

Appendix 11 – Patient Placement considerations and Respiratory Protection, including R1, R2 and R3 respiratory agents.

The following table outlines some of the Transmission-Based Precautions (TBPs) required for a number of infectious agents/diseases when delivering patient care, primarily:

- patient placement considerations whilst the patient is considered infectious
 - isolation facilities should be prioritised depending on the known/suspected infectious agent. When specialised ventilated isolation facilities are indicated but unavailable, the next best option should be considered with an appropriate risk assessment.
- the recommended mask (Fluid resistant surgical mask (FRSM)/Respiratory Protective Equipment (RPE)) required to minimise the risk of transmission. The use, or non-use, of masks should be based on a clinical risk assessment. This assessment should include consideration of respiratory (R1, R2 and R3) infectious agents¹, as well as the risk of splashing or spraying of infectious body fluid particles onto the mucosa.

The Hierarchy of Controls should also be used within health and care settings to prevent the transmission of infection. See [Appendix 16](#) for further details.

Where respiratory protection is not required, SICPs and other TBPs still apply, including when there is an anticipated risk of splashing or spraying of blood or bodily fluids. For additional guidance on recommended mask type during the provision of patient care, see [Appendix 15](#).

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Suspected or confirmed infectious agent	Disease or typical presentation	Respiratory categorisation R1, R2, R3 or N/A	Patient placement considerations, including any requirement for a specialist ventilation room ²	Respiratory protection (RPE) or fluid-resistant surgical mask (FRSMs) for healthcare workers whilst the patient is considered infectious ³
Acinetobacter baumannii	Pneumonia, bacteraemia, skin and soft tissue infections	N/A	Single en-suite room	No respiratory protection required
Adenovirus	Upper +/- lower respiratory tract infection	R1	Single en-suite room	FRSM ³
	Conjunctivitis, gastroenteritis	N/A	Single en-suite room	No respiratory protection required
Bacillus anthracis	Injection, inhalation, gastrointestinal or cutaneous Anthrax	N/A	Single en-suite room	No respiratory protection required
Bacillus cereus	Gastroenteritis, sepsis, pneumonia, endocarditis, central nervous system (CNS) and ocular infections	N/A	Single en-suite room	No respiratory protection required
Bacteria with unusual resistance (see Appendix 13 for full list)	Varies according to infectious agent	N/A	Single en-suite room	For respiratory protection requirements seek advice from local IPC team
Bordetella pertussis	Whooping cough	R1	Single en-suite room	FRSM ³

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Candidozyma auris (formerly Candida auris)	Ear, wound and bloodstream infection	N/A	Single en-suite room	No respiratory protection required
Carbapenemase producing Enterobacterales (CPE) (either swab positive or positive as per clinical risk assessment criteria)	Device associated infections – urinary tract infection, catheter-associated bacteraemia	N/A	Single en-suite room	No respiratory protection required
Chlamydia pneumoniae	Pneumonia	R1	Single en-suite room	FRSM ³
Clostridioides difficile	Clostridioides difficile infection (CDI)	N/A	Single en-suite room	No respiratory protection required
Coronavirus⁷ (including SARS-CoV-2/Covid-19) (For SARS-CoV-1 and MERS – see HCID air entry)	Respiratory symptoms	R1	Single en-suite room	FRSM ³

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Corynebacterium diphtheria or Corynebacterium ulcerans	Diphtheria – Cutaneous, Pharyngeal (toxigenic strains)	R1	Single en-suite room	FRSM ³
Enterovirus D68	Mild to moderate upper respiratory tract infections, can cause severe respiratory illness and rarely acute flaccid myelitis (AFM)	R1	Single en-suite room	FRSM ³
Extended-spectrum beta-lactamases (ESBLs) (Typically ESBL-producing <i>Escherichia coli</i> or ESBL-producing <i>Klebsiella pneumoniae</i>)	Urinary tract infections, and bloodstream infections	N/A	Single en-suite room	No respiratory protection required
	Pneumonia	R1	Single en-suite room	FRSM ³

