Using the ABCDE approach to assess the deteriorating patient


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None declared

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Aims and intended learning outcomes
The aim of this article is to outline each component of the ABCDE (airway, breathing, circulation, disability, exposure) approach to patient assessment, providing explanations for findings and proposed interventions. It also explores the use of a structured communication tool that can be used in the context of a deteriorating patient. After reading this article and completing the time out activities you should be able to:
» Outline the benefits of using a structured ABCDE approach to patient assessment.
» Describe the assessment strategies and observations used in each component of the ABCDE approach.
» Identify potential underlying causes and pathophysiology for abnormal assessment findings, and discuss appropriate interventions.
» Explain the procedure for summoning a response to a deteriorating patient within your area of practice.
» Understand how to use a structured communication tool to communicate ABCDE assessment findings to other members of the multidisciplinary team.

Relevance to The Code
Nurses are encouraged to apply the four themes of The Code: Professional Standards of Practice and Behaviour for Nurses and Midwives to their professional practice (Nursing and Midwifery Council (NMC) 2015). The themes are: prioritise people, practise effectively, preserve safety, and promote professionalism and trust.
This article relates to The Code in the following ways:
» It assists nurses to practise effectively by providing up-to-date information about the ABCDE approach to patient assessment.
» The Code states that nurses must maintain clear and accurate records, which is essential in monitoring and recording patients’ vital signs.
» It relates to The Code theme of preserving safety, since it emphasises...
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that nurses must work within the limits of their competence when providing interventions in response to abnormalities identified using the ABCDE approach.

» The Code emphasises the importance of offering help in emergency situations that arise in the nurse’s practice setting. The ABCDE approach can assist nurses to provide effective care in such situations, for example in the event of a deteriorating patient.

Introduction
The recognition of, and response to, deteriorating patients in hospital wards has gained the interest of clinicians, academics and policymakers for almost two decades, with the first article exploring the suboptimal care of deteriorating patients being published at the end of the last century (McQuillan et al 1998). Deteriorating patients are at risk of requiring unplanned critical care admission and increased mortality and morbidity (Calzavacca et al 2010, Trinkle et al 2011, Tirkkonen et al 2013). Strategies to support the recognition of, and response to, deteriorating patients have been conceptualised by Smith (2010) in the ‘chain of prevention’ (Figure 1).

Patient assessment and measuring vital signs are the main components of monitoring a patient, and are typically performed by nurses, nursing students and healthcare support workers (Smith and Aitken 2016). Track and trigger tools have been implemented to support the recognition of abnormalities in a patient’s vital signs. An example of such a tool is the National Early Warning Score (NEWS) (Royal College of Physicians 2012), which has been widely disseminated in the UK because it has a relatively robust evidence base in predicting patient deterioration (Prytherch et al 2010, Smith et al 2013). The NEWS is derived from six physiological parameters (vital signs) (Royal College of Physicians 2012):

» Respiratory rate.
» Oxygen saturations (SpO₂).
» Temperature.
» Systolic blood pressure.
» Pulse rate.
» Level of consciousness.

A score is allocated to each parameter as it is recorded; the more abnormal the result, the higher the score (range 0-3) (Royal College of Physicians 2012). It should be noted that the ‘trigger ranges’ displayed on the NEWS chart are slightly different from the ‘normal physiological ranges’, so these are not synonymous terms.

TIME OUT 1
With reference to the chain of prevention (Figure 1), review policies and guidelines in your local practice area to ensure you are familiar with the procedures for escalation and calling for help in the event of a deteriorating patient.

It is essential that healthcare practitioners have knowledge of physiological parameters and can demonstrate competency in measuring them (Steen 2010). While measuring vital signs is a fundamental aspect of monitoring a patient, there is evidence that nurses use a range of clinical information (clinical ‘cues’) to inform their decision-making (Hoffman et al 2009), suggesting that it is necessary for patient assessment to be more holistic than the measurement of vital signs alone. The ABCDE approach enables nurses to perform a holistic and systematic assessment of deteriorating patients that is underpinned by the following principles (Resuscitation Council (UK) 2015):

» Use the ABCDE approach to assess and treat the patient.
» In cases of major trauma, it may be appropriate to control catastrophic bleeding before proceeding to airway assessment; that is, use of a modified C-ABCDE approach.

Figure 1. Chain of prevention

(Smith 2010) Reproduced with the permission of Professor G B Smith
» Complete the initial assessment and re-assess regularly.
» Respond to life-threatening concerns before moving to the next part of the assessment.
» Assess the effects of treatment.
» Recognise when you need to call for help and escalate appropriately using a structured communication tool.

