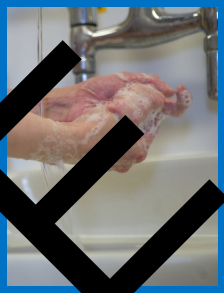
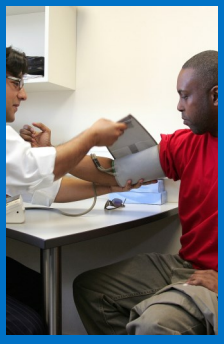
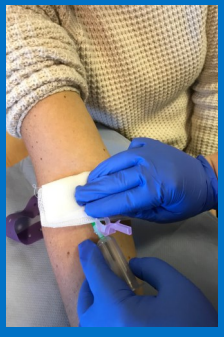
Infection.
Prevention.
Control.
You're in safe hands

NHS







Preventing Infection Workbook

Guidance for General Practice 4th Edition

Name

Job Title

Contents

1. Introduction

As an NHS Community Infection Prevention and Control (IPC) Team based in North Yorkshire, our aim is to support General Practice in promoting best practice in infection prevention and control. This Workbook complements a range of educational infection prevention and control resources which can be viewed at:

www.infectionpreventioncontrol.co.uk

This Workbook is intended to be the foundation for best practice for infection prevention and control. By applying the principles within the Workbook you will demonstrate commitment to high quality care and patient safety. *The Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance (The Code of Practice)*, Department of Health July 2015 states *"Good infection prevention and control is essential to ensure that people who use health and social care services receive safe and effective care"*.

The Workbook is aimed at all staff working in a General Practice, this includes not only front-line clinical staff, but all staff groups including receptionists and cleaning staff and is designed to be undertaken in stages. This will allow you to complete the 'Test your knowledge' questions before moving on to the next section. On completion, your manager will check that you have achieved 100% competency in your infection prevention and control knowledge and sign the 'Certificate of completion'. You should keep the Workbook as evidence of learning and as an on-going reference guide to provide you with easily accessible advice for day-to-day care of patients.

The Workbook is evidence-based using national guidance. Completion of this Workbook also helps your General Practice demonstrate compliance with *The Code of Practice* and Care Quality Commission registration requirements in relation to infection prevention and control training.

The chain of infection

Organism: Microorganisms, such as bacteria and viruses, e.g. C*lostridioides difficile,* MRSA, Norovirus

Reservoir: A reservoir for the microorganisms (where the infection comes from), such as people, animals, food, contaminated equipment or surfaces

Portal of exit: The way in which microorganisms leave the reservoir, such as coughing, sneezing, diarrhoea, exudate (wound discharge), hands touching contaminated equipment or surfaces

Means of transmission: The way in which microorganisms are transmitted, such as hands, equipment, airborne, injection, ingestion

Portal of entry: The way in which microorganisms enter the body, such as urinary tract, exposed wounds, broken skin, needlestick injury, mucous membranes, e.g. eyes, nose, mouth

People at risk: A person's susceptibility to infection is determined by their age, well-being, level of immunity, if they have invasive devices or any medical interventions

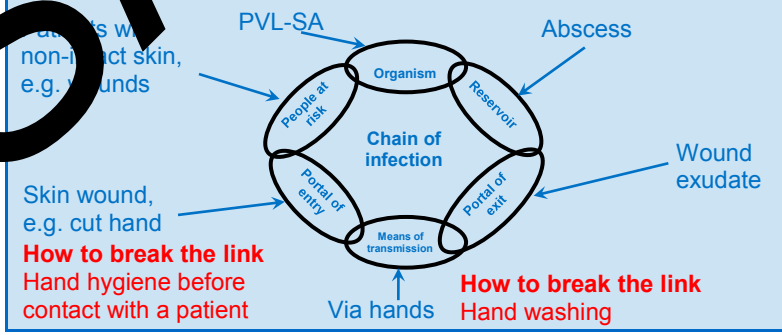
Chain of infection showing how PVL-SAs can be spread

Case study

Mr Green, a 19 year old rugby player, has an abscess confirmed to be PVL-SA positive. Practice Nurse dresses the wound and does not wash her hands after removing her gloves and apron.

