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National infection prevention and control manual for England

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Contents

Introduction 3

Responsibilities for the content of this manual 4

Responsibilities for adopting and implementing this manual 4

Responsibilities of organisation by role 5

Chapter 1: Standard infection control precautions (SICPs) 8

1.1 Patient placement 9

1.2 Hand hygiene 9

1.3 Respiratory and cough hygiene 12

1.4 Personal protective equipment (PPE) 12

1.5 Safe management of care equipment 16

1.6 Safe management of the care environment 18

1.7 Safe management of linen 18

1.8 Safe management of blood and body fluid spillages 20

1.9 Safe disposal of waste (including sharps) 20

1.10 Occupational safety: prevention of exposure (including sharps injuries) .. 22

Chapter 2: Transmission based precautions (TBPs) 24

2.1 Patient placement / assessment of infection risk 25

2.2 Safe management of patient care equipment in an isolation room/cohort area 27

2.3 Safe management of the care environment 28

2.4 Personal protective equipment (PPE): respiratory protective equipment (RPE) 30

2.5 Aerosol generating procedures 33

2.6 Infection prevention and control when caring for the deceased 34

Appendix 1: Best practice – How to hand wash, step-by-step images 35

Appendix 2: Best practice – How to handrub, step-by-step images 36

Appendix 3: Best practice – surgical hand antisepsis using antimicrobial soap 37

Appendix 4: Best practice – surgical hand rub technique using alcohol based hand rub (ABHR) 38

Appendix 5: Glove use and selection 39

Appendix 6: Putting on and removing PPE (donning and doffing) 40

Appendix 7: Best practice – decontamination of reusable non-invasive care equipment 41

Appendix 8: Best practice – linen bagging and tagging 42

Appendix 9: Best practice – management of blood and body fluid spills 43

Appendix 10: Best practice – management of occupational exposure incidents 44

Appendix 11a: Aide memoire for optimal patient placement and respiratory protective equipment (RPE) for infectious agents in hospital inpatients (based on evidence from WHO, CDC and UKHSA) 45

Appendix 11b Aide memoire for optimal patient placement and respiratory protective equipment (RPE) for high consequence infectious diseases 55

Appendix 12: Transmission based precautions for deceased patients with infection 58

Introduction

The UK Antimicrobial five-year national action plan, published in January 2019 stated that the Scottish NIPCM will be adopted in England as national standards, to be measured by the regulators.

The NIPCM has been adapted for use within England to support and facilitate healthcare providers to demonstrate compliance with the ten criteria of the 'Health and Social Care Act 2008, Code of practice on the prevention and control of infections and related guidance (hereafter referred to as The "*Code of Practice"*).

Aims

The NIPCM has been produced to:

- provide an evidence-based practice manual for use by all those involved in care provision in England and should be adopted as mandatory guidance in NHS settings or settings where NHS services are delivered and the principles should be applied in all care settings.

- ensure a consistent UK wide approach to infection prevention and control, however some operational and organisational details may differ across the nations.

In all non-NHS care settings, to support with health and social care integration, the content of this manual is considered best practice. The manual aims to:

- make it easy for care staff to apply effective infection prevention and control precautions
- reduce variation and optimise infection prevention and control practices across care settings in England
- improve the application of knowledge and skills in infection prevention and control
- help reduce the risk of Healthcare Associated Infection (HCAI)
- help with alignment of practice, education, monitoring, quality improvement and scrutiny.

Pathogen specific guidance is outwith the remit of the NIPCM, which is not pathogen specific. Pathogen specific guidance appropriate to England, for example, MRSA or SARS-CoV-2, is produced by other agencies for example UKHSA and HIS. The NIPCM outlines evidence based standard and transmission-based infection and prevention mitigations. The literature reviews that underpin and inform the practical application of the NIPCM and highlight implications for research are available at: http://www.nipcm.hps.scot.nhs.uk/resources/literature-reviews/

Audience and target groups

This manual is guidance for the NHS and as such should be applied by all NHS staff involved in patient care. Furthermore, the principles in this manual should be applied across all care settings (including acute, community and social care), complementing specific guidance produced for these settings.

Scope

Guidance contained within this manual relates to infection prevention and control practice with a primary focus on healthcare (NHS) settings, however, the principles set out are relevant to all settings where care is delivered. This manual is complemented by setting and organism specific guidance, produced by agencies such as UKHSA, and links to other relevant guidance and legislation are provided for reference.

Responsibilities for the content of this manual

NHS England and NHS Improvement will ensure that there is appropriate consultation with key stakeholders, to ensure that the NIPCM recommendations are appropriate to the system and aligned with the relevant pathogen specific guidance, legislation, and mandatory requirements for England.

Responsibilities for adopting and implementing this manual

All registered care providers must demonstrate compliance with the Health and Social Care Act 2008: Code of practice on the prevention and control of infections and related guidance which outlines ten criteria which care organisations must demonstrate compliance against.

Responsibilities of organisation by role

Chief executives/executive board (or equivalent) are responsible for ensuring

- systems and resources available to implement and monitor compliance with infection prevention and control (Criteria 1, *Code of Practice*) as specified in this guidance in all care areas; compliance monitoring includes all staff (permanent, agency and, where required, external contractors)

- there is a culture that promotes incident reporting, including near misses, while focusing on improving systemic failures and encouraging safe working practices, that is, that any workplace risk(s) are mitigated maximally for everyone. This may entail local risk assessments based on the measures as prioritised in the hierarchy of controls in the context of managing infectious agents[1]

- safe systems of work, including managing the risk associated with infectious agents through the completion of risk assessments approved through local governance procedures, for example Integrated Care System level. This national guidance outlines the recommended principles to support local decision making within individual organisations.

Chief Operating Officers (COOs) are responsible for:

- directing the conduct of operational activities in relation to this guidance
- providing leadership, support, direction and assistance.

Directors of Infection Prevention and Control (DIPC) are responsible for ensuring:

- adoption and implementation of this guidance in accordance with local governance processes
- a workforce that is competent in IPC practice; (Criteria 6, Health and Social Care Act Code of Practice).

Managers of all services must ensure that staff:

- are aware of and have access to this guidance

[1] Guidance on the hierarchy of controls is under development using the defined NIPCM methodology and will be included in the NIPCM content as a priority. Setting-specific risk assessment tools are available to support organisations in applying the HoC Coronavirus » Every action counts (england.nhs.uk)

- have had instruction/education on infection prevention and control by attending events and/or completing training; (Criteria 1 and 9, Health and Social Care Act Code of Practice)
- have adequate support and resources to implement, monitor and take corrective action to comply with this guidance; if not, a risk assessment must be undertaken and approved through local governance procedures
- with health concerns (including pregnancy) or who have had an occupational exposure are referred promptly to the relevant agency, eg GP, occupational health or accident and emergency
- have had the required health checks, immunisations and clearance (including those undertaking exposure prone procedures (EPPs); (Criteria 10, Health and Social Care Act Code of Practice)
- include infection prevention and control as an objective in their personal development plans (or equivalent) (Criteria 6, Health and Social Care Act Code of Practice)
- refer to infection prevention and control in all job descriptions.

Staff providing care must:

- show their understanding by applying the infection prevention and control principles in this guidance
- maintain competence, skills and knowledge in infection prevention and control by attending education events and/or completing training
- communicate the infection prevention and control practices to be carried out by colleagues, those being cared for, relatives and visitors, without breaching confidentiality
- have up-to-date occupational immunisations, health checks and clearance requirements as appropriate
- report to line managers and document any deficits in knowledge, resources, equipment and facilities or incidents that may result in transmitting infection including near misses, eg PPE failures
- not provide care while at risk of transmitting infectious agents to others; if in doubt, they must consult their line manager, occupational health department, and or their infection prevention and control team (IPCT)
- inform the IPCT and local UKHSA health protection team of any outbreaks or serious incident relating to an outbreak in a timely manner.

Infection prevention and control teams must:

- engage with staff to develop systems and processes that lead to sustainable and reliable improvements in applying infection prevention and control practices
- have suitably qualified Infection Prevention and Control staff who can provide expert advice on applying infection prevention and control in all care settings and on individual risk assessments, ensuring action is taken as required
- must maintain competence, knowledge and skills in infection prevention and control practices
- have epidemiological/surveillance systems capable of distinguishing patient case(s) requiring investigation and control.

When an organisation – eg an NHS trust – uses products or adopts practices that differ from those stated in this manual, it is responsible for ensuring safe systems of work, including the completion of a risk assessment approved through local governance procedures.

Chapter 1: Standard infection control precautions (SICPs)

Standard infection control precautions (SICPs) are to be used **by all** staff, **in all** care settings, **at all** times, **for all** patients whether infection is known to be present or not, to ensure the safety of those being cared for, staff and visitors in the care environment.

SICPs are the basic infection prevention and control measures necessary to reduce the risk of transmitting infectious agents from both recognised and unrecognised sources of infection.

Sources of (potential) infection include blood and other body fluids, secretions or excretions (excluding sweat), non-intact skin or mucous membranes and any equipment or items in the care environment that could have become contaminated.

The application of SICPs during care delivery is determined by assessing risk to and from individuals. This includes the task, level of interaction and/or the anticipated level of exposure to blood and/or other body fluids.

To protect effectively against infection risks, SICPs must be used consistently by all staff. SICPs implementation monitoring must also be ongoing to ensure compliance with safe practices and to demonstrate ongoing commitment to patient, staff and visitor safety as required by the care regulators, the Care Quality Commission

There are 10 elements of SICPs:

1. Patient placement
2. Hand hygiene
3. Respiratory and cough hygiene
4. Personal protective equipment
5. Safe management of the care environment
6. Safe management of care equipment

7. Safe management of healthcare linen
8. Safe management of blood and body fluids
9. Safe disposal of waste (including sharps)
10. Occupational safety / managing prevention of exposure (including sharps)

1.1 Patient placement

Patients must be promptly assessed for infection risk on arrival at the care area, eg inpatient/outpatient/care home, (if possible, prior to accepting a patient from another care area) and should be continuously reviewed throughout their stay.

This assessment should influence placement decisions in accordance with clinical/care need(s).

Patients who may present a cross-infection risk include those:

- with diarrhoea, vomiting, an unexplained rash, fever or respiratory symptoms
- known to have been previously positive with a Multi-drug Resistant Organism (MDRO), eg MRSA, CPE
- who have been an inpatient in any hospital in the UK or abroad or are a known epidemiological link to a carrier of CPE.

Further information can be found in the patient placement literature review.

1.2 Hand hygiene

Hand hygiene is considered one of the most important ways to reduce the transmission of infectious agents that cause healthcare associated infections (HCAIs).

Clinical hand-wash basins (HWBs) must:

- be used for that purpose only and not used for the disposal of other liquids
- have mixer taps, no overflow or plug and be in a good state of repair
- have wall mounted liquid soap and paper towel dispensers.

Hand hygiene facilities should include instructional posters.

Before performing hand hygiene:

- expose forearms (bare below the elbow)
- remove all hand and wrist jewellery. The wearing of a single, plain metal finger ring, eg a wedding band, is permitted but should be removed (or moved up) during hand hygiene. A religious bangle can be worn but should be moved up the forearm during hand hygiene and secured during patient care activities
- ensure fingernails are clean and short, and do not wear artificial nails or nail products
- cover all cuts or abrasions with a waterproof dressing.

