Recognising and managing adult patients who are critically sick

**AUTHOR** Kate Allen, MSc, PGCE, BSc, RGN, is lecturer in critical care nursing, school of nursing and midwifery, University of East Anglia, Norwich.


The challenge of recognising the ward-based patient at risk of rapid deterioration is discussed frequently within the literature. As their role enables them to be in constant contact with patients, nurses are in a prime position to identify problems at an early stage with the use of systematic patient assessment. This means appropriate treatment can be initiated quickly, potentially saving the patient’s life.

The fact that some in-hospital cardiac arrests and patient deaths could be avoided has been recognised and discussed within the literature for nearly 15 years (Franklin and Matthew, 1994; Schein et al, 1990). It has also been suggested that more than half the patients admitted to intensive care units (ICU) receive suboptimal care before arriving on the unit (McQuillan et al, 1998), which again is associated with unnecessary deaths.

Such suboptimal care is frequently related to the ineffective management of relatively simple, fundamental aspects of care – the effective assessment and management of patients’ airway, breathing and circulation (McGloin et al, 1999; Neale, 1998).

To address these fundamental issues, nurses’ ability to recognise a patient’s deteriorating condition must be considered essential. In relation to the contemporary nursing role, all nurses should be able to perform and document an accurate, systematic and comprehensive assessment of their patients’ physical needs to adhere to their conditions of registration (Department of Health, 2000). It is imperative therefore that nurses in all settings are able accurately to assess and recognise patients who are at risk of becoming critically sick at an early stage, and to effectively manage the patient’s care until further assistance arrives.

**Systematic patient assessment**

Although nurses are familiar with assessment as a fundamental aspect of the nursing process (Yura and Walsh, 1967), accurate assessment of the potentially critically sick patient can be one of the most challenging roles to undertake (Stoy, 2001).

Unless a systematic approach is used the underlying problem and any supporting data may be missed.

Without necessarily being aware of it, nurses are continuously assessing patients during any contact to consider the numerous pieces of information presented from a wide range of sources. The challenge is to ensure that this potentially vast amount of data does not become overwhelming for the nurse.

As with any assessment, if it is to be useful it must be timely, accurate and comprehensive in order to ensure patients receive the treatment they need (Welch, 2000; Domiguez, 1997). The easiest way to ensure that this happens is to keep the method short and simple.

To use an approach that will already be familiar, divide the assessment into two parts. The first part, or initial survey, will indicate whether the patient’s condition is immediately life threatening. It only takes a few minutes to complete, and if the patient is found to be in immediate danger, the nurse can summon urgent assistance and the patient can be managed appropriately.

If no immediately life-threatening situation is found, the second part or secondary survey helps the nurse towards a more detailed recognition and assessment of the patient’s condition.

**The initial survey**

Using the A-B-C-D-E framework (McQuillan et al, 1998; Resuscitation Council UK, 2000; Smith, 2000) an initial survey can be completed in a few minutes. This assessment, which relies on the answers to five questions, clarifies whether the patient’s condition is immediately life threatening (Box 1). The questions are prioritised in this order because an obstructed airway kills more quickly than abnormal breathing, which has the potential to kill more quickly than a circulatory problem (Jevon, 2002) or a decreased level of consciousness.

**Airway**

In order to effectively assess the adequacy of a patient’s airway, the nurse must ascertain whether it is open and free of substances or objects. If the patient is responsive and talking, it is easy to determine that her or his airway is...
is clear. However, if the patient is unresponsive, the basic resuscitation airway manoeuvres of head tilt/chin lift (Fig 1) or jaw thrust (Fig 2) should be used to ensure the airway is patent.

If the patient’s airway is obstructed, urgent assistance should be called for and the problem managed using one of the following measures:

- The most likely cause of airway obstruction in an unconscious adult is her or his tongue (Safar et al, 1959). If a snoring sound is heard each time the patient tries to breathe, it is certain their airway is blocked. Basic resuscitation airway manoeuvres—head tilt/chin lift or jaw thrust—will minimise this;
- A gurgling noise normally means that the patient has fluid in the airway. This can be removed by gentle suction if equipment is available. This requires great care to ensure the tip of the sucker never goes further than can be seen, preventing trauma to the delicate oral mucosa or inducing vomiting. If a suction device is not available, the patient can be turned on to one side—facing towards the nurse to allow observation—to encourage the fluid to drain by gravity;
- If a solid object can be seen in the patient’s airway it is imperative to proceed with great caution. It may be possible to remove the object with forceps or by hooking it out with a finger, but an attempt to remove an object should only be made if there is no danger of pushing it further down the airway.

After assessing the airway and effectively managing any untoward findings, the next step in the initial survey can be undertaken.

Breathing

Again, if the patient is responsive and talking the breathing assessment is simple. If the patient is unconscious, the recommended procedure is for the nurse to position her or his head directly above the patient’s, turning to one side to look towards the patient’s chest. The nurse’s ear should be directly above the patient’s mouth and nose (Fig 3). By looking to see whether the patient’s chest is moving, listening to ascertain whether breath

**REFERENCES**


should be followed (Resuscitation Council UK, 2000), giving the patient two effective rescue breaths (Box 2).

After assessing for breathing and effectively managing any findings, the third step in the initial survey can then be undertaken.

**Circulation**

The next question to answer is whether the patient has a circulation. Once again if the patient is responsive, breathing and talking, this is an easy decision.

If the patient is unconscious, assess signs of circulation physically by feeling for a carotid pulse. At the same time look for other signs of life, such as movement of the feet or hands. Once again, this should take 10 seconds to be certain that the assessment is accurate without wasting any time.