Her next patient is a 2 year old child White who has a cut on her hand. The Practice Nurse transmits PVL-SA to her when applying a dressing. A week later the child White returns to the surgery with an abscess and subsequently develops further abscesses over the next six months, which when swabbed confirmed were PVL-SA positive.

Example of how to break the chain of a PVL-SA infection



Transmission based precautions

In some circumstances, standard infection control precautions (SICPs) may not be sufficient to prevent transmission of specific infections. Therefore, additional transmission based precautions (TBPs) may also need to be taken.

The need for TBPs is based on the:

- Infectious agent that is confirmed or suspected
- Severity of illness
- Transmission route of the infectious agent (which may be more than one route)
- Procedures undertaken

TBPs are categorised by the following routes of transmission:

Contact precautions
Used to prevent and control infections transmitted via direct contact with the patient, or indirectly from the patients immediate environment or equipment. This is the most common route of transmission of infection.
Droplet precautions
Used to prevent and control infections transmitted over short distances (at least 1 metre via droplets greater than 5 microns, i.e. 0.005 millimetre in size), from the respiratory tract of one person directly onto a mucosal surface, e.g. eyes, nose, mouth, of another person. Droplets can penetrate the respiratory system to above the alveolar level. Droplets fall rapidly onto surfaces due to their weight.
Airborne precautions
Used to prevent and control infections transmitted without necessarily having close patient contact via aerosols (less than 5 microns), from the respiratory tract of one person directly onto a mucosal surface, e.g. eyes, nose, mouth, of another person. Aerosols can penetrate deeper than droplets, to the endpoint (alveoli). Unlike droplets, because the size is much smaller, aerosols can travel on air currents for potentially hours before they fall onto surfaces.

Hand cleaning methods

The use of liquid soap, warm running water and paper towels, is best practice. This removes dirt, organic matter, e.g. faeces, body fluids, and most transient, but not resident, microorganisms acquired through direct contact with a patient or the environment.

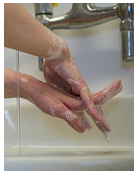
With practice, routine hand hygiene should take at least 15-30 seconds (see technique on page 15). Non-alcohol hand wipes can be used when it is not possible to perform handwashing, e.g. home visits without adequate handwashing facilities.

The use of an alcohol handrub (minimum 60% alcohol) is an acceptable alternative to handwashing in most situations, provided hands are **not visibly** dirty or soiled. Apply enough alcohol handrub to cover all surfaces using steps 1-8 on page 15.

Antiseptic hand hygiene

Liquid soap and warm water followed by alcohol handrub or the use of an antibacterial solution, e.g. chlorhexidine, removes transient as well as resident microorganisms. This level of hand hygiene should be used prior to minor surgery, invasive procedures or if patients are immunosuppressed.

When is alcohol hand rub not effective?



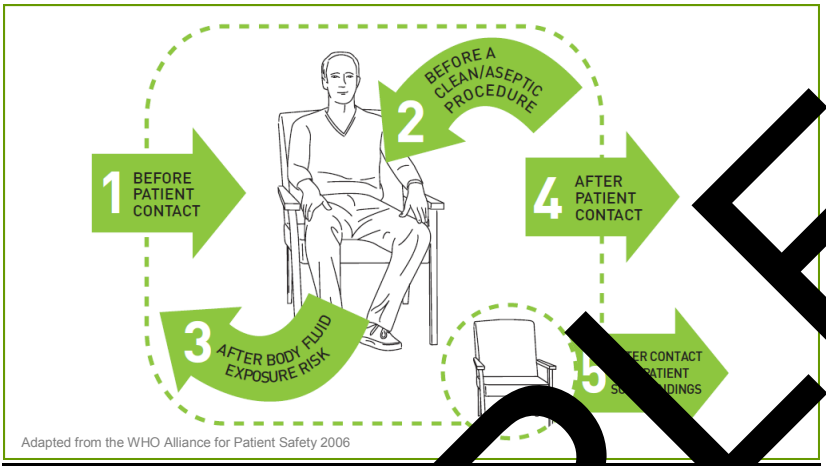
- When hands are visibly dirty or soiled.
- When caring for patients with viral gastroenteritis, e.g. Norovirus, or a spore forming bacteria, such as *Clostridioides difficile.*

Always use liquid soap and warm running water for hand hygiene on these occasions.

