Numerous assessments exist in nursing. They are vital tools in day-to-day practice. The A-G assessment is becoming a commonly used tool in primary and secondary care settings. It integrates the procedure mandated for resuscitation and emergency situations. However, it is also useful for systematic baseline patient assessment and can improve patient mortality in hospital (Griffiths et al, 2018).

A-G covers: airway, breathing, circulation, disability, exposure, further information and goals (Benson, 2017). Its systematic approach has been proven effective in identifying deteriorating patients or those at risk of deterioration (Dean and Bowden, 2017). Nurses performing the assessment need to explain to the patient what they are going to do and seek their informed consent. Before approaching the patient, they need to undertake a risk assessment of the environment to determine whether it is safe to undertake the A-G assessment.

This article is based on the Resuscitation Council’s approach to an A-E assessment (Resuscitation Council UK, 2015) and guidance from Benson (2017) on how to undertake the F and G elements. Using this structured approach can ensure the reliability of the assessment in any situation. An A-G assessment is not only used in critically ill or deteriorating patients, but should be standard practice for all patients receiving care. It normally takes a few minutes to complete depending on the practitioner’s experience.

**Airway**
The airway includes the nose, mouth, larynx, pharynx, trachea, bronchi and bronchioles (Cathala and Costa, 2019). Its main function is to carry air into the body. The aim of airway assessment is to ensure this anatomical function is achieved and any obstruction (full or partial) of the airway is identified (Table 1). An indication of a patent airway is the patient’s ability to speak with a usual voice in full sentences.

**Breathing**
Breathing is the process by which air moves in and out of the lungs, allowing gaseous exchange. It should be:
Main causes of airway obstruction

- In healthcare settings, compromised airway is often a result of altered level of consciousness
- Foreign body, aspiration
- Laryngotracheal trauma
- Vocal cord paralysis
- Allergic reaction
- Laryngeal oedema
- Oedema
- Haematoma
- Abscess

Signs of partial airway obstruction

- Breathing sounds (gurgling, stridor, bubbling, expiratory wheeze)
- Choking
- Gasping for air
- Laboured breathing (possibly noisy)
- Coughing
- Reduced level of consciousness
- Unable to speak in full sentences
- Use of accessory muscles in breathing

Table 1. Main causes and signs of airway obstruction

<table>
<thead>
<tr>
<th>Main causes of airway obstruction</th>
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<tr>
<td>Effortless;</td>
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<td>Equal bilateral chest expansion;</td>
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<td>At a rate of 12-20 breaths per minute (respiratory rate);</td>
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<tr>
<td>Noise-free; that is, no wheezing, stridor (a harsh vibrating noise) or rattling;</td>
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<td>The airway should be free of sputum.</td>
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During the assessment, nurses must use the Look, Listen and Feel technique. Looking for any respiratory distress signs (Box 1), assessing the depth and pattern of the respiratory cycle for 15 seconds and counting the respiratory rate for a full minute is recommended. The acceptable oxygen saturation is >96% for patients without hypercapnic respiratory failure or chronic obstructive pulmonary disease (COPD) and 88-92% for patients with those conditions or at risk of worsening hypercapnia (Williams, 2019; National Guideline Centre, 2010; National Institute for Health and Care Excellence, 2018; O’Driscoll et al., 2008). The patient’s ability to talk in full sentences is a good indicator of their breathing status.

Listening to the breathing sounds can give an idea of the cause of any breathing difficulty. Rattling noises can indicate secretion, wheezing can infer asthma, while stridor can suggest partial airway obstruction (Cathala and Costa, 2019).

Placing both hands on the patient’s chest to feel for the rise and fall that accompany breathing will help nurses assess chest expansion and determine symmetry between the right and left lungs. Consent need to be obtained from the patient and a chaperone should be offered where indicated.

A more accurate assessment is an auscultation with stethoscope, but this requires advanced skills.

Circulation

Assessing circulation is not limited to an assessment of the heart. It is focused on the haemodynamic and vascular parts of the circulatory system.

This assessment starts with the peripheries. Are the hands and fingers blue, pink, pale, warm, cold? Blue, pale and cold can reflect a poor peripheral circulation, while pink and warm are linked with a good peripheral circulation.

Another useful measure is capillary refill time (CRT). A CRT <2 seconds suggests a good peripheral perfusion (Sansone et al., 2017).

The next part of the assessment is the heart rate, taking the peripheral or central pulse. Assessing the pulse involves determining its presence, regularity, quality and volume for 15 seconds. The rate is assessed for one full minute. An acceptable heart rate should be between 51 and 90 beats per minute (Royal College of Physicians, 2017). The pulse should be regular and strong or bounding.

