
1 The Role of the Anaesthetic Practitioner

An anaesthetic practitioner is an essential member of the operating department team working alongside anaesthetists, surgeons, practitioners and healthcare support workers to ensure that anaesthesia for the patient is as safe and effective as possible. Anaesthetic practitioners provide high standards of patient care and skilled support alongside the other members of the perioperative team during the perioperative phases before, during and after surgery (Fynes *et al.* 2014). It is also essential that they continue with updates and attend current in-house training to maintain their skills and knowledge.

The role of the anaesthetic practitioner has nationally agreed standards and levels of practice, implemented by the Royal College of Anaesthetists (RCA 2006). An anaesthetic practitioner's roles are also covered by the College of Operating Department Practitioners and the Health Care Professions Council. Hospital regulations manage these standards appropriately and are implemented within a nationally recognised framework (Fynes *et al.* 2014).

The roles and responsibilities of anaesthetic practitioners include working by themselves to prepare equipment and providing care for the patient, as well as offering support to the anaesthetist during all stages of anaesthesia (Fynes *et al.* 2014). The main roles and responsibilities of the anaesthetic practitioner include:

- To deliver psychological and emotional support to the patient
- To check the anaesthetic machine
- To prepare the anaesthetic equipment
- To support the patient throughout the stages of anaesthesia
- To support the anaesthetist during anaesthesia
- To understand responsibility and accountability for the patient during anaesthesia, including patient documentation, for example the consent form and the World Health Organization (WHO) Surgical Safety Checklist.

Preanaesthetic phase

The anaesthetic practitioner assists the patient before surgery and provides individualised care. This will include supporting the patient by reducing anxiety, placing blood pressure cuffs, connecting electrocardiograph (ECG) electrodes and pulse oximeters, and preparing IV fluids and anaesthetic drugs (NHS Modernisation Agency 2005). The practitioner will also communicate effectively within the team to pass on problems, issues or any past adverse events, such as when catheterising patients and when preparing and assisting in the safe insertion of invasive physiological monitoring such as central venous pressure (CVP) lines and arterial lines.

The anaesthetic practitioner is also able to support the patient if he or she has any concerns. For example, most patients fear anaesthesia, because of fearing the risk of waking

up too early or not waking up following surgical procedures. Many patients ask, 'Will I wake up alright after surgery?' and then become anxious if they don't receive a reply. One of the main roles is therefore to provide psychological support, which is something that practitioners can do on a face-to-face basis. This may include discussing problems, offering reassurance to the patient to let them know they are monitored safely, ensuring the patient is comfortable, talking to the patient and reassuring the patient throughout their time in theatre (Fynes *et al.* 2014).

The anaesthetic practitioner will also undertake roles which will also involve many clinical skills, such as preparing a wide range of specialist equipment and drugs (Copley 2006). This includes:

- Testing anaesthetic machines
- Preparing anaesthetic equipment (AAGBI 2012)
- Preparing intravenous equipment
- Making devices available to safely secure the patient's airway during anaesthesia
- Ensuring drugs such as propofol, local anaesthetics, anaesthetic gases and so on are available
- Knowledge of the different operating tables, including positioning equipment, clamps and pressure-relieving devices.

Anaesthesia

There are three parts to anaesthesia:

1. *Induction*: This is when the patient goes to sleep using anaesthetic drugs.
2. *Maintenance*: This is maintaining the anaesthetic during surgery.
3. *Reversal*: This is waking the patient up by stopping the administration of drugs and anaesthetic gases, or by using specialist drugs to revive the patient (Goodman & Spry 2014).

Responsibility of the practitioner for the care of the patient throughout the stages of anaesthesia is vitally important (Fynes *et al.* 2014). The practitioner is responsible for ensuring the patient is positioned correctly to maintain safety and comfort, to ensure pressure areas are supported, and also to provide maximum access during the operative procedure. The practitioner also needs to follow legal and ethical considerations, and ensure that they are following the Health and Care Professions Council (HCPC) regulations and guidelines.

Checking the anaesthetic machine

Making sure the anaesthetic machine is working correctly is an essential part of the anaesthetic practitioner's role, in collaboration with the anaesthetist. Knowing 'how' it works is of course equally important (Goodman & Spry 2014). During induction of anaesthesia, the patient is at one of the most vulnerable points in his or her perioperative care. Equipment error can therefore put the patient at high risk of harm, for example through airway obstruction, circulatory problems, reduced blood oxygenation or even death, because of errors such as flow reversal though the back bar on the anaesthetic machine (Smith *et al.* 2007).