To perform hand hygiene:

- Wash hands with non-antimicrobial liquid soap and water if:
- hands are visibly soiled or dirty
- caring for patients with vomiting or diarrhoeal illnesses
- caring for a patient with a suspected or known gastrointestinal infection, eg *Norovirus* or a spore-forming organism such as *Clostridioides difficile*.

In all other circumstances, use alcohol-based handrubs (ABHRs) for routine hand hygiene during care.

ABHRs must be available for staff as near to the point of care as possible. Where this is not practical, personal ABHR dispensers should be used, eg within the community, domiciliary care, mental health units etc.

Where running water is unavailable, or hand hygiene facilities are lacking, staff may use hand wipes followed by ABHR and should wash their hands at the first opportunity.

Perform hand hygiene:

1. before touching a patient.
2. before clean or aseptic procedures.
3. after body fluid exposure risk.
4. after touching a patient; and

5. after touching a patient's immediate surroundings.

ALWAYS PERFORM HAND HYGIENE BEFORE PUTTING ON AND AFTER REMOVING GLOVES.

For how to wash hands, see the step-by-step guide in appendix 1 of this document.

For how to hand rub, see the step-by-step guide in appendix 2 of this document.

Skin care

- dry hands thoroughly after hand washing, using disposable paper towels
- use an emollient hand cream regularly eg during breaks and when off duty
- do not use or provide communal tubs of hand cream in the care setting
- staff with skin problems should seek advice from occupational health or their GP.

Surgical hand antisepsis

Surgical scrubbing/rubbing (this applies to those undertaking surgical and some invasive procedures):

- perform surgical scrubbing/rubbing before donning sterile theatre garments or at other times, eg before inserting central vascular access devices
- remove all hand and wrist jewellery (including wedding band)
- single-use nail brushes must only be used for decontaminating nails. Nail picks can be used if nails are visibly dirty
- use an antimicrobial liquid soap licensed for surgical scrubbing or an ABHR licensed for surgical rubbing (as specified on the product label)
- ABHR can be used between surgical procedures if licensed for this use.

For surgical scrubbing (not rubbing), follow the step-by-step guide in appendix 3 of this document.

For surgical rubbing (not scrubbing), follow the step-by-step guide in appendix 4 of this document.

For hand hygiene posters/leaflet, refer to the resources section of NIPCM.

Further information can be found in the hand hygiene literature reviews:

- Hand washing, hand rubbing and indications for hand hygiene
- Hand hygiene products
- Skin Care
- Surgical hand antisepsis in the clinical setting

1.3 Respiratory and cough hygiene

Respiratory and cough hygiene is designed to minimise the risk of cross-transmission of known or suspected respiratory illness (pathogens):

- cover the nose and mouth with a disposable tissue when sneezing, coughing, wiping and blowing the nose; if unavailable use the crook of the arm
- dispose of all used tissues promptly into a waste bin
- wash hands with non-antimicrobial liquid soap and warm water after coughing, sneezing, using tissues, or after contact with respiratory secretions or objects contaminated by these secretions
- where there is no running water available or hand hygiene facilities are lacking, staff may use hand wipes followed by ABHR and should wash their hands at the first available opportunity
- keep contaminated hands away from the eyes nose and mouth.

Staff should promote respiratory and cough hygiene helping those (eg elderly, children) who need assistance with this, eg providing patients with tissues, plastic bags for used tissues and hand hygiene facilities as necessary.

Further information can be found in cough etiquette/respiratory hygiene in the hospital setting literature review.

1.4 Personal protective equipment (PPE)

Before undertaking any procedure, staff should assess any likely exposure to blood and/or other body fluids, non-intact skin or mucous membranes and wear personal protective equipment (PPE) that protects adequately against the risks associated with the procedure. The principles of PPE use set out below are important to ensure that PPE is used correctly to ensure patient and staff safety. Avoiding overuse or inappropriate use of PPE is a key principle that ensures this is risk-based and minimizes its environmental impact. Where appropriate, consideration should be

given to the environmental impact of sustainable or reusable PPE options versus single-use PPE while adhering to the principles below.

All PPE must be:

- located close to the point of use. PPE for healthcare professionals providing care in the community and domiciliary care providers must be transported in a clean receptacle
- stored to prevent contamination in a clean, dry area until required (expiry dates must be adhered to)
- single-use only unless specified by the manufacturer
- changed immediately after each patient and/or after completing a procedure or task
- disposed of after use into the correct waste stream, eg domestic waste, offensive (non-infectious) or clinical waste
- discarded if damaged or contaminated.

NB Reusable PPE such as non-disposable goggles/face shields/visors, must be decontaminated after each use according to manufacturer's instruction.

GLOVES must be:

- worn when exposure to blood and/or other body fluids, non-intact skin or mucous membranes is anticipated or likely
- changed immediately after each patient and/or after completing a procedure/task even on the same patient
- changed if a perforation or puncture is suspected
- appropriate for use, fit for purpose and well-fitting
- never decontaminated with ABHR or soap between use.

NB Double gloving is NOT recommended for routine clinical care. However, it may be required for some exposure prone procedures, eg orthopaedic and gynaecological operations, when attending major trauma incidents or as part of additional precautions for high consequence infectious disease management.

Gloves are **NOT** required to carry out near patient administrative tasks, eg when using the telephone, using a computer or tablet, writing in the patient chart; giving oral medications; distributing or collecting patient dietary trays. For appropriate glove use and selection, see Appendix 5.

Further information can be found in the gloves literature review.

APRONS must be:

- worn to protect uniform or clothes when contamination is anticipated or likely, eg when in direct care contact with a patient.
- changed between patients and/or after completing a procedure or task.

FULL BODY GOWNS OR FLUID-RESISTANT COVERALLS must be:

- worn when there is a risk of extensive splashing of blood and/or body fluids, eg operating theatre, ITU
- worn when a disposable apron provides inadequate cover for the procedure or task being performed
- changed between patients and removed immediately after completing a procedure or task
- Further information can be found in the aprons/gowns literature review.

EYE OR FACE PROTECTION (INCLUDING FULL-FACE VISORS) must:

- be worn if blood and/or body fluid contamination to the eyes or face is anticipated or likely, eg by members of the surgical theatre team and always during aerosol generating procedures; regular corrective spectacles are not considered eye protection
- not be impeded by accessories such as piercings or false eyelashes
- not be touched when being worn.
- Further information can be found in the eye/face protection literature review.

FLUID RESISTANT SURGICAL FACE MASKS (FRSM):

Surgical face masks are required:

- as a means of source control, eg to protect the patient from the wearer during sterile procedures such as surgery, and
- to protect the wearer when there is a risk splashing or spraying of blood, body fluids, secretions or excretions onto the respiratory mucosa.

FRSM must be:

- worn if a full-face visor is not available for spraying or splashing
- worn with eye protection if splashing or spraying of blood, body fluids, secretions or excretions onto the respiratory mucosa (nose and mouth) is anticipated or likely (Type IIR)
- worn to protect patients from the operator as a source of infection, eg when performing surgical procedures or epidurals or inserting a central vascular catheter (CVC) (Type II or Type IIR)
- well-fitting and fit for purpose, fully covering the mouth and nose (manufacturers' instructions must be followed to ensure effective fit and protection)
- removed or changed:
  - at the end of a procedure/task
  - if the mask's integrity is breached, eg from moisture build-up after extended use or from gross contamination with blood or body fluids
  - in accordance with manufacturers' specific instructions.

Further information can be found in the surgical face masks literature review.

FOOTWEAR must be:

- visibly clean, non-slip and well-maintained, and support and cover the entire foot to avoid contamination with blood or other body fluids or potential injury from sharps
- removed before leaving a care area where dedicated footwear is used, eg theatre; these areas must have a decontamination schedule with responsibility assigned.

Further information can be found in the footwear literature review

HEADWEAR

Headwear is not routinely required in clinical areas unless part of theatre attire or to prevent contamination of the environment such as in clean rooms.

HEADWEAR must be:

- worn in theatre settings and clean rooms, eg central decontamination unit
- well-fitting and completely cover the hair

- changed or disposed of between clinical procedures/lists or tasks and if contaminated with blood and/or body fluids
- removed before leaving the theatre or clean room
- individuals with facial hair must also cover this in areas where headwear is required, eg wear a snood.

NB Headwear worn for religious reasons such as turbans, kippot veil, headscarves is permitted providing patient care and safety is not compromised. These must be washed and/or changed daily or immediately if contaminated and comply with additional attire in theatres etc.

Further information can be found in the headwear literature review.

For the recommended method of putting on and removing PPE, see UKHSA guides.

1.5 Safe management of care equipment

Care equipment is easily contaminated with blood, other body fluids, secretions, excretions and infectious agents. Consequently, it is easy to transfer infectious agents from communal care equipment during care delivery.

Care equipment is classified as either:

- single use: equipment which is used once on a single patient then discarded. This equipment must never be re-used. The packaging will carry this symbol:
- single patient use: equipment which can be reused on the same patient and may require decontamination in-between use such as nebuliser masks
- reusable invasive equipment: used once then decontaminated, eg surgical instruments
- reusable non-invasive equipment: (often referred to as communal equipment) - reused on more than one patient following decontamination between each use, eg commode, patient transfer trolley.

NB Needles and syringes are single use devices, they should never be used more than once or reused to draw up additional medication. Never administer medications from a single-dose vial or intravenous (IV) bag to multiple patients.

Before using any sterile equipment check that:

- the packaging is intact
- there are no obvious signs of packaging contamination
- the expiry date remains valid
- any sterility indicators are consistent with the process being completed successfully.

Decontamination of reusable non-invasive care equipment must be undertaken:

- between each use/between patients
- after blood and/or body fluid contamination
- at regular predefined intervals as part of an equipment cleaning protocol
- before inspection, servicing or repair.

If providing domiciliary care, equipment should be transported safely and decontaminated as above before leaving the patient's home.

Always adhere to manufacturers' guidance for use and decontamination of all care equipment.

- All reusable non-invasive care equipment must be decontaminated between patients/clients using either approved detergent wipes or detergent solution, in line with manufacturers' instructions, before being stored clean and dry.
- Decontamination protocols must include responsibility for; frequency of; and method of environmental decontamination.
- An equipment decontamination status certificate will be required if any item of equipment is being sent to a third party, eg for inspection, servicing or repair.
- Guidance should be sought from the IPCT prior to procuring, trialling or lending any reusable non-invasive equipment.
- Medical devices and other care equipment must have evidence of planned preventative maintenance programmes.

For how to decontaminate reusable non-invasive care equipment see Appendix 7.

For decontamination of surgical instruments see HTM01-01 decontamination of surgical instruments.

Further information can be found in the management of patient care equipment literature review.

1.6 Safe management of the care environment

The care environment must be:

- visibly clean, free from non-essential items and equipment to facilitate effective cleaning
- well maintained, in a good state of repair and with adequate ventilation for the clinical specialty.

Routine cleaning

- The environment should be routinely cleaned in accordance with the National Cleaning Standards.
- Use of detergent wipes are acceptable for cleaning surfaces/frequently touched sites within the care area.
- A fresh solution of general-purpose neutral detergent in warm water is recommended for routine cleaning. This should be changed when dirty or when changing tasks.
- Routine disinfection of the environment is not recommended however, 1,000ppm available chlorine should be used routinely on sanitary fittings.
- Staff groups should be aware of their environmental cleaning schedules for their area and clear on their specific responsibilities.
- Cleaning protocols should include responsibility for, frequency of, and method of environmental decontamination.