Bare Below the Elbows

It is best practice to be 'Bare Below the Elbows' (BBE) to facilitate good hand hygiene when delivering direct care to patients. BBE has been adopted by the NHS. BBE is about exposing the forearms and being free from wrist and hand jewellery, including dermal piercings, (other than one plain band ring). Nails should be short, free from nail varnish, false or gel nails and nail jewellery. Long sleeves, if worn, should be rolled or pushed up to the elbows.

Your 5 moments for hand hygiene at the point of care



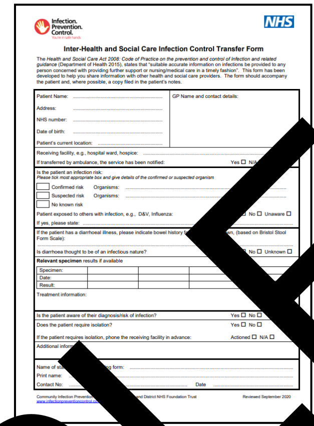
Adapted from the WHO Alliance for Patient Safety 2006

1	BEFORE PATIENT CONTACT	**WHEN?** Clean your hand[s] [b]efore touching a [p]atient when appr[o]aching him/her. **WHY?** To protect the patient [a]gainst ha[r]mful germs carried on your hands.
2	BEFORE A CLEAN/ ASEPTIC PROCEDURE	**WHEN?** Clean y[our] hands imme[diately] before any clean/aseptic procedure. **WHY?** To protec[t] [a]gainst harmful germs, including the patient's own, from entering [your] body.
3	AFTER BODY FLUID EXPOSURE RISK	**WHEN?** Clean your [hands] immediately a[fter] exposure risk to body fluids (and after glove remov[al]). **W[HY?]** To protect yours[elf] and th[e] healthcare environment from harmful p[atient germs].
4	AFTER PATIENT CONTACT	**WHE[N?]** Clean [your] hands [after] touching a patient and her/his immediate surroun[dings] when [leaving] the patient's side. **WHY?** To [protect yourself] and the healthcare environment from harmful patient germs.
5	AFTER CO[NTACT] WITH PATIE[NT] SURROUNDI[NGS]	**WHEN?** Clean y[our] hands after touching any object or furniture in the [patient's] immediate [surroundings] when leaving—even if the patient has not bee[n touched]. **W[HY?]** To p[rotect] yourself and the healthcare environment from harmful [patient] germs.

Other examples of when hand hygiene should be performed:

- **W**[hen] hands [a]re visibly dirty or soiled
- **Before** [t]he start of your shift and **before** you go home
- **Befo**[re] putting on and **after** removal of personal protective equipment (PPE) or domestic gloves
- **Before** and **after** having a coffee/tea/meal break
- **After** coughing, sneezing or blowing your nose
- **After** using the toilet

of the patient. Documentation, e.g. Inter-Health and Social Care Infection Control Transfer Form or patient passport, should be completed with details of the patient's infectious status, e.g. confirmed risk, suspected risk or no known risk. The form should be given to any person providing further support or nursing/ medical care. An Inter-Health and Social Care Infection Control Transfer Form is available to download at www.infectionpreventioncontrol.co.uk.



Infection. Prevention. Control. You're in safe hands | NHS

Inter-Health and Social Care Infection Control Transfer Form

The *Health and Social Care Act 2008: Code of Practice on the prevention and control of Infection and related guidance* (Department of Health 2015), states that "suitable accurate information on infections be provided to any person concerned with providing further support or nursing/medical care in a timely fashion". This form has been developed to help you share information with other health and social care providers. The form should accompany the patient and, where possible, a copy filed in the patient's notes.