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Gastrointestinal infections for example Salmonella spp.	Gastroenteritis	N/A	Single en-suite room	No respiratory protection required
Haemophilus Influenzae type b	Epiglottitis, meningitis, pneumonia, septicaemia	R1	Single en-suite room	FRSM ³
Hepatitis A virus	Hepatitis, Gastroenteritis	N/A	Single en-suite room	No respiratory protection required
High consequence infectious diseases (HCID)⁴ Air (UKHSA describe as Airborne)	Severe respiratory illness, pneumonia Refer to: High consequence infectious diseases (HCID) - GOV.UK	R2/R3	- Negative pressure and ante-room within an Infectious Diseases Unit - Positive pressure ventilated lobby (PPVL) room⁵	RPE as part of full HCID assessment PPE ensemble. See HCID addendum for full PPE requirements
High consequence infectious diseases (HCID)⁴ Contact	Refer to: High consequence infectious diseases (HCID) - GOV.UK	N/A	- High-level isolation unit - Negative pressure and ante-room within an Infectious Diseases Unit - Positive pressure ventilated lobby (PPVL) room⁵	RPE as part of full HCID assessment PPE ensemble. See HCID addendum for full PPE requirements

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Human metapneumovirus	Upper +/- lower respiratory tract infection	R1	Single en-suite room	FRSM ³
Influenza virus (Endemic strains)	Influenza	R1	Single en-suite room	FRSM ³
Morbillivirus (Measles virus)⁷	Measles	R2	- Negative-pressure Isolation room/suite - Positive pressure ventilated lobby (PPVL) room⁵ - Single en-suite room	RPE
Methicillin resistant Staphylococcus aureus (MRSA) (either swab positive or positive as per clinical risk assessment criteria)	Skin and wound infections, endocarditis, osteomyelitis, urinary tract infections and bacteraemia	N/A	Single en-suite room	No respiratory protection required
	Pneumonia	R1	Single en-suite room	FRSM ³

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Monkeypox virus (MPXV)	Mpox: Prodrome, rash (localised or widespread), lesions	N/A	Single en-suite room	No respiratory protection required
	Mpox: lower respiratory tract infection	R2	- Negative pressure isolation room - Positive pressure ventilated lobby (PPVL) room⁵	RPE
Paramyxovirus⁷	Mumps (infectious parotitis)	R1	Single en-suite room	FRSM ³
Mycobacterium tuberculosis complex	Extrapulmonary Tuberculosis	N/A	Single en-suite room	No requirement for respiratory protection, unless using high speed devices on extrapulmonary sites during surgery or post-mortem, then use RPE.
	Pulmonary or laryngeal disease Tuberculosis	R2	- Negative-pressure isolation room - Positive pressure ventilated lobby (PPVL) ⁵ room until the patient has	RPE for until the patient has been established on appropriate antimicrobial treatment ⁶ and always if the patient has MDR or XDR TB

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			been established on appropriate antimicrobial treatment ⁶ Note that a negative-pressure isolation room (NPIR) is the required placement for patients with MDR or XDR TB. If an NPIR is not available within the facility, the patient must be transferred promptly to a hospital or unit equipped with a functional NPIR.	
Mycoplasma pneumoniae	Pneumonia	R1	Single en-suite room	FRSM ³
Neisseria meningitides	Meningitis – meningococcal (or presentation of clinical meningitis of unknown origin), septicaemia	R1	Single en-suite room	FRSM ^{3 6}

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Norovirus	Winter vomiting disease	N/A	Single en-suite room	No respiratory protection required
Novel respiratory pathogens (new and emerging)	Severe respiratory illness with or without gastroenteritis, pneumonia	R3	- Negative pressure isolation room - Positive pressure ventilated lobby (PPVL) room⁵	RPE
Panton Valentine Leukocidin (PVL) – positive Staphylococcus aureus	Skin and soft tissues infection, necrotising fasciitis, osteomyelitis, septic arthritis and pyomyositis, purpura fulminans	N/A	Single en-suite room	No respiratory protection required
	Necrotising pneumonia	R1	Single en-suite room	FRSM ³
Parainfluenza virus	Upper +/- lower respiratory tract infection	R1	Single en-suite room	FRSM ³
Parvovirus B19 – (Erythema	Slapped cheek syndrome	R1	Single en-suite room	FRSM ³

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infectiosum – Erythrovirus B19)				
Pneumocystis jirovecii	Pneumonia	R1	Single en-suite room in high-risk settings, for example ICU/PICU/NICU, oncology/haematology, transplant units	FRSM ³
Pseudomonas aeruginosa	Bacteraemia, wound or surgical site infections, catheter-associated urinary tract infections, conjunctivitis in neonates	N/A	Single en-suite room	No respiratory protection required
	Pneumonia	R1	Single en-suite room	FRSM ³
Respiratory syncytial virus (RSV)	Upper +/- lower respiratory tract infection	R1	Single en-suite room or planned cohorts	FRSM ³
Rhinovirus	Common cold	R1	Single en-suite room	FRSM ³
Rotavirus	Gastroenteritis	N/A	Single en-suite room	No respiratory protection required

