Principles of transmission-based precautions

Transmission-based precautions
TBPs comprise specific precautions depending on the mode of spread, namely by contact, droplet or airborne (HPS, 2014). Some diseases might have multiple routes of transmission, in which case all three sets of precautions may apply (Department of Health, Social Services and Public Safety, 2008). TBPs are not to be confused with standard precautions, which should be applied consistently for all patients at all times.

Contact precautions
Contact precautions aim to prevent the spread of an infectious agent by direct or indirect contact with patients or service users and healthcare workers who are providing care-related activities. An example of bacteria that might be spread by contact transmission is MRSA or a gastrointestinal infection such as Salmonella spp (HPS, 2014).

Droplet precautions
Droplet precautions relate to infectious agents that may be spread from the respiratory tract by coughing, sneezing or even talking. Their ability to spread is limited, as they only remain in the air for short periods of time and cannot travel further than a metre. This means the spread is limited to close contact (Health Protection Agency, 2012). Examples of infectious diseases that would require droplet precautions include influenza and bacterial meningitis (HPS, 2014).

Airborne precautions
Airborne precautions help to prevent the spread of infectious agents that have the ability to travel distances and remain infectious when suspended in the air (HPA, 2012). These include bacteria such as Mycobacterium tuberculosis and viruses such as measles (HPS, 2014). Negative-pressure rooms are required for patients who have, or are suspected of having, multidrug-resistant Mycobacterium tuberculosis (National Institute for Health and Care Excellence, 2011).

Protective isolation
Protective isolation may be necessary for patients who are severely immune compromised and need to be nursed in a protective environment (DHSSPS, 2008). This may include the use of a positive-pressure isolation room. Refer to local guidelines about protective isolation and positive/negative-pressure rooms.

Caring for patients in isolation
It is important that staff are aware of the known or suspected infectious agents involved when considering the care and management of patients nursed in isolation. Standard precautions (SICPs) should be applied, as well as the appropriate TBPs.

Single rooms should be en-suite, with a toilet and hand-wash sink as a minimum requirement. Cleaning should be undertaken at least daily, referring to local guidelines on the specific regime.

It is important that rooms are as clutter free as possible to allow thorough cleaning. Equipment should be single patient and cleaned after each use or single use, wherever possible, and disposed of. Any equipment that is not suitable for single-patient use should be left in the room, cleaned after each use and decontaminated before returning to general use (Royal College of Nursing, 2012).

Transmission of micro-organisms by the hands of healthcare workers is the most likely method of contributing to the spread of infections in hospitals (Loveday et al, 2014), and the World Health Organization (2009) has stated that “clean hands prevent patient suffering and save lives”. Hand hygiene refers to either hand washing or the use of alcohol-based hand gels. Read the WHO’s Your Five Moments for Hand Hygiene (WHO, 2014).

Personal protective equipment
Personal protective equipment (PPE) is needed to protect healthcare workers and their patients (RCN, 2012).
HPS (2014) states: “Before undertaking any procedure, staff should assess any likely exposure and ensure PPE is worn that provides adequate protection against the risks associated with the procedure or task being undertaken.”

PPE should be stored in a clean, dry area and protected from contamination. It should be:
- Available at the point of use;
- Single use;
- Disposed of in the correct waste stream;
- Applied and removed in the correct way to prevent cross-contamination (HPS, 2014).

The equipment that is used depends on the task and the type of precautions required. For contact precautions, if contact with the patient and/or the environment is anticipated, aprons should be worn. The use of gloves will depend on the nature of the task but, generally, non-sterile gloves should be worn when there is anticipated exposure to blood and body fluid, or when handling sharps or contaminated devices.

Sterile gloves should be worn when undertaking an invasive procedure, or there is any contact with sterile sites. However, gloves are not a substitute for good hand hygiene (Loveday et al, 2014). When taking droplet or airborne precautions, extra PPE is needed, such as surgical face masks, FFP3 respirator masks and facial protection.

**FFP3 respirator masks**

The FFP3 respirator masks are designed to fit closely to the face to prevent transmission of particulates via the airborne route. Before using FFP3 masks for the first time, each staff member should have the fit tested, and then undertake regular fit checks. Guidelines are available from Public Health England (2013).

Local guidelines should be followed for infections spread by the droplet and/or airborne route. HPS advises that FFP3 masks and facial protection must be considered for anyone admitted with, or suspected of having, an infectious agent that is airborne or spread by droplet, especially with any aerosol-generating procedures.

**PPE for specific infectious agents**

Certain infectious agents, including ebola, require specific PPE that may not fit into the usual guidance for contact, droplet or airborne precautions. Specific guidance is usually provided at the time by health organisations and government departments; for example, in the case of ebola.

**Psychosocial concerns**

Patients who are isolated in a single room may become anxious, withdrawn and/or depressed; good communication with both patient and relatives can minimise distress. If the door cannot be closed due to safeguarding issues, this will need careful consideration and discussion with the infection prevention and control team.

Availability of isolation rooms can also be limited (Kilpatrick et al, 2008); if too few are available, cohort nursing of patients in designated areas may be necessary. Again, liaison with the infection prevention and control team will be needed. **NT**

**References**


World Health Organization (2014) Your Five Moments for Hand Hygiene. tinyurl.com/WHOMoments


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**TEST YOUR KNOWLEDGE**

**Can you answer these questions?** To check whether you are correct, go to our learning unit at: nursingtimes.net/iso

1 What is the best way to describe isolation nursing?
   - A. Staff wearing gloves and aprons when in contact with patients
   - B. Preventing the spread of infection in clinical settings
   - C. Wearing personal protective clothing at all times
   - D. Preventing visitors from visiting patients being nursed in a side room

2 What type of gloves provide the greatest protection against blood-borne viruses?
   - A. Vinyl
   - B. Plastic
   - C. Nitrile
   - D. Cloth

3 What part of a patient’s bedside table should be cleaned first?
   - A. The top
   - B. The side
   - C. The wheels
   - D. The handles

4 Who decides on the choice of personal protective equipment?
   - A. The nurse specialist for infection prevention and control
   - B. The ward manager
   - C. The doctor looking after the patient
   - D. The nurse caring for the patient, following a risk assessment

5 When should gloves be worn?
   - A. When handling items contaminated with blood or other body fluids
   - B. When recording patient observations of a patient in isolation
   - C. When administering oral medications to a patient not in isolation
   - D. When helping a patient with dressing when not in isolation

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