While the ABCDE approach has been conventionally used in acute care settings, the concept is transferable to any healthcare setting.

**General or preliminary assessment**

Before commencing a systematic assessment, the healthcare practitioner should perform a general or preliminary assessment of the patient and their surroundings. This may include the healthcare practitioner introducing themselves and stating their role, performing a risk assessment of their personal safety, and identifying any immediate environmental hazards (Steen 2010). They should perform hand hygiene according to local policy, and consider the need for any personal protective equipment, such as gloves.

As the healthcare practitioner approaches, they should observe the patient’s skin colour, posture, body habitus and non-verbal cues such as facial expression. Non-verbal cues may indicate distress, pain, anxiety and breathlessness (Rawles et al 2015). In addition, the presence of any paraphernalia around the patient, such as oxygen delivery devices, inhalers, hearing or visual aids, and mobility aids, may provide insight into their wider health status.

**TIME OUT 2**

Define and explain what is meant by an open question and a closed question, and provide three examples of when you might use each of these approaches during a patient assessment.

The healthcare practitioner should be mindful that while they are forming an initial impression of the patient, the patient will be forming an immediate impression of the healthcare practitioner as well; their demeanour, attitude and dress will all influence the patient’s perception of them (Douglas et al 2013). The healthcare practitioner should begin dialogue with the patient by asking an open question, for example ‘how are you?’. It is important to demonstrate active listening by showing genuine interest, offering encouraging comments or responses while the patient is speaking, and paraphrasing important points to clarify understanding of the patient’s concerns (Bickley 2016). A useful mnemonic that may assist healthcare practitioners when approaching a patient is (Douglas et al 2013):

» A – attitude: consider how you would feel if you were in the patient’s situation.
» B – behaviour: always treat the patient with kindness and respect.
» C – compassion: recognise the human story that accompanies each illness.
» D – dialogue: listen to and acknowledge the patient.

**Airway**

The airway is the passage between the lips and trachea (Steen 2010). An open and clear airway is essential because obstruction can quickly become life-threatening. Airway obstruction can be partial, where air entry is diminished and often recognised by noisy breathing, or complete, where there is no air entry or breath sounds (Jevon 2010). Compromise of the airway may be caused by:

» Central nervous system depression – normal protective reflexes are impaired and relaxation of the tongue and soft palate may lead to airway obstruction. Causes of this include head injury, stroke or drug overdose (Resuscitation Council (UK) 2015).
» Fluids and/or bronchial secretions – pooling of fluids within the airway such as blood, sputum or vomitus will cause partial obstruction, particularly if the patient’s conscious level is reduced (Resuscitation Council (UK) 2015).
» Inflammation – the patency of upper airway structures (tongue, pharynx or larynx) may be reduced by spasm, inflammation or oedema. Causes of this include infection and severe allergic reaction (anaphylaxis) (Jevon 2010).
Trauma – fractures to the facial bones, mandible or the larynx can cause significant airway compromise (Higginson and Jones 2009).

Foreign objects – if inhaled, loose teeth, caps, crowns, dentures or any other foreign object may partially or completely obstruct the airway (Steen 2010).

At the most simplistic level, a patient who is talking has a patent airway. During the assessment, the healthcare practitioner should take note of any abnormal sounds from the airway that could be associated with turbulent airflow and signal a partial airway obstruction. These sounds include snoring, gurgling, choking or stridor (Resuscitation Council (UK) 2015). It is important to be mindful that patients with airway obstruction may also display signs of respiratory distress. In particular, the healthcare practitioner should be vigilant for signs of paradoxical chest and abdominal movements (‘see-saw breathing’), which may indicate significant and life-threatening airway obstruction (Steen 2010).

Airway obstruction is a medical emergency and should be treated as such. Interventions should be guided by the cause and degree of the obstruction. Partial obstruction by central nervous system depression or inflammation may be improved by: appropriate positioning; simple manoeuvres, such as the head tilt-chin lift; or the use of airway adjuncts, such as an oropharyngeal or nasopharyngeal airway. Suction may be used to clear fluids or bronchial secretions (Steen 2010, Bowden and Smith 2017).

Breathing Abnormal findings within the breathing assessment may be caused by primary acute or chronic respiratory disease, or an alternative underlying cause that is not respiratory in origin, for example sepsis with metabolic acidemia. As such, a comprehensive assessment of the patient’s breathing is required to determine the adequacy of pulmonary ventilation and the effectiveness of gas exchange within the lungs.

Despite the importance of respiratory rate as an independent predictor of adverse patient outcomes, there is evidence that this vital sign is frequently recorded inaccurately (Rawles et al 2015, Badawy et al 2017). The patient’s respiration should be observed for one full minute and should include an assessment of the respiratory rate, depth and pattern.