Patient Name: ....
Address: ....
NHS number: ....
Date of birth: ....
Patient's current location: ....
GP Name and contact details:

Receiving facility, e.g., hospital ward, hospice: ....
If transferred by ambulance, the service has been notified: Yes ☐ N/A

Is the patient an infection risk:
Please tick most appropriate box and give details of the confirmed or suspected organism
☐ Confirmed risk Organisms: ....
☐ Suspected risk Organisms: ....
☐ No known risk
Patient exposed to others with infection, e.g., D&V, Influenza: No ☐ Unaware ☐
If yes, please state: ....

If the patient has a diarrhoeal illness, please indicate bowel history f... ...wn, (based on Bristol Stool Form Scale):
Is diarrhoea thought to be of an infectious nature? No ☐ Unknown ☐

Relevant specimen results if available

Specimen:			
Date:			
Result:			

Treatment information:

Is the patient aware of their diagnosis/risk of infection? Yes ☐ No ☐
Does the patient require isolation? Yes ☐ No ☐
If the patient requires isolation, phone the receiving facility in advance: Actioned ☐ N/A ☐
Additional inform...

Name of sta... ...ng form: ....
Print name: ....
Contact No: .... Date ....

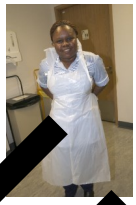
Community Infection Prevention ... and District NHS Foundation Trust | Reviewed September 2020
www.infectionpreventioncontrol.co...

Note

- Prior to transfer, always ensure that any leaking wounds are covered with an appropriate dressing,
- A copy of the completed transfer documentation should be filed in the patient's notes

Test your knowledge *Please tick the correct answer*		**True**	**False**
1.	Patients with suspected infections should be isolated in a designated room or area.	☐	☐
2.	The isolation room/area requires cleaning and disinfecting after use.	☐	☐
3.	Fabric curtains should be removed and laundered and disposable curtains replaced.	☐	☐
4.	When transferring a patient to hospital, it is not necessary to inform the patient's infectious status to the ambulance service and hospital department.	☐	☐

Aprons



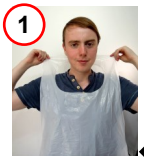
Disposable aprons should be worn as single use items for one procedure or episode of patient care.

All healthcare facilities are recommended to adopt the national colour code for aprons, such as:

White	Clinical tasks, e.g. wound dressing
Yellow	Cleaning of treatment and minor operation r
Blue	Cleaning of general areas, e.g. consulting rooms
Red	Cleaning of sanitary areas
Green	Cleaning of kitchen are

Correct order for putting on and r ving Perso protectiv pment (PPE)

Order for putting on PPE

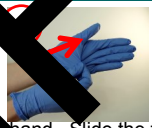
1. 
Ensure you ar e. Below the Elbo d hair is tied back, l your hands. Pull ro over your head an e at ba of your waist.

2. 
Elasti d mask Position s behind ears.
d masks: P on up ps on the crown of ur ower straps the nape of your neck.
For both sks:
With both nds, mould the flexible band over the b e of your nose.

3. 
Holding the eye protection by the sides, place over your eyes.

4. 
Put on gloves and extend to cover your wrists.

Order for removing PPE

1. 
Grasp the outside of the glove with opposite gloved hand, peel off, holding the removed glove in the gloved hand. Slide the fingers of the ungloved hand under the remaining glove at the wrist and peel off. Discard. Clean hands.

2. 
Break apron strap at the neck, allow the apron to fold down on itself. Break waste straps at your back and fold apron in on itself. Fold or roll into a bundle taking care not to touch the outside surface. Discard. Clean hands.

3. 
Handle eye protection only by the headband or the sides. Discard disposable eye protection. Reusable eye protection must be decontaminated. Clean hands.

4. 
Elasticated masks: Pull loops over ears.
Tied masks: Untie or break lower straps followed by upper straps.
Both masks: Holding only by the loops or straps, discard. Clean hands.

7. Respiratory and cough hygiene

Good respiratory and cough hygiene by everyone is essential to reduce the risk of spreading respiratory illnesses, e.g. COVID-19, flu, TB and more commonly, coughs and colds. In vulnerable people, this can cause more severe illness such as pneumonia.

