

Appendix 11 – Aide memoire for Optimal Patient Placement and Respiratory Protective Equipment (RPE) for Infectious agents whilst a patient is in hospital

The clinical judgement and expertise of the Infection Prevention and Control Team or the Health Protection Team should be sought for novel, unusual or an increase in cases of known or suspected infectious agents in any care setting. This table is for infection prevention and control measures i.e. to minimise risk of cross-transmission of infection to self and others when providing direct patient care. This is distinct for example from the principles of contact tracing where the patient will have commenced antibiotic therapy and the interviewer will be at least 3 feet (1 metre) apart.

The following table outlines the TBPs required for a number of infectious agents/diseases primarily;

- Optimal patient placement whilst the patient is considered infectious; and
- The recommended RPE to minimise risk of cross infection to staff, patients and visitors.
- Clinical decisions made by staff regarding use/non-use of RPE will depend on a risk assessment which should include e.g. the presenting symptoms, risk of acquisition and the availability of treatment.

Suspected or confirmed Pathogen	Disease	Type of transmission based precautions (TBPs) required	Optimal placement whilst patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers whilst patient is considered infectious ³	Notifiable under Public Health (Scotland) Act 2008 ⁵
<i>Acinetobacter baumannii</i>	Pneumonia, bacteraemia, skin and soft tissue infections.	Contact	Single en-suite room in high risk settings e.g. ICU/PICU/NICU, oncology/haematology	No requirement for RPE	No
Adenovirus ¹	Upper +/- lower respiratory tract infection	Droplet	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	No
	Conjunctivitis, gastroenteritis	Contact	Single en-suite room	No requirement for RPE	No
<i>Bacillus anthracis</i>	Injection, inhalation, gastrointestinal or cutaneous Anthrax	Contact	Single en-suite room	No requirement for RPE	Yes

Suspected or confirmed Pathogen	Disease	Type of transmission based precautions (TBPs) required	Optimal placement whilst patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers whilst patient is considered infectious ³	Notifiable under Public Health (Scotland) Act 2008 ⁵
<i>Bacillus cereus</i>	Gastroenteritis, sepsis, pneumonia, endocarditis, central nervous system (CNS) and ocular infections	Contact	Single en-suite room	No requirement for RPE	Yes
<i>Bordetella pertussis</i>	Whooping Cough	Droplet	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs until patient has been established on appropriate antimicrobial treatment ⁶	Yes
<i>Candida auris</i>	Ear, wound and bloodstream infection	Contact	Single en-suite room in high risk settings e.g. ICU/PICU/NICU, oncology/haematology	No requirement for RPE	No
Carbapenemase producing Enterobacteriaceae (CPE) (either swab positive or positive as per clinical risk assessment criteria)	Colonisation, device associated infections – urinary tract infection, catheter associated bacteraemia	Contact	Single en-suite room	No requirement for RPE	No
<i>Chlamydia pneumoniae</i>	Pneumonia	Droplet	Single en-suite room in high risk settings e.g. ICU/PICU/NICU, oncology/haematology	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	No
<i>Clostridium difficile</i>	<i>Clostridium difficile</i> infection (CDI)	Contact	Single en-suite room	No requirement for RPE	Yes

Suspected or confirmed Pathogen	Disease	Type of transmission based precautions (TBPs) required	Optimal placement whilst patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers whilst patient is considered infectious ³	Notifiable under Public Health (Scotland) Act 2008 ⁵
Coronavirus ^{1,4} (Non SARSCoV/ MersCoV)	Acute respiratory syndrome	Droplet	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	No
<i>Corynebacterium diphtheria</i> or <i>Corynebacterium ulcerans</i>	Diphtheria – Cutaneous, Pharyngeal (toxigenic strains)	Contact, Droplet (If Pharyngeal)	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs (if pharyngeal)	Yes
Enterovirus D68	Mild to moderate upper respiratory tract infections, can cause severe respiratory illness and rarely acute flaccid myelitis (AFM)	Droplet	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	No
Gastrointestinal infections e.g <i>Salmonella</i> spp.	Gastroenteritis	Contact	Single en-suite room	Fluid resistant surgical facemask (FRSM) if vomiting is present.	(Some GI Infections are notifiable. Refer to guidance)
<i>Haemophilus influenzae</i> type b	Epiglottitis, meningitis, pneumonia, septicaemia	Droplet	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs until patient has been established on appropriate antimicrobial treatment ⁶	Yes
Hepatitis A virus	Hepatitis, Gastroenteritis	Contact	Single en-suite room	Fluid resistant surgical facemask (FRSM) if vomiting is present.	Yes