While there is variation in the literature, the normal range for the adult respiratory rate is frequently cited as 12-20 breaths per minute (Nicol et al 2012). A rate of less than 12 breaths per minute is defined as bradypnoea and may be associated with head injury or drug toxicity, particularly opioids. It is important for healthcare practitioners to be particularly vigilant for bradypnoea in patients receiving opioid infusions, including patient-controlled analgesia. Conversely, a rate of more than 20 breaths per minute is defined as tachypnoea (Massey and Meredith 2010) and is commonly found in acutely ill patients or those with pain and/or anxiety (Cleave 2016). It should be noted that tachypnoea is often an early and discrete sign of deterioration and may precede changes in other vital signs (Badawy et al 2017). Shallow breathing is frequently observed in patients with tachypnoea; however, this may also be associated with inadequately managed pain.

The healthcare practitioner should observe the shape, expansion and symmetry of the chest wall. They should note the presence of surgical scars or any other abnormalities, for example a barrel chest, which is often associated with severe chronic respiratory disease (Massey and Meredith 2010). Chest movements should be symmetrical when both lungs are adequately ventilating. Asymmetry may be associated with pneumothorax, severe pneumonia or pleural effusion (Higginson and Jones 2009).

In health, normal breathing is relaxed, quiet and effortless, involving only the diaphragm and intercostal muscles (Levick 2010). The use of accessory muscles, such as neck, shoulder and abdominal muscles, indicates increased work of breathing and may be observed in patients
with respiratory distress (Steen 2010). An inability to speak in full sentences, in conjunction with other abnormal findings, indicates increased work of breathing. Patients with signs of respiratory distress should, where possible, be sat in an upright position to increase comfort and facilitate lung expansion.

**TIME OUT 3**

In relation to the monitoring of oxygen saturations via pulse oximetry, what factors could reduce the quality and accuracy of readings obtained, and why? Consider patient factors and environmental factors.

The measurement of oxygen saturations of haemoglobin via pulse oximetry ($SpO_2$) is considered an essential component of patient assessment, and should be monitored alongside other vital signs (Royal College of Physicians 2012). However, there are certain considerations when interpreting the $SpO_2$ result. For instance, while an $SpO_2$ >95% is usually considered normal (Nicol et al 2012), $SpO_2$ may be lower in patients with chronic obstructive pulmonary disease (COPD) because of chronic hypoxaemia. This is the rationale for the varying $SpO_2$ target ranges stipulated by the British Thoracic Society for patients receiving oxygen therapy: 88-92% for patients with COPD and other chronic respiratory disease; 94-98% for all other patients (O’Driscoll et al 2008).

In an emergency situation, where oxygen saturations cannot be obtained and the patient displays signs of respiratory distress, high-flow oxygen should be administered to treat life-threatening hypoxaemia, regardless of the patient’s respiratory history (O’Driscoll et al 2008). This should be administered using a non-rebreathing (reservoir) mask (O’Driscoll et al 2008). Patients who are severely hypoxaemic may also have cyanosis. Central cyanosis – a blue discolouration of the lips and tongue – may be observed in hypoxaemia when the $SpO_2$ is less than 90% (Douglas et al 2013). This may be accompanied by peripheral cyanosis – a blue discolouration in the hands, feet or ears – which is suggestive of reduced oxygen delivery to the extremities (Douglas et al 2013).

A definitive diagnosis of respiratory failure requires an arterial blood sample to be obtained. In critical care settings, these samples may be obtained by nurses from an arterial catheter. In the absence of an arterial catheter, medical staff, or nurses with advanced training, may obtain a sample from a direct arterial puncture. Arterial blood gas analysis provides comprehensive data related to gas exchange and acid-base balance, which can aid diagnosis and inform clinical decision-making (Adam et al 2017).

If a cough is present, the healthcare practitioner should assess its adequacy and ask the patient if the cough is productive. If the patient is expectorating sputum, it should be assessed for colour, consistency, quantity and odour. There are four main types of sputum (Douglas et al 2013):

- **Serous** – may be clear and watery (acute pulmonary oedema) or pink and frothy (alveolar cell cancer).
- **Mucoid** – may be clear or grey (chronic bronchitis or COPD), or white, viscid (asthma).
- **Purulent** – yellow sputum may be observed in acute bronchopulmonary infection or asthma. Green sputum indicates a longer-standing infection, or may be observed in patients with pneumonia, bronchiectasis, cystic fibrosis or a lung abscess.
- **Rusty** – sputum that is rusty red in colour is associated with pneumococcal pneumonia.