Further information can be found in the safe management of the care environment literature review.

1.7 Safe management of linen

Clean linen

- Should be stored in a clean, designated area, preferably an enclosed cupboard.

- If clean linen is not stored in a cupboard, then the trolley used for storage must be designated for this purpose and completely covered with an impervious covering/or door that is able to withstand decontamination.
- Do not:
  - Rinse, shake or sort linen on removal from beds/trolleys
  - place used linen on the floor or any other surfaces eg a locker/table top
  - re-handle used linen once bagged
  - overfill laundry receptacles (not more than 2/3 full); or
  - place inappropriate items in the laundry receptacle eg used equipment/needles.

Healthcare laundry must be managed and segregated in accordance with HTM 01-04 which categorises laundry as follows:

Used linen (previously known as soiled/fouled linen):

- Ensure a laundry receptacle is available as close as possible to the point of use for immediate linen deposit.
- Should be placed in an impermeable bag immediately on removal from the bed or before leaving a clinical department.

Infectious linen (this mainly applies to healthcare linen)

Infectious linen includes linen that has been used by a patient who is known or suspected to be infectious and/or linen that is contaminated with blood and/or other body fluids, eg faeces:

- Linen in this category must not be sorted but should be sealed in a water-soluble bag (entirely water soluble ‘alginate’ bag or impermeable bag with soluble seams), which is then placed in an impermeable bag immediately on removal from the bed and secured before leaving a clinical area.
- Infectious linen bags/receptacles must be tagged (eg hospital ward/care area) and dated.
- Store all used/infectious linen in a designated, safe, lockable area while awaiting uplift. Uplift schedules must be acceptable to the care area and there should be no build-up of linen receptacles.
- All linen that is deemed unfit for re-use, eg torn or heavily contaminated, should be categorised at the point of use and returned to the laundry for disposal.

Linen used during patient transfer, eg blankets, should be categorised at the point of destination.

Further information can be found in the safe management of linen literature review. For how to manage linen at care area level see Appendix 8.

1.8 Safe management of blood and body fluid spillages

Spillages of blood and other body fluids may transmit blood borne viruses.

Spillages must be treated immediately by staff trained to undertake this safely.

Responsibilities for the treatment of blood/body fluid spills must be clear within each area/care setting.

For management of blood and body fluid spillages see Appendix 9.

Further information can be found in the management of blood and body fluid literature review.

Healthcare providers should ensure that any polymer gel for non-patient use (eg spill kits, controlled drug destruction, use by cleaning staff) is kept secure and away from patients. See National Patient Safety Alert - NatPSA/2019/002/NHSPS.

1.9 Safe disposal of waste (including sharps)

HTM 07:01 Waste Management Guidance contains the regulatory waste management guidance for NHS England including waste classification, segregation, storage, packaging, transport, treatment and disposal.

Health and Safety (Sharp Instruments in Healthcare) Regulations 2013 outline the regulatory requirements for employers and contractors in the healthcare sector in relation to the safe disposal of sharps.

Definitions

Healthcare (including clinical) waste:

a) Any waste which consists wholly or partly of human or animal tissue, blood or other body fluids, excretions, drugs or other pharmaceutical products, swabs or dressings, syringes, needles or other sharp instruments, being

waste which unless rendered safe may prove hazardous to any person coming into contact with it.

b) Any other waste arising from medical, nursing, dental, veterinary, pharmaceutical or similar practice, investigation, treatment, care, teaching or research, or the collection of blood for transfusion, being waste which may cause infection to any person coming into contact with it.

Hazardous waste:

Waste that is harmful to human health or the natural environment; the Hazardous Waste (England) Regulations 2005 Annex 1 specifically lists items that are considered hazardous waste.

Table 1: Categories of waste and segregation at source

Clinical waste as (a) above	Black stripe (tiger) bag	Land fill
Clinical waste as (b) above: non-infectious (offensive)	Orange (sharps box)	For treatment
Category A Hazardous as described above	Yellow (sharps box)	For incineration
Domestic	Black bags	Land fill

Safe waste disposal at care area level:

Always dispose of waste:

- immediately and as close to the point of use as possible; and
- into the correct segregated colour coded UN 3291 approved waste bag or container (sharps box).
- Liquid waste, eg blood must be rendered safe by adding a self-setting gel or compound before placing in an orange lidded leak proof bin.
- Waste bags must be no more than 3/4 full and no more than the UN approved weight; and use a ratchet tag/or tape (for healthcare waste bags only) using a ‘swan neck’ to close.
- Store all waste in a designated, safe, lockable area while awaiting uplift. Uplift schedules must be acceptable to the care area and there should be no build-up of waste receptacles.

- Local guidance on management of waste at care level, eg domiciliary settings should be followed.

Sharps containers (for safety devices, refer to section 1.10)

Sharps containers must:

- have a handle and temporary closure mechanism, employed when box is not in use
- be disposed of when the manufacturers' fill line is reached
- be labelled with point of origin and date of assembly and disposal. Where re-usable sharps containers are used, organisations must have a protocol in place to assure themselves of safe use and reprocessing.

Further information can be found in the safe disposal of waste literature review.

1.10 Occupational safety: prevention of exposure (including sharps injuries)

The Health and Safety (Sharp Instruments in Healthcare) Regulations 2013 outline the regulatory requirements for employers and contractors in the healthcare sector in relation to: arrangements for the safe use and disposal of sharps; provision of information and training to employees; investigations and actions required in response to work related sharps injuries.

There is a potential risk of transmission of a Blood Borne Virus (BBV) from a significant occupational exposure and staff must understand the actions they should take when a significant occupational exposure incident takes place. **There is a legal requirement to report all sharps injuries and near misses to line managers/employers.**

A significant occupational exposure is:

- a percutaneous injury eg injuries from needles, instruments, bone fragments, or bites which break the skin; and/or
- exposure of broken skin (abrasions, cuts, eczema, etc); and/or
- exposure of mucous membranes including the eye from splashing of blood or other high risk body fluids.

For the management of an occupational exposure incident see Appendix 10.

Safety devices

The European Union Council Directive 2010/32/EU. Framework agreement on prevention of sharps injuries in the hospital and healthcare sector is concerned with reducing and eliminating the number of ‘sharps’ related injuries which occur within healthcare. Its basic guidance is:

- If a sharp instrument is to be used, then a non-sharp alternative is to be sourced and used.
- If a non-sharp alternative is not available, then a safety device is to be sourced and used.
- If a safety device is not available then all available risk management processes should be employed such as sticky mats, sharps bins, safety procedures and training.

Sharps handling must be assessed, kept to a minimum and eliminated, if possible, with the use of approved safety devices.

- Manufacturers’ instructions for safe use and disposal must be followed.
- Needles must not be re-sheathed/recapped or disassembled after use.
- Sharps must not be passed directly hand to hand.
- Used sharps must be discarded at the point of use by the person generating the waste.
- Always dispose of needles and syringes as 1 unit.
- If a safety device is being used safety mechanisms must be deployed before disposal.

When transporting sharps boxes for community use these must be transported safely with the use of temporary closures.

Further information can be found in occupational exposure management (incl. sharps) literature review.

Chapter 2: Transmission based precautions (TBPs)

SICPs may be insufficient to prevent cross transmission of specific infectious agents and additional precautions called “Transmission Based Precautions” (TBP) may be required when caring for patients with known / suspected infection or colonisation.

Transmission Based Precautions are categorised by the route of transmission of infectious agents (some infectious agents can be transmitted by more than one route).

Clinical judgement and decisions should be made by staff on what additional precautions are required and this will be based on:

- suspected/known infectious agent
- severity of the illness caused
- transmission route of the infectious agent
- care setting and procedures undertaken.

Type of precautions:

Contact precautions:

Used to prevent and control infections that spread via direct contact with the patient or indirectly from the patient’s immediate care environment (including care equipment). This is the most common route of cross-infection transmission.

Droplet precautions:

Measures used to prevent, and control infections spread over short distances (at least 1 metre) via droplets from the respiratory tract of one individual directly onto a mucosal surface or conjunctivae of another individual. Droplets penetrate the respiratory system to above the alveolar level.

Airborne precautions:

Measures used to prevent, and control infection spread without necessarily having close patient contact via aerosols from the respiratory tract of one individual directly

onto a mucosal surface or conjunctivae of another individual. Aerosols can penetrate the respiratory system to the alveolar level.

The traditional modes of transmission for respiratory infectious agents as defined pre-pandemic are unlikely to be as delineated as is described in the scientific literature, ie, droplet or airborne transmission and the application of TBPs may differ depending on the setting and the known or suspected infectious agent. Applications of TBPs should be considered within the framework of the hierarchy of controls. Setting-specific risk assessment tools are available to support organisations in applying the HoC Coronavirus » Every action counts (england.nhs.uk).

Appendix 11 provides details of the type of precautions, optimal patient placement, isolation requirement and respiratory precautions required.

Further information on Transmission Based Precautions can be found in the definitions of Transmission Based Precautions literature reviews.

NB During the COVID-19 pandemic universal masking in healthcare and increased physical distancing were introduced as additional IPC measures. These measures are not included in this version of the NIPCM as it is currently covered by UK IPC Guidance as published by UKHSA.

2.1 Patient placement / assessment of infection risk

The potential for transmission of infection must be assessed when a patient enters a care area. If hospitalised/in a care home setting, this should be continuously reviewed throughout the stay/period of care. The assessment should influence patient placement decisions in line with clinical/care need(s).

Patients who may present a cross-infection risk in any setting includes those:

- with diarrhoea, vomiting, an unexplained rash, fever or respiratory symptoms
- known to have been previously positive with multidrug-resistant organisms (MDRO) eg MRSA, CPE
- who have been an inpatient in any hospital in the UK or abroad or are a known epidemiological link to a carrier of CPE.

Isolation facilities should be prioritised depending on the known/suspected infectious agent (refer to the aides memoire in this document – appendices 11a and 11b).

All patient placement decisions and assessment of infection risk (including isolation requirements) must be clearly documented in the patient notes and provided in patient handovers with other healthcare/ care providers.

The clinical judgement and expertise of the staff involved in a patient's management and the Infection Prevention and Control Team (IPCT) should be sought, particularly for the application of TBPs, eg isolation prioritization, when single rooms are in short supply.

Single room isolation in hospital settings:

- Isolation of infectious patients can be in specialised isolation facilities, single room isolation, cohorting of infectious patients where appropriate, ensuring that they are separated by at least 3 feet (1 metre) with the door closed.
- Signage should be used on doors/areas to communicate isolation requirements and prevent entry of unnecessary visitors, non-essential staff. Patient confidentiality must be maintained.
- Infectious patients should only be transferred to other departments if clinically necessary. If the patient has an infectious agent transmitted by the airborne/droplet route, then if possible/tolerated the patient should wear a surgical face mask during transfer.
- Receiving department/hospital and transporting staff must be aware of the necessary precautions.
- Isolation room doors should remain closed, if this is not possible, eg paediatrics, there should be a documented risk assessment.

Single room isolation in care settings with or without nursing care:

- Residents should remain in their bedroom while considered infectious and the door should remain closed (if unable to isolate this should be documented).
- If transfer to hospital is required, ambulance services and the hospital admission area should be informed of the infectious status of the resident.