If the patient does not have a pulse and is not breathing continue to follow the cardiorespiratory guidelines (Resuscitation Council UK, 2000) by giving chest compressions (Box 3).

A patient without a pulse will not breathe, but it is possible for a pulse to be sustained for a short time after breathing has stopped. It may therefore be necessary to provide rescue breaths for a patient without needing to perform cardiac massage – but never the other way round.

Even if the patient is in respiratory or cardiorespiratory arrest, it is suggested that the last two steps of the initial survey are undertaken, although it is likely these will be at the instigation of the cardiac arrest team leader.

**Decreased consciousness**

Any deterioration in the patient’s level of consciousness can be rapidly assessed using the AVPU scale:

- **A** The patient is fully ALERT and responds spontaneously;
- **V** The patient responds to VOICE;
- **P** The patient responds to PAIN;
- **U** The patient is UNRESPONSIVE.

Further to this, as hypoglycaemia can cause an acute alteration in the level of consciousness (Sheppard and Wright, 2000), this should be excluded by testing the patient’s blood sugar level.

If the patient’s blood sugar level is below 3mmol/L and she or he are assessed as being ‘P’ or ‘U’ on the AVPU scale, call for urgent medical assistance as it is likely that the patient requires intravenous administration of 50 per cent glucose solution.

**Everything else**

To ensure nothing vital has been missed, the last step in the initial survey is to undertake a visual top-to-toe check of the patient, looking for abnormal findings such as:

- Bleeding;
- Haematomas;
- Fractures;
- Rashes.

Ensure that anything about the patient’s condition that causes concern is noted, as this may be useful in the

---

**REFERENCES**


TABLE 1. EARLY WARNING SCORES FOR SECONDARY ASSESSMENT OF PATIENTS
DETECTING ADULT PATIENTS AT RISK OF FURTHER DETERIORATION

<table>
<thead>
<tr>
<th>SCORE</th>
<th>3</th>
<th>2</th>
<th>1</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Temperature (ºC)</td>
<td>&lt;35.1</td>
<td>35.1-38.4</td>
<td>&gt;38.4</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart rate (bpm)</td>
<td>&lt;41</td>
<td>41-50</td>
<td>51-100</td>
<td>101-110</td>
<td>111-129</td>
<td>&gt;129</td>
<td></td>
</tr>
<tr>
<td>Systolic blood pressure (mmHg)</td>
<td>&lt;71</td>
<td>71-80</td>
<td>81-100</td>
<td>101-199</td>
<td>&gt;199</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Respiratory rate (bpm)</td>
<td>&lt;9</td>
<td>9-14</td>
<td>15-20</td>
<td>21-29</td>
<td>&gt;29</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of consciousness</td>
<td>Unresponsive</td>
<td>Responds to pain</td>
<td>Responds to voice</td>
<td>Alert</td>
<td>Confused or agitated</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine output (over previous 2hrs)</td>
<td>&lt;20ml/hr</td>
<td>&lt;0.5 ml per kg/hr</td>
<td>Not measured</td>
<td>&gt;150ml/hr</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

(Based on Carberry, 2002; Sterling and Barrera Groba, 2002; Welch, 2000)

second part of the assessment.

Even if resuscitation measures have been required, the initial survey will take only a few minutes to complete. When followed accurately it enables either recognition and appropriate management of a patient in respiratory or cardiorespiratory arrest or the conclusion that a patient’s condition is not immediately life threatening. In the latter case, the second part of the assessment – the secondary survey – can be performed.

The secondary survey
This time the assessment involves answering only one question: is this patient’s condition giving cause for concern? If the answer is ‘yes’, the following observations must be recorded immediately:

- Temperature;
- Heart rate;
- Systolic blood pressure;
- Respiratory rate;
- Level of consciousness;
- Urine output.

When the results of these observations – all of which can easily be performed at the patient’s bedside – are available they must be awarded a score as shown in Table 1. This ‘early warning score’ (Goldhill, 1999; Stenhouse et al, 2000; Sterling and Barrera Groba, 2002) makes it easier to identify the patient who is at risk of further deterioration and therefore in need of medical assistance (Welch, 2000; Carberry, 2002).

If the total score is ≥ 4 then the patient needs to be seen within 10 minutes by senior medical staff so that appropriate treatment can be initiated to ensure it will result in an improvement in the patient’s condition within an hour (Smith, 2000).

When the secondary survey is repeated an hour later, the patient’s early warning score should be decreasing. To ensure that the improvement continues the secondary survey should be repeated at hourly intervals until the patient gives no further cause for concern.

However, if the patient’s condition has not improved and the score remains ≥ 4 then urgent medical advice at consultant level is needed and the following questions need to be considered:

- Should the patient be catheterised?
- Is the current treatment plan appropriate?
- Can further suitable treatment measures be added?
- What is the correct response in the event of the patient experiencing a cardiac arrest?
- Should the patient be referred to a critical care area?

Conclusion
The fact that some in-hospital patient deaths are avoidable and that fundamental aspects of care such as airway, breathing and circulatory assessment and management are not always effective are issues that require urgent attention from all disciplines within the team.

Nurses’ contemporary roles mean they are in a prime position to ensure that patient assessment and management are appropriate and effective at all points of the patient’s hospital stay.

While a completely foolproof system of assessment may never exist, the A-B-C-D-E format and the Early Warning Score system enable nurses to assess patients in a simple, timely, accurate and comprehensive manner.

The use of this format and system can lead to the early recognition of a critically sick adult patient and effective management of any problems.

However, they can only be truly successful in a clinical environment where the nurse-to-patient ratio allows both continuous patient observation and time for frequent assessment.

REFERENCES
