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Abstract

In clinical practice, we constantly have moral and ethical deliberations to consider, as we strive to provide our patients with an environment that is microbiologically safe (Cochrane 2009). Nurses should endeavour to practice in a safe and competent manner (Nursing and Midwifery Council [NMC] clinical skills, but also have an understanding of, and apply at all times, the theoretical knowledge that underpins those skills.

This article serves as an aide memoire to the correct use of personal protective equipment.

2018). However, you can only be a safe practitioner if you are not only are equipped with essential

Introduction

Compliance with the standard principles of infection prevention and control (IPC) is the keystone of best evidence-based practice. IPC is the responsibility of all who work in health and social care environments and they have a code of practice to follow. (Health And Social Care Act 2008[updated 2015]). Loveday et. al (2014:S4) also emphasise that *“Healthcare workers should be educated and their competence assessed in the: assessment of risk; selection and use of personal protective equipment; and use of standard precautions.”* We are reminded by Loveday et. al (2014) that all patient care activities require that standard infection control precautions are applied by all healthcare practitioners, regardless of the known or suspected infection status(Bouchoucha & Moore 2018).

The reality of the real world is that we, as human beings, are capable of infecting one another, sometimes unintentionally (Holland 2007). In clinical practice, everyone is very busy meeting the needs of patients but we also have the human failings of complacency and forgetfulness at times. In times of short staffing and heavy workload, some practitioners may consider slight deviations from adherence with national guidelines, standards and local organisational policy as presenting minimal risk or harm to other staff and patients. However, Bouchoucha & Moore (2018) emphasise that poor compliance can become “generalised” which puts staff and patients at increased risk of infection. You can only safeguard against risks if you know what those risks are (Cochrane 2009).

The use of gloves, disposable aprons, facemasks and eye protection are the constituents of personal protective equipment (PPE). Using PPE is one of the standard IPC precautions and reduces the risk of acquiring contamination from potentially infectious body fluids, and transmitting microorganisms via hands or clothing (Wilson et.al. 2015, Loveday et.al.2014). The decision to wear PPE is made following an assessment of the risks related to the activity. If an activity involves no contact with blood or body fluids then PPE is usually not required. Practitioners are taught on how to put on PPE during their general clinical skills education sessions. If you are unsure of how to put on PPE, then you should contact your line-manager, your practice educator and/or the IPC Team.

Facemasks and Eye protection

Facemasks and eye protection are not always necessary for most nursing interventions. However, these pieces of protective equipment must be worn when there is the likelihood of accidental splashes from blood, body fluids, secretions and excretions to the face. If face protection is not worn, you may be exposed to conjunctival or mucosal splashes from blood or body fluids (Cochrane 2009).

Where facemasks are required, in most instances ordinary surgical facemasks will suffice. However, some specific respiratory infections, or aerosol-generating procedures require the use of specialised face masks, (usually FFP3 facemasks or respirators), e.g. bronchial lavage, Tuberculosis (TB), Severe Acute Respiratory Syndrome (SARS). FFP3 facemasks masks afford protection against the inhalation of minute airborne particles. Different brands are available in many sizes. FFP3 and respirators have to be fitted correctly to afford you the best protection. It is a legal requirement that wearers should be fit-tested so that a satisfactory seal can be attained (Cochrane 2009). *“Fit-testing should be carried out by a properly trained and competent fit tester”* (NHS England 2103). Your infection prevention and control team (IPCT) and/or occupational health department will direct you to your organisation’s designated fit-tester. Remember your IPCT will provide specialist

knowledge and advice for patients with specific infection prevention and control requirements. Table 1 provides some insight into which masks should be worn and when, and table two provides recommendations for differing types of facial protection

Gloves

The wearing of gloves is not an alternative to hand decontamination. Put yourself in the patient's place and ask yourself "*where have that practitioner's hands been before they touched me?*" Prior to and following glove use, hands must still be washed, or an alcohol based hand decontamination agent applied. When adorning PPE, gloves should be put on last (Cochrane 2009). The selection of the appropriate glove material must be made following a risk assessment. This assessment should include, are gloves necessary, should the gloves be sterile or non-sterile (Lawrence 2012)?