A patient who expectorates fresh blood or blood clots (haemoptysis) may have a serious underlying condition such as a pulmonary embolism, tuberculosis or lung malignancy (Bickley 2016). This should be escalated as a matter of urgency. If the patient has a weak or ineffective cough they may be at risk of sputum retention and associated hospital-acquired pneumonia (Bickley 2016). Healthcare practitioners should be mindful that inadequately managed pain, particularly in post-operative patients or those with chest wall injuries, can reduce the efficacy of the cough. In these circumstances, they should ensure that hydration is maintained to reduce the tenacity of the secretions, and should consider consulting a physiotherapist who...
may be able to assist the patient further with sputum clearance.

Normal air flow during pulmonary ventilation is quiet; adventitious breath sounds such as wheezing and crackles indicate pathological changes within the respiratory tract, causing turbulent airflow. Wheezing is a high-pitched, often expiratory, ‘musical’ sound associated with bronchospasm (Douglas et al 2013). This is a common finding in exacerbation of asthma or COPD. A wheeze can often be heard without respiratory auscultation using a stethoscope. Crackles are intermittent ‘popping’ sounds produced when small airways, collapsed by an increase in interstitial fluid, ‘pop’ open during ventilation (Bickley 2016). This is a common finding in acute pulmonary oedema and pneumonia. It is unusual to hear crackles without a stethoscope; however, this is possible in extreme cases.

An additional observation that may be required in patients who have asthma is the peak expiratory flow rate. This may be used to identify the severity of bronchoconstriction in an asthma exacerbation, as well as to evaluate the response to therapy, for example nebulised or inhaled bronchodilators (Scottish Intercollegiate Guidelines Network and British Thoracic Society 2014).

**Circulation**

Abnormal findings within the circulation assessment may be caused by primary acute or chronic cardiac disease, problems with circulating volume or loss of normal vascular tone (Adam et al 2017). Impairment of the circulation can lead to shock. Shock is defined as impaired delivery of oxygen and nutrients to the tissues, resulting in changes to cellular metabolism and, ultimately, organ dysfunction (Adam et al 2017). Shock is categorised as follows: cardiogenic, obstructive, hypovolaemic, distributive and neurogenic shock (Table 1) (Jones and Rushton 2012, Adam et al 2017).

**TIME OUT 4**

Drugs that influence heart rate are known as chronotropes. Identify medications that:

- Increase heart rate (positive chronotropes).
- Decrease heart rate (negative chronotropes).

A comprehensive assessment of circulation is required to determine the adequacy of cardiac output and tissue perfusion. Cardiac output is defined as the volume of blood ejected from the heart in one minute (Levick 2010). The healthcare practitioner should begin the circulatory assessment by palpating the patient’s radial pulse for rate, rhythm and volume. If the pulse feels irregular, it should be palpated for one full minute to accurately determine the rate. If the pulse is regular, it is acceptable to palpate for 30 seconds and double the result (Nicol et al 2012).

The normal range for the adult pulse rate is 60-100 beats per minute (Nicol et al 2012). A pulse rate of less than 60 beats per minute is defined as bradycardia (Jones et al 2010) and may be a normal finding particularly during sleep, in athletic patients, or as a

<table>
<thead>
<tr>
<th>Category of shock</th>
<th>Description</th>
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<tr>
<td>Cardiogenic</td>
<td>The left ventricle is unable to generate an adequate cardiac output in order to maintain tissue perfusion, despite adequate circulating volume (Jones and Rushton 2012). Possible causes include acute coronary syndrome, valvular heart disease, drug toxicity, cardiomyopathy, aortic dissection or myocarditis</td>
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<tr>
<td>Obstructive</td>
<td>Obstructive shock shares characteristics with cardiogenic shock; however, the reduction in cardiac output is caused by obstruction of the great vessels or the heart itself. Possible causes include pulmonary embolism, where blood flow from the heart into the pulmonary circulation is obstructed, and cardiac tamponade, where the heart is compressed by an excess of fluid in the pericardial space, leading to a reduction in ventricular filling and subsequent haemodynamic compromise (Laidler 2013)</td>
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<tr>
<td>Hypovolaemic</td>
<td>Hypovolaemic shock results from excessive fluid loss leading to organ hypoperfusion (Adam et al 2017). Causes include external or internal haemorrhage, vomiting, diarrhoea and severe burns</td>
</tr>
<tr>
<td>Distributive</td>
<td>Distributive shock is frequently associated with systemic dysregulated inflammation, which may result from sepsis or severe allergic reaction (anaphylaxis). The combination of peripheral vasodilatation and impaired function of the capillary endothelium results in a redistribution of fluid, loss of volume from the intravascular space, and an associated reduction in circulating volume (Adam et al 2017)</td>
</tr>
<tr>
<td>Neurogenic</td>
<td>Similar to distributive shock, neurogenic shock occurs as a consequence of reduced vascular tone, and associated peripheral vasodilatation as a result of a loss of normal sympathetic tone. This is caused by spinal cord injury above the level of the sixth thoracic vertebrae (Jones and Rushton 2012)</td>
</tr>
</tbody>
</table>
consequence of medication, for example beta-blockers (Resuscitation Council (UK) 2015). Extreme bradycardia, defined as a pulse rate of less than 50 beats per minute (Resuscitation Council (UK) 2015), can potentially lead to significant reduction in cardiac output. Possible causes include diseases of the heart and conductive system, severe electrolyte disturbance, and raised intracranial pressure as a result of traumatic brain injury or stroke (Resuscitation Council (UK) 2015).