Advice on resident's clinical management should be sought from the GP and the local health protection unit infection prevention team.

- Avoid unnecessary transfer of residents within/between care areas.

Primary care/outpatient settings:

Patients attending with suspected/known infection/colonisation should be prioritised for assessment/treatment, eg scheduled appointments at the start or end of the clinic session.

Infectious patients should be separated from other patients while awaiting assessment and during care management by at least 3 feet (1m).

If transfer from a primary care facility to hospital is required, ambulance services should be informed of the infectious status of the patient.

Staff cohorting: consider assigning a dedicated team of care staff to care for patients in isolation/cohort rooms/areas as an additional infection control measure during outbreaks/incidents. This can only be implemented if there are sufficient levels of staff available (so as not to have a negative impact on non-affected patients' care).

Before discontinuing isolation:

Individual patient risk factors should be considered (eg there may be prolonged shedding of certain microorganisms in immunocompromised patients).

2.2 Safe management of patient care equipment in an isolation room/cohort area

- Use single-use items if possible.
- Reusable non-invasive care equipment should be dedicated to the isolation room/cohort area and decontaminated prior to use on another patient.
- An increased frequency of decontamination should be considered for reusable non-invasive care equipment when used in isolation/cohort areas.
- For how to decontaminate non-invasive reusable equipment see Appendix 7.

2.3 Safe management of the care environment

The care environment must be:

- visibly clean, free from non-essential items and equipment to facilitate effective cleaning
- well maintained, in a good state of repair and with adequate ventilation for the clinical specialty.

Equipment used for environmental decontamination must be either single-use or dedicated to the affected area then decontaminated or disposed of following use eg cloths, mop heads.

Environmental decontamination: enhanced cleaning

Hospital setting:

Patient isolation/cohort rooms/area must be decontaminated **at least daily,** this may be increased on the advice of IPCTs/. These areas must be decontaminated using either:

- a combined detergent/disinfectant solution at a dilution of 1,000 parts per million available chlorine (ppm available chlorine (av.cl.)); or
- a general-purpose neutral detergent in warm water followed by solution of 1,000ppm av.cl.

Alternative cleaning agents/disinfectant products may be used with agreement of the local IPC team.

Employers must ensure that cleaning products are managed in accordance with the COSHH regulations - Control of substances hazardous to health (COSHH) - health and safety topics in cleaning (hse.gov.uk).

Manufacturers' guidance and recommended product 'contact time' must be followed for all cleaning/disinfection solutions.

Increased frequency of decontamination/cleaning schedules should be incorporated into the environmental decontamination schedules for areas where there may be higher environmental contamination rates, eg:

- toilets/commodes particularly if patients have diarrhoea; and
- “frequently touched” surfaces eg door/toilet handles, locker tops, over bed tables and bed rails.

Vacated rooms should also be decontaminated following an AGP. Clearance of infectious particles after an AGP is dependent on the ventilation and air change within the room. This is a minimum of 20 minutes in hospital settings where the majority of these procedures occur. In general wards and single rooms there should be a minimum of 6 air changes per hour, in negative-pressure isolation rooms there should be a minimum of 10 air changes per hour. Advice should be sought from IPCT.

Primary care/outpatient settings:

The extent of decontamination between patients will depend on the duration of the consultation/assessment, the patients presenting symptoms and any visible environmental contamination.

Terminal decontamination

Following patient transfer, discharge, or once the patient is no longer considered infectious, remove from the vacated isolation room/cohort area, all:

- healthcare waste and any other disposable items (bagged before removal from the room)
- bedding/bed screens/curtains - manage as infectious linen (bagged before removal from the room)
- reusable non-invasive care equipment (decontaminated in the room prior to removal) Appendix 7.

The room should be decontaminated using either:

- a combined detergent disinfectant solution at a dilution (1,000ppm av.cl.); or
- a general-purpose neutral detergent in warm water followed by a solution of 1,000ppm av.cl. (or alternative locally agreed cleaning product)

Rooms must be cleaned from highest to lowest points and from least to most contaminated points.

Organisations can consider using Hydrogen Peroxide Vapour disinfection or ultra-violet light technology for specific pathogens. Manufacturers' guidance and recommended product "contact time" must be followed for all cleaning/disinfection solutions.

There is no requirement for terminal cleaning of outpatient/theatre recovery unless advised by the IPCT.

2.4 Personal protective equipment (PPE): respiratory protective equipment (RPE)

Personal Protective Equipment (PPE) must still be used in accordance with SICPs when using Respiratory Protective Equipment (RPE). See Chapter 1.4 for PPE use for SICPs.

Where it is not reasonably practicable to prevent exposure to a substance hazardous to health (as may be the case where healthcare workers are caring for patients with suspected or known airborne pathogens), the hazard must be adequately controlled by applying protection measures appropriate to the activity and consistent with the assessment of risk.

If the hazard is unknown the clinical judgement and expertise of IPC staff is crucial and the precautionary principle should apply.

Respiratory Protective Equipment (RPE) ie, a filtering face piece (FFP) must be considered when a patient is admitted with a known/suspected infectious agent/disease spread wholly or partly by the airborne route and when carrying out aerosol generating procedures (AGPs) on patients with a known/suspected infectious agent spread wholly or partly by the airborne or droplet route.

Staff in primary care/outpatient settings or care homes would not normally be required to wear an FFP3 for routine care unless an AGP is being performed when staff should wear a fit tested, FFP3 respirator.

The decision to wear an FFP3 respirator/hood should be based on clinical risk assessment eg task being undertaken, the presenting symptoms, the infectious state of the patient, risk of acquisition and the availability of treatment.

For a list of organisms spread wholly or partly by the airborne (aerosol) or droplet routes see Appendix 11.

National Priority Risk Categorisation for fit testing with FFP3

The following risk categorisation is the minimum requirement for staff groups that require FFP3 fit testing. Healthcare organisations can add to this, for example where there are high risk units. This categorisation is inclusive of out of hours services

Level 1 – Preparedness for business as usual

Staff in clinical areas most likely to provide care to patients who present at healthcare facilities with an infectious pathogen spread by the airborne route; and/or undertake aerosol generating procedures ie, A&E, ICU, paediatrics, respiratory, infectious diseases, anaesthesia, theatres, chest physiotherapists, Special Operations Response Team (Ambulance), A&E, ambulance staff, bronchoscopy staff, resuscitation teams, mortuary staff.

Level 2 – Preparedness in the event of emerging threat

Staff in clinical setting likely to provide care to patients admitted to hospital in the event of an emerging threat eg Medical receiving, Surgical, Midwifery and Specialty wards, all other ambulance transport staff. In the event of an *'Epidemic/Pandemic'* Local Assessment as per organizations preparedness plans apply.

FFP3 respirator or powered respirator hood:

- may be considered for use by visitors if there has been no previous exposure to the infected person or infectious agent; **but**
- must never be worn by an infectious patient(s) due to the nature of the respirator filtration of incoming air not expelled air
- powered respirator hoods are an alternative to tight-fitting FFP3 respirators for example when fit testing cannot be achieved
- powered hoods can be single use (disposable) or reusable (with a decontamination schedule, see note) and must be fluid resistant; the filter

must be enclosed with the exterior and the belt able to withstand disinfection with 10,000ppm av.cl.

- valved respirators are not suitable for use when sterility over the surgical field is required (unless they are shrouded) and this must be assessed locally, eg theatres.

All tight fitting RPE ie, FFP3 respirators must be:

- single-use (disposable) and fluid-resistant
- fit tested on all healthcare staff who may be required to wear a respirator to ensure an adequate seal/fit according to the manufacturers' guidance
- fit checked (according to the manufacturers' guidance) every time a respirator is donned to ensure an adequate seal has been achieved
- compatible with other facial protection used ie protective eyewear so that this does not interfere with the seal of the respiratory protection. Regular corrective spectacles are not considered adequate eye protection.

For any facial hair, the hair must not cross or interfere with the respirator sealing surface. If the respirator has an exhalation valve, hair within the sealed mask area should not impinge upon or contact the valve. You must pass a face fit test for any tight-fitting respiratory protective equipment that you need to use for work activities. Examples of facial hair styles that are compatible with FFP3 respirators can be found here.

Please note: reusable respirators including PAPR can be utilised by individuals if they comply with HSE recommendations. These should be decontaminated and maintained according to manufacturer's instructions.

Further information regarding fitting and fit checking of respirators can be found on the Health and Safety Executive website at: http://www.hse.gov.uk/respiratory-protective-equipment/basics.htm

Removal (doffing) of PPE

- In the absence of an anteroom/lobby remove FFP3 respirators and eye/face protection in a safe area (eg outside the isolation/cohort room/area).
- All other PPE should be removed in the patient care area.

For the recommended method of putting on and removing PPE, see UKHSA guides.

Further information can be found in Respiratory Protective Equipment (RPE) literature review and PPE for Infectious Diseases of High Consequence (IDHC) literature review.

2.5 Aerosol generating procedures

Aerosol generating procedures (AGPs) are medical procedures that can result in the release of aerosols from the respiratory tract. The criteria for an AGP are a high risk of aerosol generation and increased risk of transmission (from patients with a known or suspected respiratory infection).

The list of medical procedures that are considered to be aerosol generating and associated with an increased risk of respiratory transmission is:

- **awake* bronchoscopy** (including awake tracheal intubation)
- **awake* ear, nose, and throat** (ENT) airway procedures that involve respiratory suctioning
- **awake* upper gastro-intestinal endoscopy**
- **dental procedures** (using high speed or high frequency devices, for example ultrasonic scalers/high speed drills)
- **induction of sputum**
- **respiratory tract suctioning****
- **surgery or post-mortem procedures** (like high speed cutting / drilling) likely to produce aerosol from the respiratory tract (upper or lower) or sinuses.
- tracheostomy procedures (insertion or removal).

*Awake including ‘conscious’ sedation (excluding anaesthetised patients with secured airway)

** The available evidence relating to respiratory tract suctioning is associated with ventilation. In line with a precautionary approach, open suctioning of the respiratory tract regardless of association with ventilation has been incorporated into the current (COVID-19) AGP list. It is the consensus view of the UK IPC cell that only

open suctioning beyond the oro-pharynx is currently considered an AGP, that is oral/pharyngeal suctioning is not an AGP.

2.6 Infection prevention and control when caring for the deceased

The principles of SICPs and TBPs continue to apply while deceased individuals remain in the care environment. This is due to the ongoing risk of infectious transmission via contact although the risk is usually lower than for living patients.

Washing and/or dressing of the deceased should be avoided if the deceased is known or suspected to have an invasive streptococcal infection, viral haemorrhagic fevers or other Group 4 infectious agents. See Appendix 12.

Staff should advise relatives of the precautions following viewing and/or physical contact with the deceased and also when this should be avoided.

Deceased individuals known or suspected to have a Hazard Group 4 infectious agent should be placed in a sealed double plastic body bag with absorbent material placed between each bag. The surface of the outer bag should be disinfected with 1000ppm av.cl before being placed in a robust sealed coffin.

Post-mortem examination should not be performed on a deceased individual known or suspected to have Hazard Group 4 infectious agents. See Appendix 12. Blood sampling can be undertaken in the mortuary by a competent person to confirm or exclude this diagnosis. Refer to Section 2.4 for suitable PPE.