An overview on making the risk assessment for sterile versus non-sterile gloves is provided in Figure 1.

When wearing gloves, practitioners should be mindful not to touch anything outside of the "*patient zone*" e.g. own clothes/uniform, skin, hair etc. Anything touched outside of the patient zone presents a risk of contamination to the patient **and/or the practitioner** (Wilson et.al 2015).

Aprons

Disposable plastic aprons are single use items. Disposable aprons must only be used for one procedure or one episode of care only (Cochrane 2010). They are water repellent and impervious to microorganisms. For all direct care procedures with patients, when there is a likelihood of contact with blood, secretions, excretions or body fluids they must be worn (Loveday et.al 2014). Similarly, aprons must be worn when handling **soiled** linen, used equipment or waste products (Wilson 2001).

Not all aprons used in healthcare are disposable e.g. radiographers lead aprons. Where reusable aprons made of **heavy-duty** polyvinyl chloride (PVC) or lead aprons are used, these must be decontaminated after each activity following manufacturer's decontamination guidelines and organisational policy.

In many organisations, aprons are colour-coded, with a particular coloured apron used for a particular patient intervention, e.g. red aprons for administering a bedpan or commode. **Colour coding, if used, is usually in line with National Specifications for Cleanliness(NHS 2007)**

Removing PPE

One study highlighted how practitioners often demonstrate differing ways of removing disposable aprons and if done incorrectly, this can lead to contamination or transference of microorganisms onto clothing (uniform) and into the surrounding environment. This study also found, that while nurses and other healthcare workers were significantly better at removing PPE in the correct manner, large numbers of medical staff were demonstrating incorrect removal of PPE (Mitchell et.al 2013).

The correct sequence for removal of PPE is gloves, followed by aprons, eye protection then facemask (Lawrence 2012). ~~Table one and Figures 2-5 describe and demonstrate the correct way to remove a disposable apron. While Figures 6-8 demonstrate correct removal of gloves. This sentence is removed.~~

Remember that you have chosen this caring profession and you should endeavour to practice in a safe and competent manner. Failure to comply with policy and best evidence-based practice can result in disciplinary action (Cochrane2009). You must constantly risk assess all your professional activities and adopt the standard principles for infection control practice with all patients and procedures. You must also comply with employers' policies, protocols and procedures. Knowing how to use PPE correctly also equips you with transferable knowledge and skills into all clinical practice arenas. This will ensure equitable, standardised care practices and minimise the transmission of infection.