A pulse rate greater than 100 beats per minute is defined as tachycardia (Jones et al 2010) and results from activation of the sympathetic nervous system in the context of exercise, pain, anxiety or medication, for example salbutamol (Levick 2010, Nicol et al 2012). Tachycardia may also reflect a compensatory response to a reduction in circulating volume. As such, a heart rate greater than 100 beats per minute at rest should not be ignored and always requires further investigation to identify the abnormality stimulating the tachycardia (Nicholson 2014).

The healthcare practitioner should also assess the patient’s pulse for regularity. If their pulse is irregular, further investigation is required to identify if this irregularity is caused by an arrhythmia (Nicholson 2014). This is achieved by commencing continuous cardiac monitoring or obtaining a 12-lead electrocardiogram, depending on the availability of equipment and local policy (Jevon 2010). An irregular heart rate may be caused by an arrhythmia such as atrial fibrillation.

The healthcare practitioner should also note the volume and character of the pulse. The volume of the pulse is influenced by several physiological factors including: the condition of peripheral vasculature; the volume of blood ejected by the heart from each contraction (stroke volume); and the contractility of the myocardium (Levick 2010). The pulse volume should be assessed to determine whether it is normal, weak or abnormally strong (Nicholson 2015). A weak or ‘thready’ pulse is a common finding in patients with reduced stroke volume and associated compensatory vasoconstriction, and causes include dehydration, hypovolaemic shock and cardiogenic shock (Douglas et al 2013, Goulden 2016). Conversely, an abnormally strong or ‘bounding’ pulse is associated with an increase in myocardial contractility, and causes include pregnancy, hypertension, anaemia, hyperthyroidism and sepsis (Douglas et al 2013, Goulden 2016).

Accurate measurement of blood pressure is an essential component of circulatory assessment. Blood pressure is an effective indicator of cardiovascular health and is determined by cardiac output, circulating volume and vascular tone (Jones et al 2010). The normal range for adult blood pressure is 90/60mmHg to 140/90mmHg (Nicol et al 2012). While both the systolic and diastolic blood pressure need to be measured and recorded, it should be noted that only the systolic blood pressure influences the patient’s NEWS. This is because a fall in systolic blood pressure is a stronger and more immediate indicator of acute deterioration and impending collapse than a fall in the diastolic blood pressure (Royal College of Physicians 2012).

A systolic blood pressure of <90mmHg is defined as hypotension. Hypotension is the clinical endpoint of untreated shock, regardless of the pathophysiology or cause. It is often a late sign of deterioration and frequently signifies decompensation as compensatory mechanisms fail. A systolic blood pressure of >140mmHg is defined as hypertension. Transient hypertension may be associated with physical or emotional stress or inadequately managed pain. Persistent hypertension may result from: primary diseases of the cardiovascular system; lifestyle factors such as smoking, suboptimal diet, substance misuse and excessive alcohol consumption; or neuroendocrine conditions.

In addition to the measurement of vital signs, there are other clinical indicators of tissue perfusion that should be considered when performing a circulatory assessment. These include observing the patient’s skin colour, feeling the temperature of their skin, and measuring their capillary refill time. This is achieved by applying pressure to one of their fingertips, held at heart level, for five seconds. Once this pressure is
released, colour should return in less than two seconds (Adam et al 2017). A capillary refill time of more than two seconds may be a normal finding in older patients or if the patient’s ambient temperature is cool (Jevon and Ewens 2012). However, it may also suggest that peripheral circulation is impaired (Resuscitation Council (UK) 2015). Capillary refill time is not considered a sensitive indicator alone and should be assessed in the context of other clinical findings.

Often, patients with a compromised circulation will appear pale, be peripherally cool to the touch, and have a delayed capillary refill time (Jevon 2010). However, patients with a compromised circulation as a result of peripheral vasodilatation (distributive shocks) may appear flushed and be warm to the touch, particularly if they have an elevated temperature cause by sepsis (Goulden 2016).