An acceptable systolic blood pressure is between 111 and 219 mmHg (Royal College of Physicians, 2017). Clinical readings should be interpreted with caution. If the systolic blood pressure differs by ≥10mmHg from the patient’s baseline, the result should be reviewed with another member of the team. Although diastolic blood pressure is not part of the NEWS 2 scoring system a reading will give a good indication of the patient’s haemodynamic status. The estimation of the patient’s fluid input and output should be calculated using the formula.

It is important to identify signs of haemorrhage, check whether there is a drain present, monitor its output regularly, and ensure the patient has patent intravenous access, so that fluids can be administered in case of an emergency (Cathala and Moorley, 2018) (see Box 2).

Disability

Disability assessment focuses on the main causes of reduced consciousness such as fainting (falls and mobility), drugs (polypharmacy and side effects), alcohol, poisons and hypoglycaemia. The patient’s ACPU status should be assessed. ACPU stands for alert, confusion (new), response to voice, painful stimuli, and unconscious (Smith et al., 2017).

Other areas of the assessment include the pupillary size and reaction to light: pupils should be of equal size and shape and reactive to light. Nurses also need to check the medication chart looking for any drug-induced effects.

Measuring blood glucose is an important part of disability assessment. Hypoglycaemia (blood glucose <4.0mmol/L) can reduce the patient’s consciousness level (Kitsuta, 2006) and needs to be treated following local trust policies and guidelines. Clinical judgement should be used if the patient is not diabetic; blood glucose levels may not need to be checked but if there are signs of altered levels of consciousness (Box 3) then the blood glucose level should be measured. Measuring arterial or venous blood gas can be helpful in such situations. In diabetic patients with high blood sugar levels, it is important to look for signs of ketoacidosis (Box 3).

Box 1. Respiratory warning signs

- Respiratory distress signs: sweating, central cyanosis, use of accessory respiratory muscles (abdominal breathing, ‘see-saw’ breathing)
- Respiratory rate <12bpm or >20bpm
- Oxygen saturations outside the normal values, which are:
  - >96% for patients without hypercapnic respiratory failure or with chronic obstructive pulmonary disease (COPD)
  - 88-92% for patients with hypercapnic respiratory failure or with chronic obstructive pulmonary disease (COPD) or at risk of worsening hypercapnia
- Breathing noises: rattling, wheezing, stridor, coughing
- Unequal air entry: asymmetrical rise and fall of the chest
Pain should be assessed using a tool such as PQRST (palliate/provoke, quality, radiate, severity/scoring, timing (Falk and Hudson, 2016). A bowel assessment should be undertaken, determining last bowel movement and the quality of the stool using a tool such as the Bristol stool chart. A medication history, including recreational drugs and alcohol consumption should be taken. Asking for any change in mobility and any falls in the past six months completes the disability assessment.

Exposure
In exposure, nurses will assess the patient for skin rashes, wounds, pressure injury, signs of infection, bruises, skin changes (turgor). A tool such as aSSKINg (assessment, skin assessment and skin care, surface, skin, keep, incontinent, nutrition) can be used (NHS Improvement, 2018). Venous thromboembolism (VTE) assessment should be carried out, using questions such as:

- Is the patient at high or low risk of VTE?
- Is the patient wearing anti-embolism stockings and/or compression devices?
- Has the patient been prescribed anti-thrombolytic prophylaxis treatment?

Nurses must ensure that the patient’s dignity and privacy is maintained at all times (including body exposure). In this part of the assessment they will examine the patient for signs of pressure injury. Anti-embolism stockings should be removed, as pressure injury can be hidden underneath (NHS Improvement, 2018). Nurses also need to check cannula and drain sites for signs of infection, as well as the patient’s temperature, which should be between 36.1°C and 38.0°C (Royal College of Physicians, 2017).

A nutritional screening should be undertaken and recorded with a tool such as the Malnutrition Universal Screening Tool. To complete this exposure assessment, confirm any allergies (drugs, medication, food, chemicals) with the patient against documentation and think about which test(s) and investigation may be relevant.

Further information
F stands for further information and family and friends. Here nurses need to gather additional information from sources such as drug charts, medical notes, investigation results and friends and relatives. A social assessment is needed: who is the patient’s next of kin or close relatives? Does the patient live alone; in a flat or a house? What is access to the building like? This will allow nurses to develop a picture of the patient’s environment, understand their needs and determine who needs to be involved in their care. This is particularly important for inpatients awaiting discharge.

Goals
Goals set for the patient will be based on the results of the assessment. The following questions can be useful:

- What are the goals for the patient (both short- and long-term)?


References