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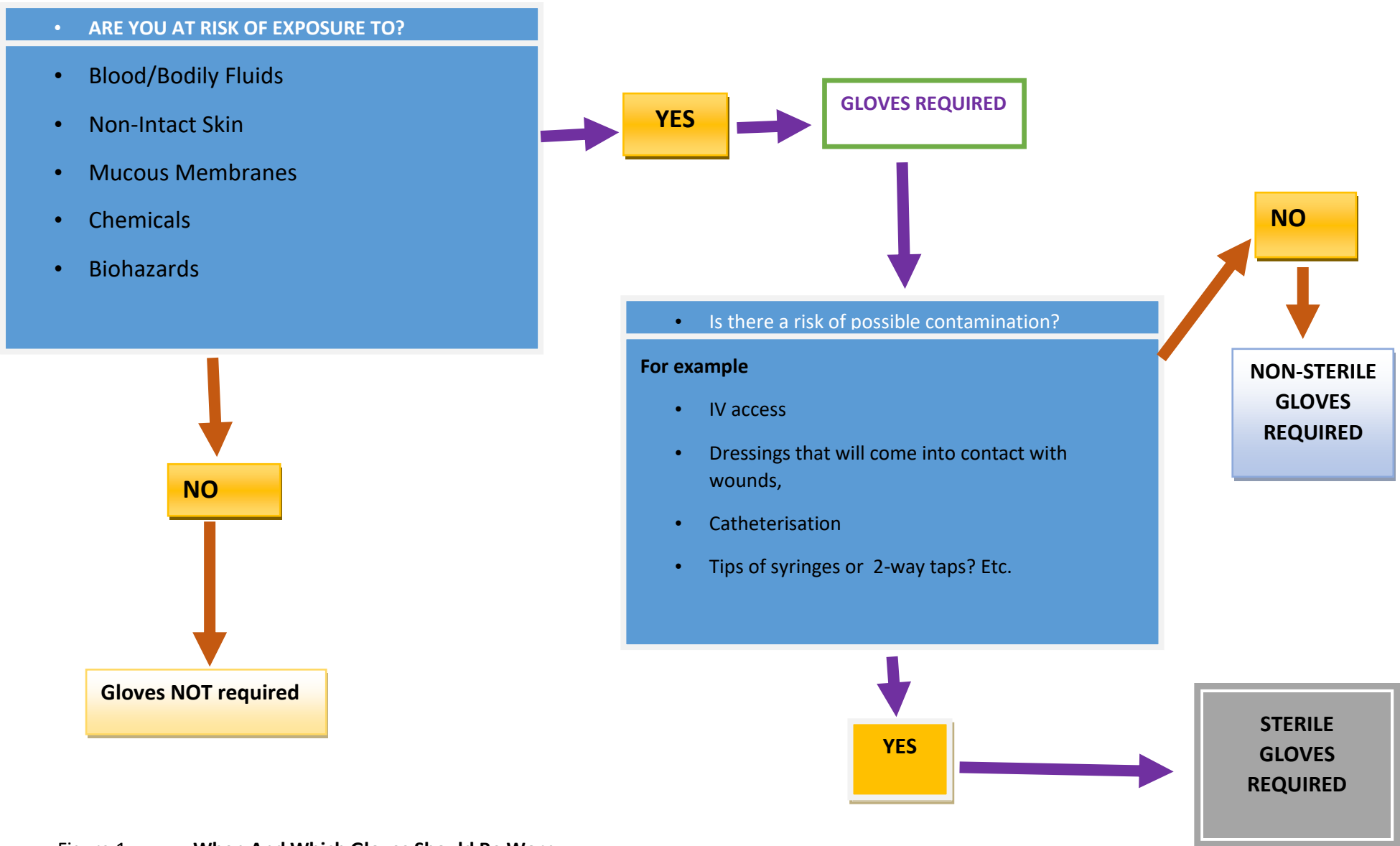


Figure 1 When And Which Gloves Should Be Worn

Table 1

WHEN AND WHICH MASKS TO BE WORN

Facial protection should always be used in undertaking a procedure or task where splashes or aerosol could be created. Face masks should be combined with a mask or visor and goggles for the eyes



surgical mask

A surgical mask is recommended in most clinical situations, to provide adequate respiratory and facial protection, acting as a barrier to splashes and droplets.



FFP3 mask

specific respiratory infections, or aerosol-generating procedures require the use of specialised face masks. It is a legal requirement that these masks and respirators require a fit-test



FFP3 respirator mask

Table 2 Facial /Eye protection

Eye/face protection should be worn by all members of the surgical team during all surgical procedures

Ordinary spectacles are not considered to be clinical eye protectors

Protective glasses



oversepectacles



Disposable eyeshields



Face Mask with attached fluid shield

recommended in most clinical situations, to provide adequate facial protection, acting as a barrier to splashes and droplets.



Visor and mask

Recommended if blood or body fluid contamination to the face/eyes is anticipated e.g. during surgical interventions, equipment decontamination, dental clinics