A comprehensive assessment of the patient’s fluid balance should also be performed, including measurement of their urine output. Urine output is one of the most reliable indicators of cardiac output, since adequate blood pressure ensures that renal perfusion and urine output are maintained (Jones et al 2010). An adequate urine output is considered to be 0.5mL/kg/hour (Resuscitation Council (UK) 2015). Where circulation is impaired and renal perfusion is reduced, urine output will fall below this, known as oliguria. Urinary catheterisation should be considered in the patient displaying signs of haemodynamic compromise to enable accurate measurement of urine output and to assess the patient’s response to treatment, for example intravenous fluid therapy.

In addition to urine output, other measurable losses should be considered, for example vomit, aspirate from a nasogastric tube, stomas or diarrhoea. Oral fluid intake and infusion therapy should also be recorded when assessing the patient’s fluid status. The healthcare practitioner should determine and assess the presence and patency of vascular access devices, and record a Visual Infusion Phlebitis score for patients with an existing vascular access device (Loveday et al 2014). Healthcare practitioners with the knowledge and skills to perform venepuncture and cannulation should consider the need for blood sampling and/or further vascular access during this component of the ABCDE assessment.

**Disability**

Assessment of disability involves evaluating the function of the central nervous system. A rapid assessment of the patient’s level of consciousness should be performed, and it is recommended that the AVPUC tool is used for this. The AVPUC tool is based on the AVPU tool. While the AVPUC tool is currently pre-publication, it appears in an upcoming revised NEWS guideline, and several healthcare organisations in the UK have already implemented it as a replacement for the AVPU tool (University College London Hospitals NHS Foundation Trust 2017). Using the AVPUC tool, the patient’s response to stimuli is assessed and recorded as follows:

» A – the patient is alert.
» V – the patient responds to verbal stimulus.
» P – the patient responds to painful stimulus.
» U – the patient is unresponsive.
» C – the patient presents with new confusion or delirium.

Using a stepwise approach, the healthcare practitioner should apply a range of stimuli to determine the optimal response from the patient. For example, if the patient responds to a verbal stimulus, it is not necessary to apply a painful stimulus. In this case, the patient is deemed to be responding to voice and ‘V’ should be recorded. If a painful stimulus is required, a trapezius squeeze (gripping and twisting a portion of the trapezius muscle in the patient’s shoulder) is recommended because this provides an effective central stimulus without the risk of injuring the patient (Adam et al 2017).

If the patient has a reduced conscious level, a more comprehensive assessment is required. This is achieved by using the Glasgow Coma Scale (Teasdale 2014) to systematically assess the patient’s eye opening, verbal response and motor
response, as well as assessing their limb power and pupillary accommodation reflexes.

**TIME OUT 5**

Review the three components of the Glasgow Coma Scale (Teasdale 2014). Explain to a colleague how the score is identified for each component.

A reduced conscious level may be associated with primary illness or injury affecting the central nervous system. Other non-neurological causes include hypoxia, hypotension, hypoglycaemia and the administration of sedating medications (Jackson 2016). Optimisation of the patient's airway, breathing and circulation should address disordered consciousness resulting from hypoxia and hypotension. To rule out hypoglycaemia as a contributing factor, the healthcare practitioner should consider the need to undertake bedside glucose monitoring (Jevon 2010). In addition, they should carefully review the patient's medication records to identify any drugs that may have caused the patient's conscious level to fall, for example opiates or benzodiazepines.

**Exposure**

While maintaining their dignity and temperature, the healthcare practitioner should expose the patient sufficiently to perform a visual top-to-toe inspection. They should observe for evidence of bleeding, which may be internal – indicated by abdominal distension or abnormal patterns of bruising on the abdominal wall – or external, from possible sources such as wound sites, wound drains, per rectum or per vagina. They should note the presence and location of rashes or skin changes that may indicate hypersensitivity reaction, and observe for any clinical signs suggestive of deep vein thrombosis, which includes a hot, painful, swollen calf (Bickley 2016). In addition, the healthcare practitioner should note if the patient is wearing anti-embolic stockings, and assess for peripheral or sacral oedema, which is a common finding in patients with heart failure.

