation)</td>
</tr>
</tbody>
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Call senior help!
Mrs Bronwen Thomas

Acutely Ill Patient 2: Acute Gastrointestinal Haemorrhage
### Case Example 2

#### Background

*History of present complaint*

Mrs Thomas has been admitted to hospital with a three week history of epigastric pain. An ECG, full blood count and urea and electrolytes have been performed. She responds to voice, respirations 20 bpm, sats 94%, pulse 110 bpm, BP 90/60 mmHg, temperature 37°C. A nurse wants you to review this patient as she now has a National Early Warning Score of 8.

#### Setting

Medical Emergency Admissions Unit, University Hospital Wales

#### Patient Information

*HistoryMedication

**Allergies**

PCP

Mrs Thomas has arthritis and takes ibuprofen PRN
How would you manage this acutely ill patient?

Mrs Bronwen Thomas
A. Introduce yourself with a handshake
   Provides clinical information about level of consciousness, airway patency and peripheral perfusion

B. Spend a few moments at foot of bed – inspect observation charts. Note breathing
   Assess respiratory rate, accessory muscle use and cyanosis. Attach pulse oximeter
   Administer high flow oxygen using a mask with a reservoir bag

C. Assess radial pulse; rate, rhythm, character and blood pressure. fluid balance, capillary refill, JVP
   Attach ECG monitoring. Auscultate / percuss heart and lungs
   Gain IV access. Administer IV fluids.

D. Assess consciousness
   Use AVPU. Note facial neurological signs

E. Examine body as a whole
   Perform gastrointestinal examination and per rectal examination.
   Order urgent blood and cross match
### Notes on the Management of acute gastrointestinal haemorrhage

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>1</td>
<td>High flow oxygen via mask with reservoir bag</td>
</tr>
<tr>
<td>2</td>
<td>Gain intravenous access</td>
</tr>
<tr>
<td>3</td>
<td>Administer IV fluids per NICE IV Fluid Guidelines 2013</td>
</tr>
<tr>
<td>4</td>
<td>Order urgent blood, CALL for help</td>
</tr>
<tr>
<td>5</td>
<td>Correct coagulopathy and haemostasis (endoscopic, surgical or angiography and selective arterial embolisation)</td>
</tr>
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Useful Resources


Useful Resources

Sepsis e-learning package (created by C Jefferies and C Kostov)
https://xerte.cardiff.ac.uk/play.php?template_id=428


SBAR tool:

http://www.institute.nhs.uk/safer_care/safer_care/Situation_Background_Assessment_Recommendation.html