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Rubella virus⁷	German Measles	R1	Single en-suite room	FRSM ³
Sarcoptes scabiei var hominis	Classical scabies, crusted (hyperkeratotic) scabies	N/A	Single en-suite room	No respiratory protection required
Serratia marcescens	Bacteraemia, urinary tract infections, wound infections	N/A	Single en-suite room	No respiratory protection required
	Pneumonia	R1	Single en-suite room	FRSM ³
Staphylococcus aureus (Enterotoxigenic)	Gastroenteritis, scalded skin syndrome	N/A	Single en-suite room	No respiratory protection required
Stenotrophomonas maltophilia	Bacteraemia, urinary tract and surgical-site infections	N/A	Single en-suite room	No respiratory protection required
	Respiratory infections	R1	Single en-suite room	FRSM ³

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<i>Streptococcus pyogenes</i> (Group A Strep)	Respiratory infection, meningitis	R1	Single en-suite room	FRSM ³
	Bacteraemia, wound infection or infection in other normally sterile site	N/A	Single en-suite room	No respiratory protection required
<i>Streptococcus pneumoniae</i>	Pneumonia, meningitis	R1	Single en-suite room	FRSM ^{3 6}
	Bacteraemia, wound infection or infection in other normally sterile site	N/A	Single en-suite room	No respiratory protection required
Shiga-toxin producing <i>E. coli</i> (STEC)	Gastroenteritis, haemolytic uremic syndrome, thrombotic thrombocytopenic purpura	N/A	Single en-suite room	No respiratory protection required
Vancomycin-resistant Enterococci (VRE)	Bacteraemia, urinary tract, wound and surgical-site infections	N/A	Single en-suite room	No respiratory protection required

Suspected or confirmed infectious agent	Disease or typical presentation	Respiratory categorisation R1, R2, R3 or N/A	Patient placement considerations, including any requirement for a specialist ventilation room ²	Respiratory protection (RPE) or fluid-resistant surgical mask (FRSMs) for healthcare workers whilst the patient is considered infectious ³
Varicella zoster virus	Chickenpox	R2	- Negative pressure isolation room/suite - Positive pressure ventilated lobby (PPVL) room⁵ - Single en-suite room	RPE
	Shingles (vesicle fluid)	N/A	Single en-suite room	No respiratory protection required
	Shingles (lesions in the respiratory tract)	R2	- Negative pressure isolation room/suite - Positive pressure ventilated lobby (PPVL) room⁵ - Single en-suite room	RPE

FOOTNOTES

Footnote 1

The categorisation of infectious respiratory agents into the categories R1, R2 and R3 are informed by the [UK Health and Safety Executive's Approved List of Biological Agents](#):

- R1 = respiratory infectious agents that can cause human disease and may be a hazard to employees; if exposed but they are unlikely to spread to the community and there is usually effective prophylaxis or treatment available.
- R2 = respiratory infectious agents that can cause severe human disease and may be a serious hazard to employees if exposed; they may spread to the community; but there is usually effective prophylaxis or treatment available.
- R3 = respiratory infectious agents that cause severe human disease and are a serious hazard to employees if exposed; they are likely to spread to the community; and there is usually no effective prophylaxis or treatment available.

Additional information regarding these categories can be found in the [Transmission Based Precautions Definitions Literature Review Considered Judgement Form](#).

Footnote 2

This column aims to highlight the pathogens which should be prioritised for specialist ventilation rooms and those which should be prioritised for a single room. A risk assessment adopting clinical judgement should be performed locally when prioritising placement of patients where there are not enough single en-suite rooms for the number of patients requiring one. The risk assessment should consider factors such as:

- severity of illness caused

- organism transmissibility (including organisms that may be transmitted in the absence or before the onset of symptoms)
- symptoms (for example, those with cough, diarrhoea, uncontrolled secretions, or draining wounds)

Footnote 3

RPE may be worn when caring for a person with suspected or confirmed R1 infectious agent if a healthcare worker is advised to do so by their own medical practitioner or based on personal choice. See [Appendix 15](#) for further information on personal choice.

Footnote 4

This includes any unknown/novel HCIDs in addition to those on the list of known contact and air (UKHSA guidance describes as HCID airborne) HCIDs available from [UK 4 Nations HCID Guidance](#).

Footnote 5

Positive pressure ventilated lobby (PPVL) rooms are not recommended for use for the care of a HCID patient due to the risk of air leakage from the ante room to the corridor. However, where a PPVL room is available, this may provide greater protection than a standard single room without specialised ventilation.

Footnote 6

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

Footnote 7

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 all staff wear PPE as detailed above, regardless of vaccination status, to minimise any residual risk and to promote consistency in practice across all staff groups.