The healthcare practitioner should measure and record the patient’s temperature. The normal temperature range is 36-37.2°C (Nicol et al 2012). A temperature greater than 37.2°C is termed pyrexia, while a temperature less than 36°C is defined as hypothermia (Nicol et al 2012). An abnormal temperature is a common finding in patients with infections and associated inflammation. Significant pyrexia (temperature more than 38°C) or hypothermia (temperature less than 36°C), in the presence of other abnormalities in the patient's vital signs, should raise suspicion that the patient may have sepsis (Dellinger et al 2013). In sepsis, the causative organism – bacteria, virus or fungus – triggers systemic inflammation which, when suboptimally regulated, leads to worsening tissue injury and organ dysfunction (National Institute for Health and Care Excellence (NICE) 2016). Sepsis is a significant cause of mortality and morbidity among patients in hospital (The UK Sepsis Trust 2017); therefore, the likelihood of this condition should be considered in any patient with evidence of deterioration (NICE 2016).

Table 2 provides a summary of the ABCDE approach to patient assessment, and the actions that the healthcare practitioner should undertake in each of its components.

**Communication and escalation**

On completion of the ABCDE assessment of the patient, the healthcare practitioner should document the findings, observe any trends in vital signs, and calculate the NEWS or appropriate equivalent score. The aggregate NEWS should determine the appropriate healthcare practitioner to whom the patient should be escalated, the frequency of further monitoring of vital signs, and the appropriate setting for the patient's ongoing care; for example, a general ward, high dependency setting or intensive care unit. To communicate the assessment findings to other members of the multidisciplinary team effectively, a structured communication tool should be used. One tool that is used in clinical practice is the SBAR framework (NHS Institute for Innovation and

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**KEY POINT**

To communicate the assessment findings to other members of the multidisciplinary team effectively, a structured communication tool should be used. One tool that is used in clinical practice is the SBAR framework.
Can any immediate interventions be recommended?

Using a structured communication tool such as the SBAR framework (NHS Institute for Innovation and Improvement 2008) has the potential to improve the quality of healthcare practitioner handovers and the consistency of information delivered in the context of a deteriorating patient. Pragmatically, a timely, clear and succinct handover is more likely to result in appropriate action because it leads to a ‘shared mental model’, whereby all healthcare practitioners have a shared perception of the clinical situation (McComb and Simpson 2013). This shared insight improves collaboration between various healthcare practitioners and has the potential to improve care and clinical outcomes for deteriorating patients (McComb and Simpson 2013).

**Conclusion**

A systematic patient assessment using the ABCDE approach supports early recognition of deteriorating patients, enabling early escalation and effective interventions. While this approach has been conventionally used in acute care settings, the concept is transferable to any healthcare setting. Healthcare practitioners should understand each of the components of the ABCDE approach. They should also be aware of normal and potentially abnormal findings, and be able to link these to possible underlying causes and pathophysiology. Effective communication in the context of a deteriorating patient is crucial, and healthcare practitioners should consider using a structured communication tool, such as the SBAR framework (NHS Institute for Innovation and Improvement 2008), in their clinical practice.

**TIME OUT 6**

Nurses are encouraged to apply the four themes of The Code (NMC 2015) to their professional practice. Consider how using the ABCDE approach to assess deteriorating patients relates to The Code.

**TIME OUT 7**

Now that you have completed the article you might like to write a reflective account as part of your revalidation.

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### TABLE 2. Summary of the ABCDE (airway, breathing, circulation, disability, exposure) approach to patient assessment

<table>
<thead>
<tr>
<th>Component</th>
<th>Action</th>
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<tbody>
<tr>
<td><strong>Airway</strong></td>
<td>Talk to the patient, beginning by asking an open question, for example ‘how are you?’ A patient who is talking has a patent airway&lt;br&gt;Note any abnormal sounds from the airway that might be associated with turbulent airflow and signal a partial airway obstruction. These sounds include snoring, gurgling, choking or stridor&lt;br&gt;Airway obstruction is a medical emergency – if this is suspected, escalate immediately</td>
</tr>
<tr>
<td><strong>Breathing</strong></td>
<td>Assess respiratory rate, depth and pattern&lt;br&gt;Observe the chest wall for shape, expansion and symmetry&lt;br&gt;Note the presence of surgical scars or any other abnormalities&lt;br&gt;Observe if the patient is using accessory muscles, such as neck, shoulder and abdominal muscles&lt;br&gt;Measure oxygen saturations (SpO₂) of haemoglobin via pulse oximetry&lt;br&gt;Observe for evidence of cyanosis&lt;br&gt;Is there a cough? Is this productive? If so, observe the sputum&lt;br&gt;Can you hear any adventitious sounds, for example wheezing? Consider the need for additional observations including peak expiratory flow rate</td>
</tr>
<tr>
<td><strong>Circulation</strong></td>
<td>Assess heart rate, rhythm and volume&lt;br&gt;Measure blood pressure&lt;br&gt;Assess skin colour and temperature&lt;br&gt;Measure capillary refill time&lt;br&gt;Record urine output&lt;br&gt;Review fluid balance&lt;br&gt;Assess the presence or need for a vascular access device&lt;br&gt;Assess the need for blood sampling&lt;br&gt;Assess the need for continuous cardiac monitoring and/or 12-lead electrocardiogram</td>
</tr>
<tr>
<td><strong>Disability</strong></td>
<td>Rapid assessment of the patient’s conscious level, for example using the AVPU tool&lt;br&gt;Assess the need for use of the Glasgow Coma Scale (Teasdale 2014)&lt;br&gt;Assess the patient’s limb power and pupillary accommodation reflexes&lt;br&gt;Check if there are any drugs in the patient’s medication records that might have caused their conscious level to fall</td>
</tr>
<tr>
<td><strong>Exposure</strong></td>
<td>Undertake a top-to-toe inspection – is there any evidence of bleeding, rash, bruising or swelling? Any abnormalities? Observe for evidence of deep vein thrombosis&lt;br&gt;Take the patient’s temperature – does this indicate pyrexia or hypothermia?</td>
</tr>
</tbody>
</table>


