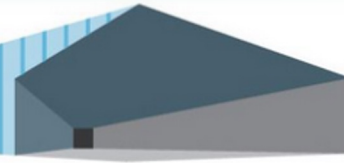


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Risks of infection control in the anesthesiology department

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Background

- Healthcare-associated infections (HAI) – infections acquired by patients during their stay in a hospital or another healthcare setting [ESCD];
- Anesthesia work area (equipment, supply cart et al.) is wide, fertile for all types of pathogens;
- Work environment and staff's hands have direct contact with patients;
- It is vital to follow infection control principles to ensure the patients and staff safety.

Objective and methods

- Objective – To characterize the risks of the infection control in the anesthesiology and recommendations for their improvement;
- Methods – a meta-analysis was performed, including a systematic literature selection. Literature was searched in PubMed, Cochrane Library, Embase. A total 15 scientific articles and guidelines were included;
- Authors defined the main risks of infection control and their importance in the anesthesiology department.

Results

Defined infection control risk groups

1. Hand hygiene;
2. Personal protective equipment;
3. Invasive procedures;
4. Aseptic and safe medication preparation, administration;
5. Equipment and environmental cleaning.



1. Hand hygiene

- The main risk factor of HAI;
- Anesthesia providers have poor hand hygiene – pathogenic microorganisms can contaminate work area;
- Need to be performed at the minimum before aseptic procedures, touching cart, after removing gloves, entering/exiting the operating theatre;
- Recommendations – educate staff, follow the WHO hand hygiene recommendations, available hand sanitizer dispensers – especially recommended wearable dispensers with reminders.

Sites of operating room contamination after simulation



<https://images.journals.lww.com/anesthesia-analgesia/Original.00000539-201504000-00023.F1-23.jpeg>

2. Personal protective equipment

- Patient and staff safety – protects from transmitting and contracting infections;
- Recommendations – properly wear, remove, and dispose of the gear, hand hygiene before applying and after removing, refrain from touching surfaces and face;
- Double gloves during airway management – reduce risk of hand contamination.

3. Invasive procedures

- Expose patients and staff to risk of infection;
- Patients skin preparation – reduces the risk of infection;
- Aseptic non-touch technique;
- Recommendations – follow manufacturer recommendations policy for the proper use of skin prep agents, close doors during operative procedures, minimize staff traffic in/out of operating room.

WHAT IS ANTT?

Aseptic Non-Touch Technique



ANTT is an international set of principles that are aimed to standardise practice and increase patient safety during procedures like wound care and catheterisation.



INFECTION PREVENTION AND CONTROL PRINCIPLES OF ANTT

A ALWAYS DECONTAMINATE HANDS EFFECTIVELY



N NEVER CONTAMINATE KEY PARTS OF THE EQUIPMENT OR THE PATIENT'S SUSCEPTIBLE SITE

T TOUCH NON KEY PARTS OF THE EQUIPMENT WITH CONFIDENCE



T TAKE APPROPRIATE INFECTION PREVENTION AND CONTROL PRECAUTIONS

4. Aseptic and safe medication preparation, administration

- Improper use or reuse of needles, syringes, et al. – increase multiple-drug resistant organisms;
- Lack of injection port disinfection, and contact with nonsterile equipment may increase the risk of contaminated with potentially pathogenic bacteria
- Aseptic non-touch technique;
- Recommendations – avoid recapping, utilization at sharp container, do not reuse syringes, clean access diaphragm of medication or outside of an ampule, single-dose medications, disinfect injection ports.

5. Equipment and environmental cleaning

- Anesthesia machines and work areas can become contaminated of potentially pathogenic microbes – transmitted to patients through direct contact with contaminated equipment, hands of anesthesia providers, or contaminated medications;
- Recommendations – use protective covering, laryngoscope reusable handles and blades require a high level of disinfection; single-use breathing system filter;
- The most important – clean and disinfect high-touch surfaces between patients and end of the day.

Conclusions

- There are available extensive literature of the infection control risks in anesthesiology;
- In this meta-analysis, the main groups of infection control risks were defined, their importance was substantiated, and recommendations were given;
- Can be used by hospitals to develop internal infection control recommendations, audit protocols in anesthesiology departments;
- Anesthesia providers are closely related to patient safety, it is important to update internal infection prevention and control guidelines and educate healthcare professionals.

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Thank you for your attention!

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