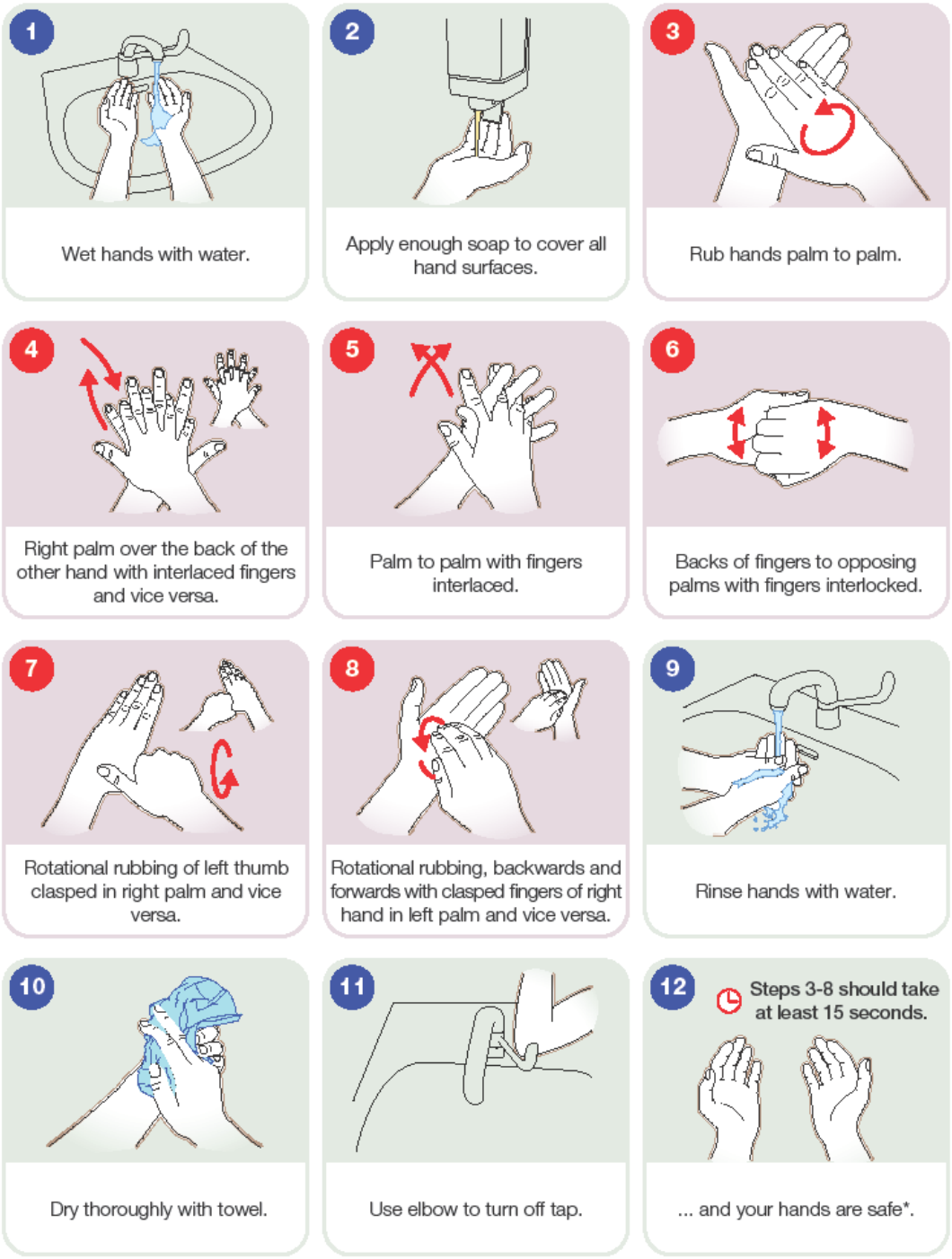
Refer to HSG283 – managing infectious risk when handling the deceased for more information.

Appendix 1: Best practice – How to hand wash, step-by-step images

UK Health Security Agency

Best Practice: How to hand wash step by step images

Steps 3-8 should take at least 15 seconds.



Adapted from the World Health Organization/Health Protection Scotland

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*Any skin complaints should be referred to local occupational health or GP.

Appendix 2: Best practice – How to handrub, step-by-step images

UK Health Security Agency

Best Practice: How to handrub step by step images

Adapted from the World Health Organization/Health Protection Scotland

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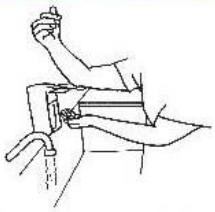
Appendix 3: Best practice – surgical hand antisepsis using antimicrobial soap

1

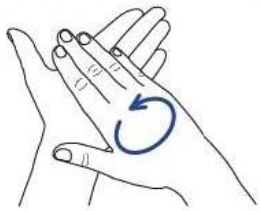
Wet hands and forearms*

2



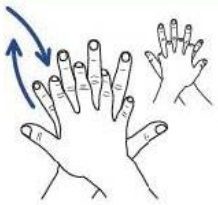
Put antimicrobial liquid soap onto the palm of each hand/arm using the elbow of your other arm to operate the dispenser

3



Rub hands palm to palm. Steps 3 - 8 should take a minimum of 2 minutes

4

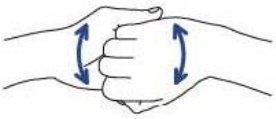


Right palm over the back of the other hand with interlaced fingers and vice versa.

5

Palm to palm with fingers interlaced.

6

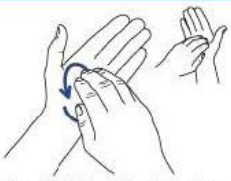


Backs of fingers to opposing palms with fingers interlocked.

7

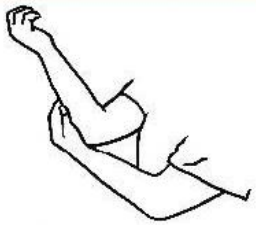
Rotational rubbing of left thumb clasped in right palm and vice versa.

8



Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa. Rinse hands between steps 8 - 9, passing them through the water in one direction only.

9



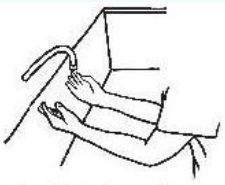
Put antimicrobial liquid soap onto the palm of your left hand using the elbow of your other arm to operate the dispenser. Use this to scrub the right arm for 1 minute using a rotational method keeping the hand higher than the arm at all times.

10

Repeat the process for the other hand and arm keeping hands above elbows at all times.

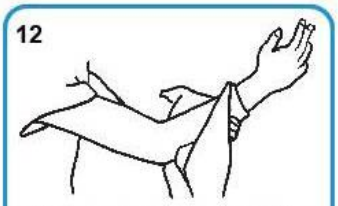
If the hand touches anything at any time, the scrub must be lengthened by 1 minute for the area that has been contaminated.

11



Rinse hands and arms by passing them through the water in one direction only, from fingertips to elbow. Do not move the arm back and forth through the water.

12



Hold hands above the elbow. Use one sterile, disposable towel per hand and arm. Blot the skin of the hand, then use a corkscrew movement to dry from the hand to the elbow.
The towel must not be returned to the hand once the arm has been dried and must be discarded immediately.

*Nails should be cleaned using a soft, single-use disposable nail brush or nail pick before the first scrub of the day or if visible dirty. Any skin complaints should be referred to local occupational health or GP.

NHS SCOTLAND

Acknowledgement: With thanks to staff at the Golden Jubilee Foundation for their assitance producing this appendix.

Part of the National Infection Prevention and Control Manual (NIPCM), available at: http://www.nipcm.hps.scot.nhs.uk/. Produced by: Health Protection Scotland, November 2016.

Appendix 4: Best practice – surgical hand rub technique using alcohol based hand rub (ABHR)

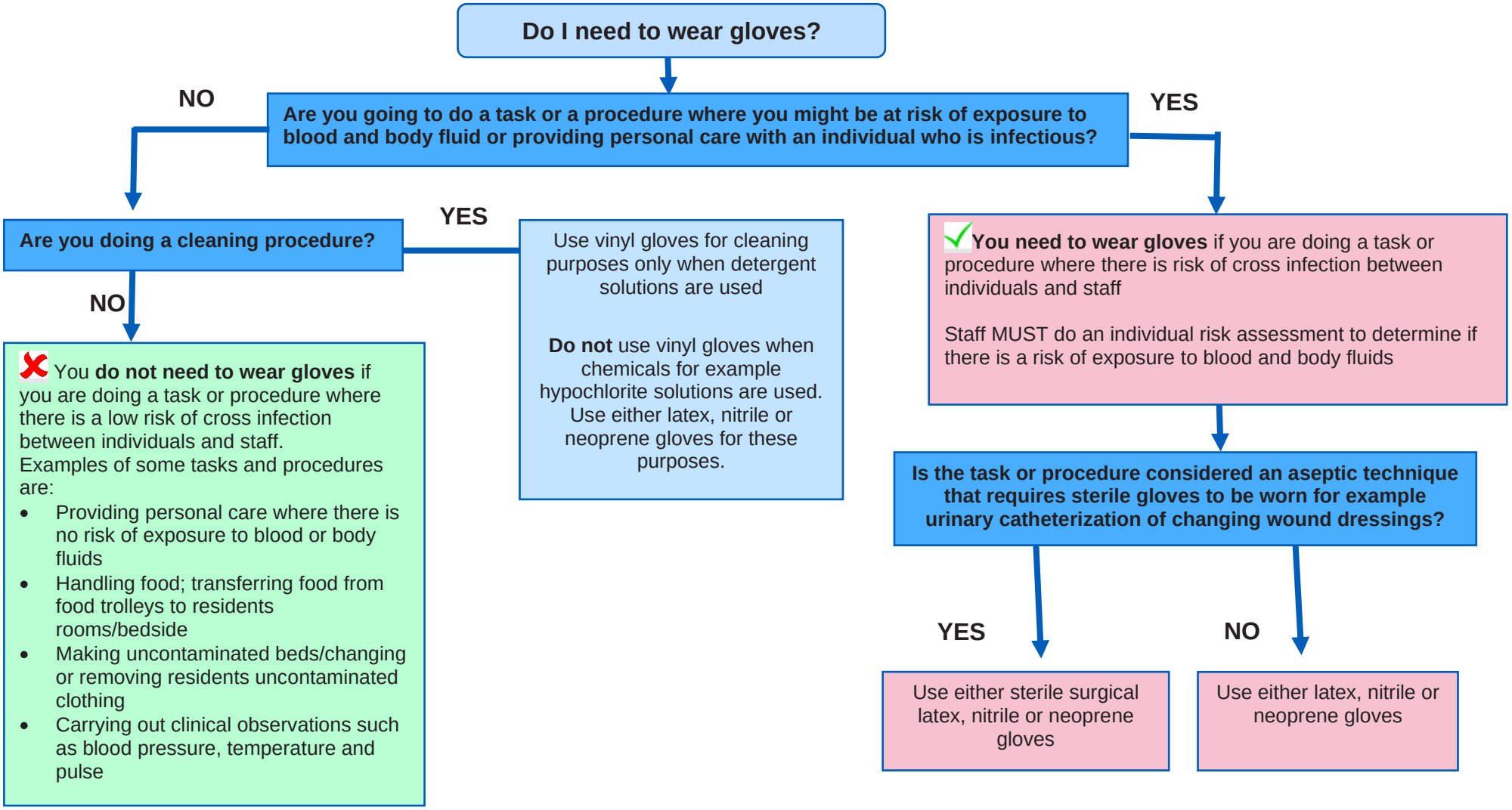
- The hand rubbing technique for surgical hand preparation must be performed on clean, dry hands.
- On arrival in the operating theatre and after having donned theatre clothing (cap/hat/bonnet and mask), hands must be washed with soap and water.
- After the operation when removing gloves, hands must be rubbed with an alcohol-based formulation or washed with soap and water if any residual talc or biological fluids are present (e.g. the glove is punctured).
- Surgical procedures may be carried out one after the other without the need for hand washing, provided that the hand rubbing technique for surgical hand preparation is followed (images 1 to 15).

Adapted from the World Health Organization

Germs. Wash your hands of them.

NHS SCOTLAND

Appendix 5: Glove use and selection



Appendix 6: Putting on and removing PPE (donning and doffing)

Public Health England

Guide to donning and doffing PPE: Droplet Precautions

for health and social care settings

Donning or putting on PPE

Before putting on the PPE, perform hand hygiene. Use alcohol handrub or gel or soap and water. Make sure you are hydrated and are not wearing any jewellery, bracelets, watches or stoned rings.

1. Put on your plastic apron, making sure it is tied securely at the back.

2. Put on your surgical face mask, if tied, make sure securely tied at crown and nape of neck. Once it covers the nose, make sure it is extended to cover your mouth and chin.

3. Put on your eye protection if there is a risk of splashing.

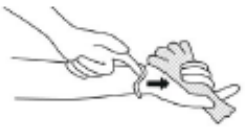
4. Put on non-sterile nitrile gloves.

5. You are now ready to enter the patient area.

Doffing or taking off PPE

Surgical masks are single session use, gloves and apron should be changed between patients.

1. Remove gloves, grasp the outside of the cuff of the glove and peel off, holding the glove in the gloved hand, insert the finger underneath and peel off second glove.



2. Perform hand hygiene using alcohol hand gel or rub, or soap and water.

3. Snap or unfasten apron ties the neck and allow to fall forward.

Snap waist ties and fold apron in on itself, not handling the outside as it is contaminated, and put into clinical waste.

4. Once outside the patient room. Remove eye protection.

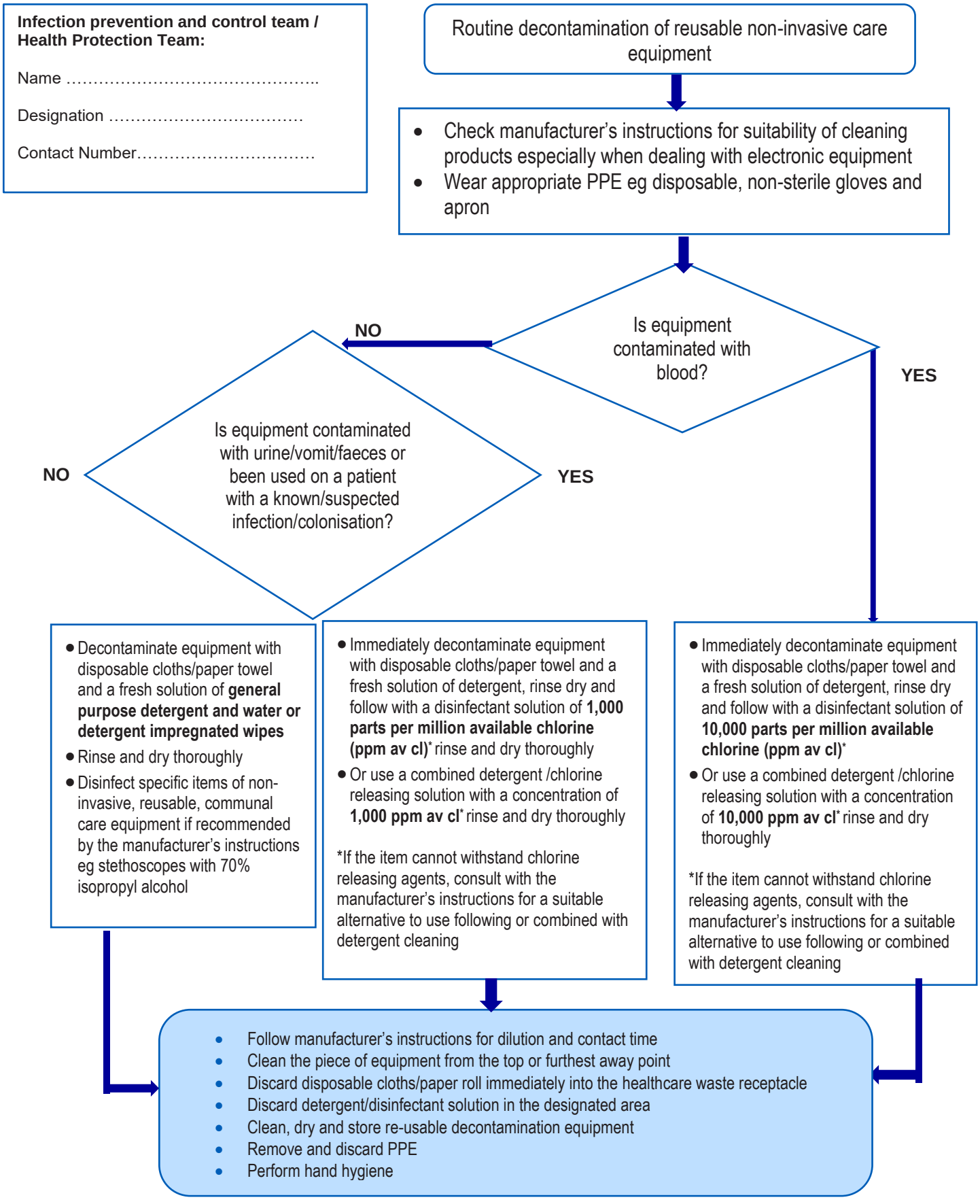
5. Perform hand hygiene using alcohol hand gel or rub, or soap and water.

6. Remove surgical mask.

7. Now wash your hands with soap and water.

Please refer to the PHE standard PPE video in the COVID-19 guidance collection:
www.gov.uk/government/publications/covid-19-personal-protective-equipment-use-for-non-aerosol-generating-procedures

Appendix 7: Best practice – decontamination of reusable non-invasive care equipment



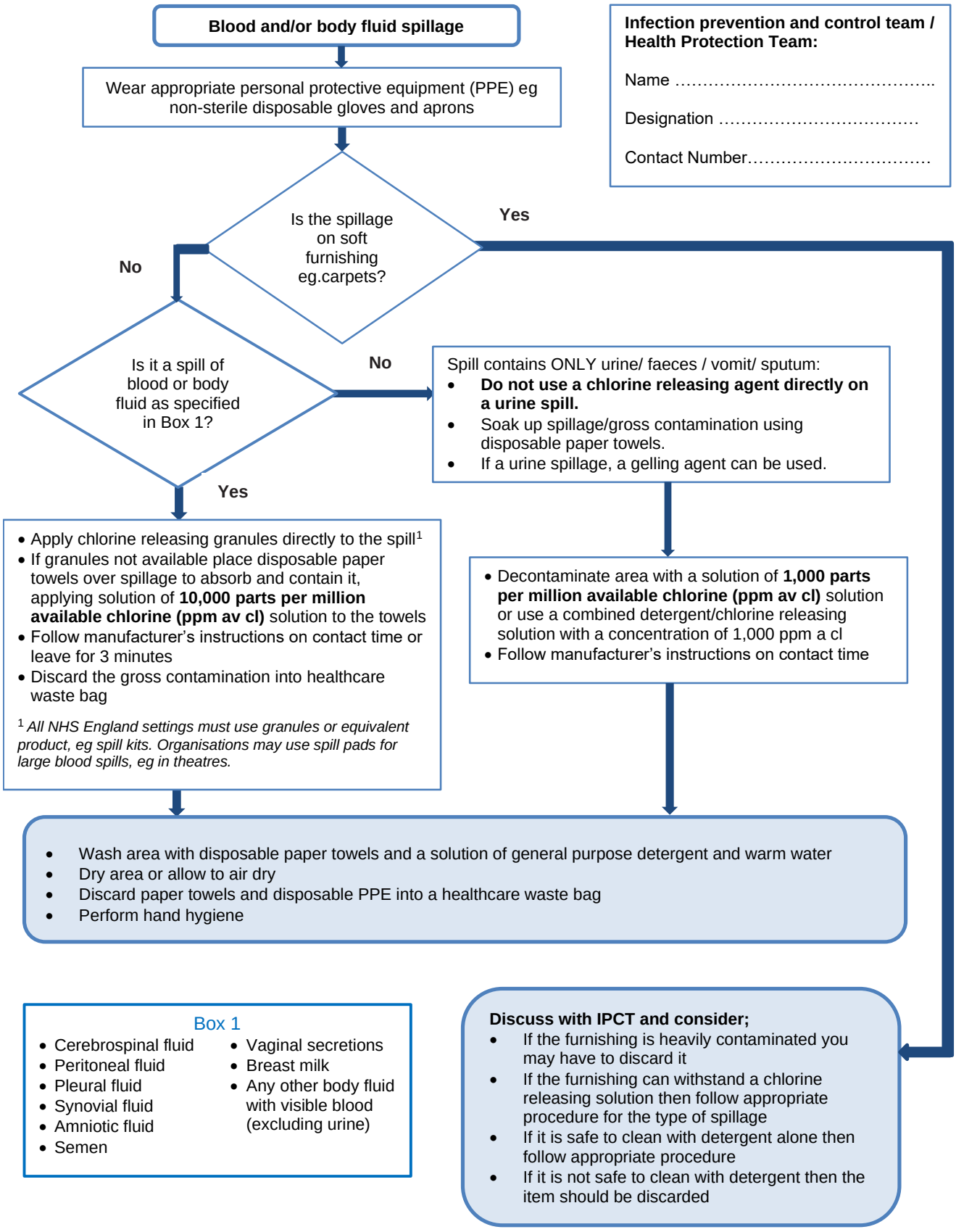
Appendix 8: Best practice – linen bagging and tagging

CATEGORY	INNER BAG	LINEN BAG/HAMPER
Used linen (All used linen in the care setting not contaminated by blood or body fluids)	**None required**	
Infectious linen (All linen used by a person known or suspected to be infectious and linen that is contaminated with blood or body fluids)	**Water soluble or soluble seam (alginate bag)** placed into a polythene bag	
Heat-labile linen Linen that may be damaged (shrinkage/ stretching) by thermal disinfection.	**If 'used' none required.** **If 'infectious' treat as above.**	

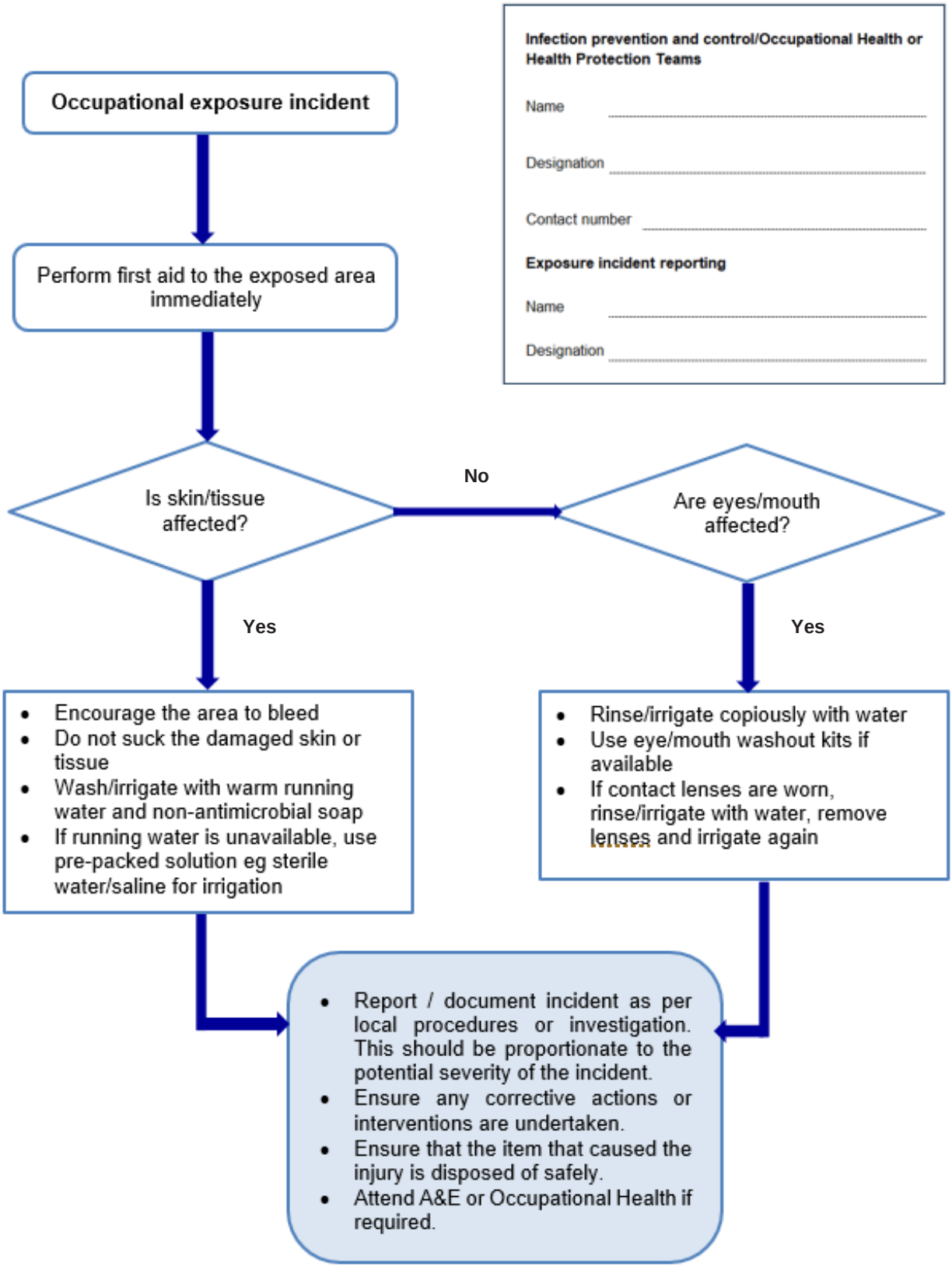
Ensure all linen bags are:
- **Securely tied**
- **Not overfilled**
- **Tagged with hospital, ward/department and date.**

If linen processing has been outsourced to an industrial service provider, follow the categorisation system and colour coding for 'used' and 'infectious' linen set out by the service provider.

Appendix 9: Best practice – management of blood and body fluid spills



Appendix 10: Best practice – management of occupational exposure incidents



Appendix 11a: Aide memoire for optimal patient placement and respiratory protective equipment (RPE) for infectious agents in hospital inpatients (based on evidence from WHO, CDC and UKHSA)

The clinical judgement and expertise of the IPC and Health Protection Teams should be sought for novel, unusual pathogens or where an increase in cases has been detected in any care setting. Advice can also be sought from the bacterial reference departments at UKHSA for rare / unusual pathogens, exceptional phenotypes or for advice regarding typing of outbreak strains.

The following table outlines the transmission-based precautions (TBPs) required for several infectious agents / diseases which will minimise cross transmission events from and between patients, and healthcare workers. The details included in the table below are drawn from published evidence from a number of validated sources, for example, WHO, CDC, and UKHSA. **The table is intended to function as a quick reference guide, is not exhaustive, and is not intended to replace appropriate risk assessment and clinical judgement or formal assessments by public health agencies**. The table summarises:

- Optimal patient placement while the patient is considered infectious; and
- The recommended RPE (recognising other PPE is required) to minimise risk of cross infection to staff, patients and visitors.
- Decisions made by staff regarding use/non-use of RPE will depend on the completion of clinical risk assessment, considering presenting symptoms, available treatments, the risk of acquisition, the level of interaction, task to be performed, and / or the anticipated level of exposure to blood and / or other body fluids.
- In the hospital setting patients with suspected or confirmed respiratory symptoms should, whenever possible, be placed in a single room, ideally with en-suite facilities If a single / isolation room is not available, cohort patients with confirmed

respiratory infection with other patients confirmed to have the same infectious agent. Patients with suspected or confirmed respiratory infection should be provided with a surgical facemask (Type II or Type IIR) to be worn in multi-bedded bays and communal areas if this can be tolerated, and where the patient cannot be isolated in a single room.

- **Note**: *The distinction between droplet and aerosol transmission is not always clearly defined. A clinical risk assessment should be performed using the hierarchy of controls to inform the assessment and should include evaluation of the ventilation in the area, operational capacity, and prevalence of infection in the local area. Staff should be provided with training on the correct use of RPE. Current guidance is that an FFP3 respirator must be worn by staff when caring for patients with a suspected or confirmed infection spread by the airborne route, when performing AGPs on a patient with a suspected or confirmed infection spread by the droplet or airborne route, and when deemed necessary after risk assessment.

Suspected or confirmed Pathogen	Disease	Transmission based precautions (TBPs) required	Optimal placement while patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers while patient is considered infectious[3]	Notifiable under Public Health Act 1984 and Health Protection Regulations 2010[4]
Acinetobacter baumannii	Pneumonia, bacteraemia, skin and soft tissue infections.	**Contact**	Single en-suite room in high risk settings eg 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
Bacillus anthracis	Respiratory, gastrointestinal or cutaneous Anthrax	**Contact**	Single en-suite room	No requirement for RPE [6]	Yes

Suspected or confirmed Pathogen	Disease	Transmission based precautions (TBPs) required	Optimal placement while patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers while patient is considered infectious[3]	Notifiable under Public Health Act 1984 and Health Protection Regulations 2010[4]
Bacillus cereus	Gastroenteritis, sepsis, pneumonia, endocarditis, central nervous system (CNS) and ocular infections	**Contact**	Single en-suite room	No requirement for RPE	Yes
Bordetella pertussis	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[5]	**Yes**
Candida auris	Ear, wound and bloodstream infection	**Contact**	Single en-suite room in high risk settings eg ICU/PICU/NICU, oncology/haematology	No requirement for RPE	No
Carbapenemase producing Enterobacterales (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
Chlamydia pneumoniae	Pneumonia	**Droplet**	Single en-suite room in high risk settings eg ICU/PICU/NICU, oncology/haematology	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	No
Clostridioides difficile	*Clostridioides difficile* infection (CDI)	**Contact**	Single en-suite room	No requirement for RPE	No
Coronavirus[1] (Seasonal) including SARS- CoV-2	Respiratory symptoms including asymptomatic presentations COVID-19	**Droplet/Airborne * please see note above**	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs* please see note above	No

Suspected or confirmed Pathogen	Disease	Transmission based precautions (TBPs) required	Optimal placement while patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers while patient is considered infectious[3]	Notifiable under Public Health Act 1984 and Health Protection Regulations 2010[4]
Corynebacterium diphtheria or *Corynebacterium ulcerans*	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 D58	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 eg *Salmonella* spp.	Gastroenteritis	**Contact**	Single en-suite room	Fluid resistant surgical facemask (FRSM) **if vomiting is present.**	(Some GI Infections are notifiable. Refer to guidance)
Haemophilus influenzae (all invasive*)	Epiglottitis, *meningitis, pneumonia, *bacteraemia	**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[5]	Yes *Only
Hepatitis A virus	Hepatitis, Gastroenteritis	**Contact**	Single en-suite room	Fluid resistant surgical facemask (FRSM) **if vomiting is present.**	Yes
Herpes zoster (Shingles) (varicella-zoster) [2]	Shingles (vesicle fluid)	**Contact**	Single en-suite room If lesions cannot be covered	No requirement for RPE	Yes
	Disseminated zoster or Chickenpox	**Droplet/airborne**	Isolation room/suite	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	Yes
Influenza virus (Endemic strains)	Influenza	**Droplet**	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	Yes

Suspected or confirmed Pathogen	Disease	Transmission based precautions (TBPs) required	Optimal placement while patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers while patient is considered infectious[3]	Notifiable under Public Health Act 1984 and Health Protection Regulations 2010[4]
Measles virus[2]	Measles (rubeola)	**Droplet/ Airborne**	Isolation room/suite	FFP3 or Hood for routine care and AGPs	Yes
Methicillin resistant *Staphylococcus aureus* (MRSA)	Colonisation, or clinical infection (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	No
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
Mycobacterium tuberculosis complex	Extrapulmonary Tuberculosis	**Contact**	Single en-suite room	FFP3 or Hood for AGPs	Yes
	Pulmonary or laryngeal disease	**Airborne**	Isolation room/suite until patient has been established on appropriate antimicrobial treatment[5] 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[5] and always if the patient has MDR or XDR TB	Yes
Mycoplasma pneumoniae	Pneumonia	**Droplet**	Single en-suite room	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs	No
Neisseria meningitides	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[5]	Yes

Suspected or confirmed Pathogen	Disease	Transmission based precautions (TBPs) required	Optimal placement while patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers while patient is considered infectious[3]	Notifiable under Public Health Act 1984 and Health Protection Regulations 2010[4]
Norovirus	Winter vomiting disease	**Contact**	Single en-suite room	Fluid resistant surgical facemask (FRSM) **if vomiting is present.**	No (hospital outbreaks are reportable)
Panton Valentine Leukocidin (PVL) – positive *Staphylococcus aureus*	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
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
Pneumocystis jirovecii	Pneumonia	**Droplet**	Single en-suite room in high risk settings eg ICU/PICU/NICU, oncology/haematology	No requirement for RPE	No
Pseudomonas aeruginosa	Pneumonia, bacteraemia, wound or surgical site infections, catheter-associated urinary tract infections, conjunctivitis in neonates	**Droplet**	Single en-suite room in high risk settings eg 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