Suspected or confirmed Pathogen	Disease	Type of transmission based precautions (TBPs) required	Optimal placement whilst patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers whilst patient is considered infectious ³	Notifiable under Public Health (Scotland) Act 2008 ⁵
Herpes zoster (Shingles) (varicella-zoster) ²	Shingles (vesicle fluid)	Contact	Single en-suite room If lesions cannot be covered	No requirement for RPE	Yes
	Shingles (lesions in the respiratory tract)	Droplet/airborne	Isolation room/suite	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	Yes
Influenza virus (Endemic strains) ⁴	Influenza	Droplet	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	Yes
Measles virus ²	Measles (rubeola)	Droplet/Airborne	Isolation room/suite	FFP3 or Hood for routine care and AGPs	Yes
Methicillin resistant <i>Staphylococcus aureus</i> (MRSA) (either swab positive or positive as per clinical risk assessment criteria)	Colonisation, skin and wound infections, endocarditis, pneumonia, osteomyelitis, urinary tract infections and bacteraemia.	Contact	Single en-suite room	FFP3 or Hood for AGPs only if pneumonia	Yes
Mumps virus ²	Mumps (infectious parotitis)	Droplet	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	Yes
<i>Mycobacterium tuberculosis</i> complex	Extrapulmonary Tuberculosis	Contact	Single en-suite room	FFP3 or Hood for AGPs	Yes
	Pulmonary or laryngeal disease Tuberculosis	Airborne	Isolation room/suite until patient has been established on appropriate antimicrobial treatment ⁶ and always if the patient has MDR or XDR TB	FFP3 or Hood for routine care and AGPs until patient has been established on appropriate antimicrobial treatment ⁶ and always if the patient has MDR or XDR TB	Yes

Suspected or confirmed Pathogen	Disease	Type of transmission based precautions (TBPs) required	Optimal placement whilst patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers whilst patient is considered infectious ³	Notifiable under Public Health (Scotland) Act 2008 ⁵
<i>Mycoplasma pneumoniae</i>	Pneumonia	Droplet	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	No
<i>Neisseria meningitides</i>	Meningitis – meningococcal (Or presentation of clinical meningitis of unknown origin), septicaemia	Droplet	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs until patient has been established on appropriate antimicrobial treatment ⁶	Yes
Norovirus	Winter vomiting disease	Contact	Single en-suite room	Fluid resistant surgical facemask (FRSM) if vomiting is present.	Yes
Novel coronavirus ⁴	Severe respiratory illness with/out gastroenteritis, pneumonia	May be unknown, assume airborne until further information available.	Isolation room/suite	FFP3 or Hood for routine care and AGPs	No (unless SARS)
Panton Valentine Leukocidin (PVL) – positive <i>Staphylococcus aureus</i>	Skin and soft tissues infection, necrotising pneumonia, necrotising fasciitis, osteomyelitis, septic arthritis and pyomyositis, purpura fulminans	Contact	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs (only if pneumonia)	No
Parainfluenza virus ¹	Upper +/- lower respiratory tract infection	Droplet	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	No

Suspected or confirmed Pathogen	Disease	Type of transmission based precautions (TBPs) required	Optimal placement whilst patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers whilst patient is considered infectious ³	Notifiable under Public Health (Scotland) Act 2008 ⁵
Parvovirus B19 – (Erythema infectiosum – Erythrovirus B19)	Slapped cheek syndrome	Droplet	Single en-suite room until the rash+/- arthralgia has developed	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs (Not required if the rash+/- arthralgia has developed)	No
<i>Pneumocystis jirovecii</i>	Pneumonia	Droplet	Single en-suite room in high risk settings e.g. ICU/PICU/NICU, oncology/haematology	No requirement for RPE	No
<i>Pseudomonas aeruginosa</i>	Pneumonia, bacteraemia, wound or surgical site infections, catheter-associated urinary tract infections, conjunctivitis in neonates	Droplet	Single en-suite room in high risk settings e.g. ICU/PICU/NICU, oncology/haematology	No requirement for RPE	No
Respiratory syncytial virus (RSV) ¹	Upper +/- lower respiratory tract infection	Droplet	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	No
Rotavirus	Gastroenteritis	Contact	Single en-suite room	No requirement for RPE	No
Rubella virus ²	German Measles	Droplet	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	Yes
<i>Serratia marcescens</i>	Pneumonia, bacteraemia, urinary tract infections, wound infections	Contact	Single en-suite room in high risk settings e.g. ICU/PICU/NICU, oncology/haematology	No requirement for RPE	No
<i>Staphylococcus aureus</i> (Enterotoxigenic)	Gastroenteritis, scalded skin syndrome	Contact	Single en-suite room (not required if lesions can be covered)	No requirement for RPE	Yes