Call for reflective accounts

Submit a reflective account and be in with a chance to win a £50 book token!

We’re looking for reflective accounts based on CPD articles published in Nursing Standard in the past year. Submissions should be 800 words in length and follow the NMC’s requirements on reflective accounts:

- What was the nature of the CPD activity and/or practice-related feedback and/or event or experience in your practice?
- What did you learn from the CPD activity and/or feedback and/or event or experience in your practice?
- How did you change or improve your practice as a result?
- How is this relevant to The Code?

To find out more visit: journals.rcni.com/reflective-account
**ABCDE approach**

**TEST YOUR KNOWLEDGE BY COMPLETING THIS SELF-ASSESSMENT QUESTIONNAIRE 922**

1. What does the ‘K’ stand for in the ABCDE approach?
   a) Acute  
   b) Airway  
   c) Attitude  
   d) Assessment

2. Which of the following is not one of the physiological parameters in the National Early Warning Score tool?
   a) Systolic blood pressure  
   b) Respiratory rate  
   c) Diastolic blood pressure  
   d) Oxygen saturations

3. Compromise of the airway may be caused by:
   a) Inflammation  
   b) Foreign objects  
   c) Central nervous system depression  
   d) All of the above

4. Which of the following is the normal range for adult respiratory rate?
   a) 2-12 breaths per minute  
   b) 12-20 breaths per minute  
   c) 22-30 breaths per minute  
   d) 32-40 breaths per minute

5. Sputum that is rusty red in colour is most likely to be associated with:
   a) Pneumococcal pneumonia  
   b) Asthma  
   c) Cystic fibrosis  
   d) Acute pulmonary oedema

6. Which category of shock results from excessive fluid loss, leading to organ hypoperfusion?
   a) Distributive  
   b) Hypovolaemic  
   c) Obstructive  
   d) Neurogenic

7. One potential cause of an abnormally strong or ‘bounding’ pulse is:
   a) Dehydration  
   b) Cardiogenic shock  
   c) Sepsis  
   d) Vasoconstriction

8. Which of the following is not assessed as part of the Glasgow Coma Scale?
   a) Respiration  
   b) Verbal response  
   c) Eye opening  
   d) Motor response

9. In which component of the ABCDE assessment should the practitioner measure the patient’s temperature?
   a) Breathing  
   b) Circulation  
   c) Disability  
   d) Exposure

10. The SBAR framework should be used to:
    a) Measure the patient’s vital signs  
    b) Assess the patient’s conscious level  
    c) Communicate the findings of an ABCDE assessment to other members of the multidisciplinary team  
    d) Evaluate the quality of care provided

**How to complete this assessment**

This self-assessment questionnaire will help you to test your knowledge. It comprises ten multiple choice questions that are broadly linked to the article starting on page 51. There is one correct answer to each question.

- You can test your subject knowledge by attempting the questions before reading the article, and then go back over them to see if you would answer any differently.
- You might like to read the article before trying the questions. The correct answers will be published in Nursing Standard on 13 December.
- Subscribers making use of their RCNi Portfolio can complete this and other questionnaires online and save the result automatically.
- Alternatively, you can cut out this page and add it to your professional portfolio. Don’t forget to record the amount of time taken to complete it.

You may want to write a reflective account based on what you have learned. Visit rcni.com/reflective-account

This self-assessment questionnaire was compiled by Alex Bainbridge

The answers to this questionnaire will be published on 13 December

Answers to SAQ 920 on Understanding and meeting your legal responsibilities as a nurse, which appeared in the 15 November issue, are: