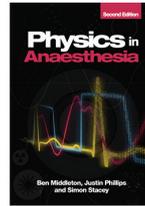


Chapter 17

Equipment management



Self-assessment questions

These questions and answers, in both MTF and SBA formats, accompany *Physics in Anaesthesia 2e* and link back to the book for guidance.

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Multiple true / false questions

For each of the following questions, mark all answers as either true or false

1. Regarding safety critical systems:

- Ventilators are not deemed safety critical
- Multiple redundancy in a device always eliminates the danger of a single point of failure
- Single point of failure minimises the risk of critical incidents
- Multiple backup generators that run in parallel have a greater redundancy than a single larger backup generator
- An alarm on a device that a user can override is an example of a soft limit

Did you know?

- The Swiss cheese model is a metaphor for the conditions in a system that can prevent the occurrence of critical incidents.
- Using this metaphor for medical equipment, each slice of cheese would represent a barrier to an equipment failure hazard such as multiple redundancy.
- When the holes in the Swiss cheese slices line up, when there have been multiple failings in a device, a critical incident is at risk of occurring.

2. Regarding the decontamination of reusable equipment:

- Equipment in the Spaulding non-critical category comes into contact with mucous membranes
- Equipment in the Spaulding semi-critical category requires cleaning and then high-level disinfection
- Equipment in contact with sterile body cavities always requires sterilization
- Equipment in contact with skin mucous membranes needs sterilization
- High-level disinfectants, such as glutaraldehyde and peroxyacetic acid, kill all vegetative bacteria

Reminder

- Cleaning removes all foreign material, whereas disinfectants aim to destroy pathogenic organisms.

Single best answer questions

For each of the following questions, select the single best answer – note that more than one answer may be true but only one option represents the best answer

1. A recently serviced and validated ABG machine, A, gives a SaO₂ reading of 95.28%. Two other ABG machines, B and C, give readings of 95% and 91.15%, respectively. Which statement is correct?
- B is more accurate than C
 - C is both more precise and accurate than B
 - C has less zero drift than B
 - B is an example of sensitivity drift
 - Both B and C need recalibrating

Pointer

- See Figure 17.2.

Reminder

- Sensitivity drift causes a reduction in accuracy and precision.
- Zero drift causes a reduction in accuracy only.

2. What is the best definition of sterilization?
- The removal of all foreign material
 - The destruction of all forms of microbial life
 - The process of destroying pathogenic organisms
 - Use of water, detergents and mechanical action to reduce contamination
 - Irradiation of disposable medical equipment

Pointer

- Single use items are increasingly used because there is less long-term susceptibility to failures, removing the need for decontamination and often providing better financial returns.
- But what about the impact of their use on the environment?

Answers to questions for Chapter 17 – Equipment management

Multiple true / false questions

The following answers are true:

1. b, d and e
2. b, c and e

Single best answer questions

The options below represent the single best answer, although other options may also be true:

1. a
2. b