Suspected or confirmed Pathogen	Disease	Transmission based precautions (TBPs) required	Optimal placement while patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers while patient is considered infectious[3]	Notifiable under Public Health Act 1984 and Health Protection Regulations 2010[4]
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
Serratia marcescens	Pneumonia, bacteraemia, urinary tract infections, wound infections	**Contact**	Single en-suite room in high risk settings eg ICU/PICU/NICU, oncology/haematology	No requirement for RPE	No
Staphylococcus aureus (Enterotoxigenic)	Gastroenteritis, scalded skin syndrome	**Contact**	Single en-suite room (not required if lesions can be covered)	No requirement for RPE	No
Stenotrophomonas maltophilia	Bacteraemia, respiratory infections, urinary tract and surgical-site infections	**Contact**	Single en-suite room in high risk settings eg ICU/PICU/NICU, oncology/haematology	No requirement for RPE	No
Streptococcus pyogenes (Group A Strep)	Respiratory infection	**Droplet**	Single en-suite room (until patient has been established on appropriate antimicrobial treatment[5])	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs until patient established on appropriate antimicrobial treatment[5]	No
	Invasive Group A strep Bacteraemia, meningitis, wound infection/infection in other normally sterile site	**Contact**	Single en-suite room (until patient has been established on appropriate antimicrobial treatment[5])	No requirement for RPE	Yes
Streptococcus pneumoniae	Pneumonia	**Droplet**	Single en-suite room (until patient has been established on appropriate antimicrobial treatment[5])	Fluid resistant surgical facemask (FRSM) for routine care and FFP3 or Hood for AGPs until patient has been established on appropriate antimicrobial treatment[5]	Yes

Suspected or confirmed Pathogen	Disease	Transmission based precautions (TBPs) required	Optimal placement while patient is considered infectious and until resolution of symptoms	Respiratory protection (RPE) for healthcare workers while patient is considered infectious[3]	Notifiable under Public Health Act 1984 and Health Protection Regulations 2010[4]
	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[5])	No requirement for RPE	Yes (presence in the wound is not notifiable)
Varicella virus[2] See Herpes Zoster	Chickenpox	**Airborne**	Isolation room/suite	FFP3 or Hood for routine care and AGPs	Yes
Shiga-toxin reducing Escherichia coli (STEC) Verocytotoxigenic Escherichia coli (including E.coli O157) Haemolytic uraemic syndrome (HUS)	Gastroenteritis, haemolytic uremic syndrome, thrombotic thrombocytopaenic purpura.	**Contact**	Single en-suite room	No requirement for RPE	Yes

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 while 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 line with published infection control guidance.

Footnote 4

Registered medical practitioners (RMPs) have a statutory duty to notify the ‘proper officer’ at their local council or local health protection team (HPT) of suspected cases of certain infectious diseases.

Complete a notification form immediately on diagnosis of a suspected notifiable disease. Don’t wait for laboratory confirmation of a suspected infection or contamination before notification. Consult the UKHSA Notifiable Diseases poster (PDF, 1020KB, 1 page) for further information.

Send the form to the proper officer within 3 days, or notify them verbally within 24 hours if the case is urgent by phone, letter, encrypted email or secure fax machine.

If you need help, contact your local HPT using the postcode lookup. For more detail on reporting responsibilities of RMPs, see page 14 of Health Protection Legislation (England) Guidance 2010.

All proper officers must pass the entire notification to UKHSA within 3 days of a case being notified, or within 24 hours for urgent cases.

Footnote 5

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.

Footnote 6

Anthrax: during the bacteraemic phase split blood products should be removed immediately using sodium dichloroisocyanurate granules to prevent subsequent sporulation on contact with air / soil.

Appendix 11b Aide memoire for optimal patient placement and respiratory protective equipment (RPE) for high consequence infectious diseases

High Consequence Infectious Diseases

- Should be discussed immediately with specialist teams including health protection teams and the imported fever service, UKHSA which provides 24-hour, 7 days a week telephone access to expert clinical and microbiological advice. Hospital doctors across the UK can contact the IFS after discussion with the local microbiology, virology or infectious disease consultant.

- Once an HCID has been confirmed cases in England should be transferred rapidly to a designated HCID Treatment Centre.

HCID is defined according to the following criteria:

- acute infectious disease
- typically has a high case-fatality rate
- may not have effective prophylaxis or treatment
- often difficult to recognise and detect rapidly
- ability to spread in the community and within healthcare settings
- requires an enhanced individual, population and system response to ensure it is managed effectively, efficiently and safely

HCIDs are further divided into contact and airborne groups. Contact HCIDS are usually spread by direct contact with an infected patient or infected fluids, tissues and other materials, or by indirect contact with contaminated material and fomites. Airborne HCIDS are spread by respiratory droplets or aerosol transmission, in addition to contact routes of transmission. Specific infection prevention and control (IPC) measures are required for suspected and confirmed HCID cases, in all healthcare settings.

HCID	Pathogen	Predominant mechanism of spread	Optimal Placement while suspected cases	Required PPE	Notifiable under Public Health Act 1984 and Health Protection Regulations 2010.
Contact HCID	Argentine haemorrhagic fever (Junin virus) Bolivian haemorrhagic fever (Machupo virus) Crimean Congo haemorrhagic fever (CCHF) Ebola virus disease (EVD) Lassa Fever Lujo virus disease Marburg virus disease (MVD) Severe fever with thrombocytopaenia syndrome (SFTS).	**Contact**	Complete risk assessment to define possibility of HCID in suspected cases * Single side room with en-suite facilities / dedicated commode.	**Low possibility:** Gloves, plastic apron (Eye protection and fluid repellent surgical facemask for splash inducing procedures) **High Possibility:** Double Gloves Fluid repellent disposable gown, full length plastic apron over coverall / gown, Fluid repellent FFP3 respirator Fluid repellent footwear Eye protection Head cover	**Yes**

HCID	Pathogen	Predominant mechanism of spread	Optimal Placement while suspected cases	Required PPE	Notifiable under Public Health Act 1984 and Health Protection Regulations 2010.
Airborne HCID	Andes virus infection (hantavirus) Avian influenza A H7N9 and H5N1 Avian influenza A H5N6 and H7N7 Middle East respiratory syndrome (MERS) Monkeypox* Niapah virus infection Pneumonic plague (Yersinia pestis)* Severe acute respiratory syndrome (SARS).	**Unknown; assume airborne until further information available**	Single side room with en-suite, ideally under negative pressure	As a minimum FFP3 mask, gown, gloves and eye protection Additional contact measures may be required according to pathogen: See above for high possibility contact HCID	**Yes**

Refer to:

High consequence infectious diseases (HCID) - GOV.UK (www.gov.uk)

Viral haemorrhagic fever: ACDP algorithm and guidance on management of patients - GOV.UK (www.gov.uk)

VHF_Algo.pdf (publishing.service.gov.uk)

Appendix 12: Transmission based precautions for deceased patients with infection

As per section 2.5 of the NIPCM, the principles of SICPs and TBPs continue to apply while deceased individuals remain in the care environment. This is due to the ongoing risk of infectious transmission via contact although the risk is usually lower than for living patients. Additional precautions may be required depending on the organism and activities carried out (see table).

Infection	Causative agent	Hazard Group	Is a body bag needed[1] ?	Can the body be viewed?	Can post mortem be carried out?[2]	Can hygienic treatment be carried out?[3]	Can embalming be carried out?[2]
Airborne: small particles that can remain airborne with potential for transmission by inhalation							
Plague (Pneumonic and bubonic)	*Yersinia pestis*	3	Yes	Yes	If an appropriate facility is found	Consult specialist advice	Consult specialist advice
Tuberculosis	*Mycobacterium tuberculosis*	3	Yes	Yes	Yes	Yes	Yes
Middle Eastern Respiratory Syndrome (MERS)	MERS coronavirus	3	Yes	Yes	Yes	Yes	Yes
Severe acute respiratory syndromes	eg SARS coronavirus	3	Yes	Yes	Yes	Yes	Yes
Droplet: large particles that do not remain airborne for very long and do not travel far from source with potential for transmission via mucocutaneous routes (ie mouth, nose, or eyes)							
Meningococcal septicaemia (Meningitis)	*Neisseria meningitidis*	2	No	Yes	Yes	Yes	Yes
Non-meningococcal meningitis	Various bacteria including *Haemophilus influenzae* and also viruses	-	No	Yes	Yes	Yes	Yes
Influenza (animal origin)	eg H5 and H7 influenza viruses	3	No	Yes	Yes	Yes	Yes
Diphtheria	*Corynebacterium diphtheriae*	2	No	Yes	Yes	Yes	Yes
Contact: either direct via hands of employees, or indirect via equipment and other contaminated articles where transmission is primarily via an ingestion route							

Infection	Causative agent	Hazard Group	Is a body bag needed[1] ?	Can the body be viewed?	Can post mortem be carried out?[2]	Can hygienic treatment be carried out?[3]	Can embalming be carried out?[2]
Invasive streptococcal infection	*Streptococcus pyogenes* (Group A)	2	Yes	Yes	Yes	No	No
Dysentery (shigellosis)	*Shigella dysenteriae (type 1)*	3	Advised	Yes	Yes	Yes	Yes
Methicillin-resistant *Staphylococcus aureus* (MRSA)	Methicillin-resistant *Staphylococcus aureus*	2	No	Yes	Yes	Yes	Yes
Hepatitis A	Hepatitis A virus	2	No	Yes	Yes	Yes	Yes
Hepatitis E	Hepatitis E virus	3	No	Yes	Yes	Yes	Yes
Enteric fever (typhoid/para typhoid)	*Salmonella typhi/paratyphi*	3	Advised	Yes	Yes	Yes	Yes
Brucellosis	*Brucella melitensis, B. arbortus, B. suis*	3	No	Yes	Yes	Yes	Yes
Haemolytic uraemic syndrome	Verocytotoxin/ shiga toxin producing *E.coli* (eg O157:H7)	3	No	Yes	Yes	Yes	Yes
Contact: either direct or indirect contact with blood/other blood containing body fluids via a skin-penetrating injury or via broken skin and through splashes of blood/other blood containing body fluids to eyes, nose and mouth							
Acquired Immune Deficiency Syndrome related illness	Human immune-deficiency virus	3	No	Yes	Yes	Yes	Yes
Anthrax	*Bacillus anthracis*	3	Yes	No	Yes[4]	No	No
Hepatitis B, D and C	Hepatitis B, D and C viruses	3	No	Yes	Yes	Yes	Yes
Rabies	Lyssaviruses	3	No	Yes	No	No	No
Viral haemorrhagic fevers	See appendix 11b	4	Yes[5]	No	No	No	No
Contact: either direct or indirect contact with body fluids (eg brain and other neurological tissue) via a skin-penetrating injury or via broken skin							
Transmissible spongiform encephalopathies (eg vCJD)	Various prions	3	Yes	Yes	Yes	Yes	No

Notes

[1] It is advised that a body bag is used for the deceased in all cases where there is (or is likely to be) leakage of bodily fluids.

[2] When carrying out higher risk procedures such as post-mortem or embalming, consideration should be given to the need for additional measures to prevent contamination of equipment

Infection	Causative agent	Hazard Group	Is a body bag needed[1] ?	Can the body be viewed?	Can post mortem be carried out?[2]	Can hygienic treatment be carried out?[3]	Can embalming be carried out?[2]
and the environment and to prevent staff exposure to infectious material eg through additional PPE and use of safer sharps devices. 3 Hygienic treatment refers to washing and/or dressing of the deceased. 4 Where anthrax infection is suspected, before undertaking a post mortem the rationale for the procedure should be carefully considered; particularly where examination may increase the potential for aerosol generation. 5 A double body bag must be used. NB Hazard group 4 and HCID will be transported by HART teams							

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