Suspected or confirmed Pathogen	Disease	Type of transmission based precautions (TBPs) required	Optimal placement whilst patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers whilst patient is considered infectious ³	Notifiable under Public Health (Scotland) Act 2008 ⁵
<i>Stenotrophomonas maltophilia</i>	Bacteraemia, respiratory infections, urinary tract and surgical-site infections	Contact	Single en-suite room in high risk settings e.g. ICU/PICU/NICU, oncology/haematology	No requirement for RPE	No
<i>Streptococcus pyogenes</i> (Group A Strep)	Respiratory infection	Droplet	Single en-suite room (until patient has been established on appropriate antimicrobial treatment ⁶)	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs until patient has been established on appropriate antimicrobial treatment ⁶	No
	Bacteraemia, meningitis, wound infection or infection in other normally sterile site	Contact	Single en-suite room (until patient has been established on appropriate antimicrobial treatment ⁶)	No requirement for RPE	Yes
<i>Streptococcus pneumoniae</i>	Pneumonia	Droplet	Single en-suite room (until patient has been established on appropriate antimicrobial treatment ⁶)	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs until patient has been established on appropriate antimicrobial treatment ⁶	Yes
	Bacteraemia, meningitis, wound infection or infection in other normally sterile site	Contact	Single en-suite room (until patient has been established on appropriate antimicrobial treatment ⁶)	No requirement for RPE	Yes (presence in the wound is not notifiable)
Varicella virus ²	Chickenpox	Airborne	Isolation room/suite	FFP3 or Hood for routine care and AGPs	Yes
Shiga-toxin reducing Escherichia coli (STEC)	Gastroenteritis, haemolytic uremic syndrome, thrombotic thrombocytopenic purpura.	Contact	Single en-suite room	No requirement for RPE	Yes

Suspected or confirmed Pathogen	Disease	Type of transmission based precautions (TBPs) required	Optimal placement whilst patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers whilst patient is considered infectious ³	Notifiable under Public Health (Scotland) Act 2008 ⁵
Viral Haemorrhagic Fever (VHF)	See http://www.hps.scot.nhs.uk/travel/viralhaemorrhagicfever.aspx?subjectid=00C				

Footnote 1

In routine clinical practice healthcare workers do not commonly wear masks when dealing with patients presenting with the “common cold” or “influenza – like illness”. However, in a patient with undiagnosed respiratory illness where coughing and sneezing are significant features, or in the context of known widespread respiratory virus activity in the community or a suspected or confirmed outbreak of a respiratory illness in a closed or semi-closed setting, the need for appropriate respiratory and facial protection to be worn should be considered.

Footnote 2

In relation to childhood illnesses and use of RPE, no vaccine offers 100% protection and a small proportion of individuals acquire/become infected despite vaccination or known IgG immunity (previous infection). Vaccination is still the best protection against many infectious diseases. If staff are uncertain of their immunisation status they should discuss this with their occupational health provider. It is recommended that vaccinated individuals wear RPE as detailed in this appendix to minimise any residual risk, and to promote consistency in practice across all staff groups.

Footnote 3

The ocular route of transmission for pathogens spread by the droplet/airborne route whilst plausible lacks scientific evidence. This lack of evidence includes having very little certainty about what the incremental benefit of using eye protection routinely when using a FRSM/FFP3 respirator. Eye protection is considered to be necessary and worn if there is a risk of spraying or splashing of blood/body fluids from patient contact or procedure, and always when used with respirators during the performance of AGPs. This is in line with published infection control guidance - http://ac.els-cdn.com/S019567011300279X/1-s2.0-S019567011300279X-main.pdf?_tid=fb9a4810-6e2d-11e7-8aa6-00000aacb361&acdnat=1500653123_4ba30f9973ee78c5ff37255f70b8fa1f

Aerosol Generating Procedures (AGPs) can produce droplets <5 microns in size which may cause infection if they are inhaled. These small droplets, containing pathogens, can remain in the air, travel over a distance and still be infectious. AGPs procedures should only be carried out when essential. Where possible, these procedures should be carried out in well-ventilated single rooms with the doors shut. Only those healthcare workers who are needed to undertake the procedure should be present.

Aerosol Generating Procedures (AGPs) are defined as:

- o Intubation, extubation and related procedures, for example manual ventilation and open suctioning.
- o Cardiopulmonary resuscitation.

- Bronchoscopy.
- Surgery and post mortem procedures in which high-speed devices are used.
- Some Dental procedures (e.g drilling)
- Non Invasive Ventilation (NIV) e.g. Bilevel Positive Airway Pressure Ventilation (BiPAP) and Continuous Positive Airway Pressure Ventilation (CPAP).
- High Frequency Oscillatory Ventilation (HFOV).
- Induction of sputum

Footnote 4

Additional guidance should be followed for known/suspected cases of novel influenza viruses, including avian influenza, MERS CoV.

Footnote 5

Notifications may be made on clinical suspicion by registered medical practitioner (“notifiable diseases”) or once the organism is confirmed by the director of the diagnostic laboratory (“notifiable organisms”). Conditions may fall under one or both of these categories, and medical professionals and laboratories have a duty to be aware of their responsibilities under the Public Health etc. (Scotland) Act 2008

Footnote 6

Appropriate antimicrobial treatment will include the choice of treatment, dose, frequency and number of days of treatment. It will vary by organism and should be determined by the clinical team and informed by local and national prescribing guidance where available.