Chapter 3: General principles

General infection control principles are as follows:

- A named senior member of the anaesthesia staff should be appointed at each hospital to liaise with the infection control team and the occupational health and safety department. This is to ensure establishment of and compliance with best practice standards in infection control in all areas of anaesthetic practice.[9]
- Systems must be established for regular training of healthcare workers in infection control. This must be coupled with monitoring and regular auditing of infection control practice to guard against apathy and poor compliance among staff.[7]
- Teaching and training programmes in the practice of anaesthesia should integrate and promote infection control practices as a fundamental part of the curriculum and the speciality.[5]
- Staff outside the theatre suite dealing with "anaesthetic" equipment, such as laryngoscopes and self-inflating resuscitation devices, need guidance on their decontamination. Particular areas of vulnerability include casualty, the obstetric delivery suite and neonatal intensive care units (NICUs).
- The manufacturer's recommendations should always be consulted to determine the compatibility of the respective piece of equipment with decontamination procedures and disinfectants.
- Changing to single-use anaesthesia devices is the best choice in the prevention of cross-infection. However, care must be taken when choosing a single-use device for an institution. There is a wide range of cheap disposable anaesthesia devices, some of inferior quality. Questions should always be asked as to whether or not the chosen device is fit for the purpose and is an evidence-based choice. Complications, including hypoxia, have been described from the use of inferior, single-use anaesthetic equipment.[11]

Spaulding's classification[12-15]

Spaulding developed a classification of instruments into "critical", "semi-critical" and "non-critical". This classification is more than 50 years old and is used to determine the level of disinfection for certain equipment and items.

Critical instruments

Critical instruments have an increased risk of contamination. It includes those instruments that are in contact with sterile sites within the body or the intravascular system. Critical instruments should be subjected to sterilisation such as pressurised steam or low temperature methods such as ethylene oxide gas. Examples include surgical instruments, implants and sterile catheters. With the advent of multidrug-resistant and aldehyde-resistant organisms there has been a call to also include other semi-critical instruments into the category of critical instruments. One such item is endoscopes. The design is flawed with lots of crevices that may retain microorganisms. A study by Ofstead et al.[16] showed that almost 50% of endoscopes retained moisture that can aid in the development of a biofilm. In addition, 71% of endoscopes showed microbial growth and cultured organisms such as *Stenotrophomonas maltophilia* and *Citrobacter freundii*.

Other items that are relevant to the anaesthetist include airway instruments such as laryngoscope blades and handles as well as forceps. Airway instrumentation is often associated with trauma to the mucosa. Several studies have demonstrated occult blood on these items. These instruments thus meet the criteria for critical instruments.[17]

Semi-critical instruments

These instruments only come into contact with intact mucosa and intact skin. Examples given under this category include endoscopes, respiratory equipment and cystoscopes. It is, however, interesting to note that most of these items are now being considered "critical instruments".

Non-critical instruments

Instruments that only come into contact with intact skin. Divided into patient non-critical items such as blood pressure cuffs and oximetry probes and environmental non-critical items such as cot sides, theatre trolleys and uncontaminated floors.