![International Federation of Perioperative Nurses logo - IFPN]

IFPN Guideline
for
Masks in the Perioperative Environment

Background:

Protection for healthcare workers is becoming increasingly important due to the increasing global incidence of blood borne viruses and tuberculosis. The main BBVs are human immunodeficiency (HIV), and Hepatitis B (HBV) and C viruses. UNAIDS annual report on the global HIV epidemic estimates that in 2002 there were 5 million new HIV infections, 3.1 million AIDS deaths and that 42 million people world-wide are now HIV[1]

BBVs are biological hazards and the risks of infection to the perioperative team must be assessed.

Healthcare workers have a health and safety right to be protected and provided with appropriate and effective personal protective equipment to reduce the risks from ingestion and inhalation and also to be protected from contamination by splashes from substances in their working environment[2].

The need for the wearing of facemasks has been debated in recent times, however even in 1991, Quebbemen et al [3] found that the face was very likely to be contaminated by the splashing of blood and body fluids in orthopaedic, cardiothoracic and vascular surgery. However, McLure et al [4] demonstrated that facemasks significantly reduced the number of bacterial colonies on the operating field. There is also a need for surgical staff to be protected from inhalation of surgical smoke and laser plume[5].

A mask (with a filter size <1.1¨m) may be worn over the mouth and nose by all members of the "scrub" team, with a visor or goggles as desired, for protection. It seems reasonable that all "scrubbed" staff with beards should wear facemasks[6].

Tuberculosis is endemic in some countries of the world and an emerging problem in many others. Given the method of spread of this disease through droplet infection and the risk to perioperative staff in such close proximity to un-tested patients, particularly in the anaesthetic and recovery areas, an assessment of the risk of spread of this disease to healthcare workers must be given due consideration when the wearing, or not of facemasks is deliberated[7].

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1010	1995	1999,2005, May 2019	Every 4 years	May 2023

Facemasks

Not all facemasks offer the same level of protection. Therefore a risk assessment is required to determine mask suitability where it is envisaged contamination by blood/body fluids or hazardous chemicals from electro-cautery smoke or laser plume is likely. Masks with a face shield must be worn where such risks are identified.

The ability to filter expired staff air to protect the patient and to provide effective staff protection from splash injury should be the criteria for the choice of surgical mask.

- Single-use paper (cellulose) masks are not suitable in the perioperative environment.
- Re-usable masks made from cotton of a single, un-pleated layer offer the least protection and those made of the same material although pleated and face-conforming, offer little more. These masks have no filters and become wet with expired breath.
- Masks with a multiple material structure e.g. Polypropylene, polyester, cellulose and with a pliable piece of metal (usually aluminium) to contour to the nasal bridge and a 1.0 micron size offer a higher level of protection. Manufacturers state that a mask with a bacterial filter efficiency (BFE) rating of 99% at 3.0 microns may provide less protection than a mask with a particle filtration efficiency (PFE) of 98% at 1.0 microns. The small micron size is the key to effectiveness[8].
- When working with toxic or noxious substances a respirator with a filtration performance of 99.99% should be worn to protect the wearer.

Recommendations

- A new mask should be worn at the beginning of the working day and changed between surgical cases
- Masks should cover both the mouth and nose and eyes (all mucous membranes should be adequately protected)
- The mask should be repellent to protect against potential splashing and aerosol contamination from blood/body fluids
- Laser plume masks help protect against electro-cautery and laser smoke plume
- Masks should not be left to hang around the neck causing contamination, or in the pocket but be disposed of once used, or not worn when not required.
- Talking should be kept to a minimum to reduce the moisture being exhaled by wearers.

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- If there is a need to cough or sneeze, the mask wearer's face should be pointed towards the surgical site and not away from it, given the air escape is sent backwards from the sides of the mask.
- Used masks should be removed by untying and disposed of by the ties thus reducing the risk of contaminating the hands
- All staff should be adequately protected following a risk assessment of the procedure to be undertaken
- In situations of emerging epidemic disease (e.g. SARS, H5N1, Ebola virus) - the World Health Organisation and national governments will make recommendations for appropriate practice. Add url address for website so can be referenced
- WHO guidance requires a healthcare worker to wear a respirator mask when dealing with a patient infected with tuberculosis, small pox or Severe Acute Respiratory Syndrome.

References:

- ACORN (2018) Australian College of Perioperative Nurses: **Standards for Perioperative Nursing in Australia.**

- AfPP (2016) Association for Perioperative Practice: Harrogate UK: **Standards and Recommendations for Safe Perioperative Practice.**

- AORN (2019) American Operating Room Nurses Association: Denver USA: **Guidelines for Perioperative Practice.**

- ORNAC (2017) Operating Room Nurses Association of Canada**: Standards for Perioperative Nursing Practice.**

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