Practitioners should check the anaesthetic machines by using the Association of Anaesthetists of Great Britain and Northern Ireland checklist (AAGBI 2012) and the manufacturer's manual as guides to ensure the machine is safe to use. There is a joint responsibility between the anaesthetist and anaesthetic assistant for ensuring the correct functioning of anaesthetic equipment before patient use. Often, the anaesthetic assistant will assemble and check the equipment in preparation for the anaesthetist, who then ensures that he or she has the correct equipment for the anaesthetic procedure. The assistant's role is therefore to

support the anaesthetist, check the equipment and ensure the patient's safety (Wicker & Smith 2008).

Errors during anaesthesia have often been associated with lack of proper equipment checks. However, checking an anaesthetic machine using a checklist can lead to a reduction of incidents. Patient safety can be increased by the use of the checklist for checking new anaesthetic machines which can highlight faults during their manufacture. For example, wrong assembly of the anaesthetic machine can lead to errors such as high dosages of volatile agents. The use of a checklist also needs to be carried out when equipment is returned from servicing – it cannot be guaranteed that a serviced or brand-new anaesthetic machine is working perfectly. A thorough check will therefore ensure the equipment has been returned in a working condition and is ready for use. However, it is not the ultimate responsibility of the anaesthetic practitioner to ensure the anaesthetic machine is in perfect working order; it is the anaesthetist who carries the main responsibility. Nonetheless, practitioners have a duty of care to identify and report any faults and are also responsible for their actions, including recordkeeping of anaesthetic machine checks (Fynes *et al.* 2014).

Monitoring responsibilities

The anaesthetic practitioner's responsibility is to attach two ECG electrodes to the patient's upper left and right-sided chest, and one ECG electrode to the lower left side of the chest, before anaesthesia so heart rate and rhythm are monitored by the ECG monitor during induction of anaesthesia. There are many other areas to monitor, and three of the most important are blood pressure, oxygen saturation and temperature.

Non-invasive blood pressure (NIBP) measurement

NIBP is measured by using a blood pressure cuff which is fastened around the arm or leg. The air tube is then attached to the monitor which inflates and deflates the cuff according to the time settings. The blood pressure reading is displayed on the monitor and registers the systolic, mean and diastolic pressures. Normally, the monitor records all measurements over time and provides a trend to indicate when the blood pressure has risen or fallen. Invasive blood pressure monitoring equipment is also used to provide a continuous record of blood pressure. This normally works by connecting a monitor to a transducer which in turn is connected to an intra-arterial line (O'Neill 2010).

Attaching the blood pressure cuff around the patient's arm monitors blood pressure and will ensure that blood pressure is maintained at the correct level. Anaesthetic drugs can reduce or increase blood pressure because of vasoconstriction, vasodilation or effects on the heart, so it is important that blood pressure is constantly monitored.

Pulse oximeters

A pulse oximeter measures the patient's oxygen saturation in their blood. Normal oxygen saturation is between 95 and 100%; anything less than 95% is seen as causing problems for the patient. Patients with chronic obstructive pulmonary disease (COPD) may also suffer from hypoxia. The pulse oximeter is normally attached to a finger, but it can also be attached to an earlobe or toe. The light source in the probe passes through the tissue, and the patient's oxygen concentration is measured via the absorption of the light, then recorded on the monitoring screen (O'Neill 2010). The light is detected by light sensors and is altered by the levels of oxyhaemoglobin and deoxyhaemoglobin. The pulse oximeter should be regularly checked to ensure that it is correctly placed on the extremity and also that circulation at that point is not impaired. Constantly observing the patient's oxygen levels is essential during anaesthesia, and using a pulse oximeter is one of the most important monitors used during anaesthesia as it can help to identify patient problems associated with low oxygen levels (Valdez-Lowe *et al.* 2009).

Conclusion

Anaesthetic practitioners have the potential to contribute to team working, and this results in enhancing patient care and patient access, improving operating room capacity and reducing cancellations and waiting times. Practitioners can also enhance the learning experiences of anaesthetic trainees and other junior anaesthetic practitioners.