Viruses such as measles and chickenpox are also transmitted through respiratory secretions.

Respiratory illnesses are spread by droplet transmission. When a person with a respiratory illness coughs or sneezes, millions of viral or bacterial particles are released and contaminate the surfaces on which they land. This can include hands and food.

The virus is spread from person-to-person by an infected person sneezing or coughing and the virus lands on the mucous membranes of the eyes, nose or mouth, of a susceptible person.

It can also be spread via a more indirect route, such as hands and contact with contaminated surfaces, e.g. door handle, touch screen, desk, a person can then transfer the virus to their eyes, nose or mouth.

Viruses are known to survive well in the environment, e.g. flu for up to 24 hours, COVID-19 up to 72 hours.

Good respiratory and cough hygiene

To reduce the risk of spreading infections when coughing, sneezing, wiping or blowing the nose, staff, patients and visitors should:

- Have access to and use disposable tissues (not cloth handkerchiefs)
- Cover the nose and mouth with a disposable tissue when sneezing, coughing, wiping and blowing the nose

Waste stream guide for General Practice (continued)

Colour *	Description
Orange stream 	**Waste classified as infectious** Waste contaminated with body fluids from a patient with a confirmed or suspected infection, but no contamination with medicines or chemicals. Examples are: • Contaminated PPE (gloves, aprons, etc.) • Contaminated dressings that do not contain an active pharmaceutical • Very small pieces of tissue • Syringe bodies contaminated with body fluids but not medicines
Purple stream 	**Waste classified as hazardous** Waste consisting of, or contaminated with, cytotoxic and cytostatic medicines. Examples are: • Medicine containers with residues of cytotoxic or cytostatic medicines (bottles, infusion bags, syringe barrels) • Items contaminated with cytotoxic or cytostatic medicines, e.g. swabs • Used sharps from treatment using cytotoxic or cytostatic medicines
Yellow and black stream 	**Waste classified as clinical (non-hazardous)** Waste from patients with no known or suspected infection which may be contaminated with body fluids. Examples are: • Gloves, aprons • Dressings (not containing blood stained) • Empty non-medicated infusion bags
Blue stream 	**Waste classified as non-hazardous** medicinal waste (non-cytotoxic or cytostatic). Examples are: • Unused medicines in original packages • Part empty containers containing residues of medicines • Empty medicine bottles
Black stream 	Includes items normally found in household waste. Examples are: • Newspapers • Food waste • Paper towels

Notes: * Colour waste streams may vary depending on waste contractors - check with your local contractor before implementing the above guidance.

9. Safe management of blood and body fluids

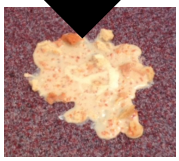
A spillage of blood or body fluids, e.g. urine, vomit, diarrhoea, may contain microorganisms and expose staff, patients and visitors to infection, so should be dealt with promptly. Staff dealing with spillages should wear appropriate personal protective equipment (PPE) and use standard infection control precautions, including colour coded cleaning equipment (see National Colour coding scheme on page 43).

Spillage kits

Always use the appropriate spillage kit for the type of spillage e.g. blood, urine or vomit.

Always ensure:

- The manufacturer's instructions are followed
- The spillage kit is in date as expired contents may not be effective
- The spillage kit is suitable for use on soft surfaces if required
- Waste is disposed of as infectious waste (see page 29)



If the spillage kit is unsuitable for use on a surface, e.g. soft furnishing, carpet, clean the surface with pH neutral detergent and water or steam cleaner or carpet shampooer.

If a mop is used, the mop head should be disposed of, the bucket washed and dried, then disinfected with 1,000 ppm chlorine based disinfectant and stored upside down to air dry.

Test your knowledge *Please tick the correct answer*	**True**	**False**
1. It is not necessary to deal with spillages of blood or body fluids promptly.	☐	☐
2. Spillage kits with an expired date are effective.	☐	☐
3. If a mop is used, after use the mop head should be disposed of.	☐	☐

10. Safe management of care equipment

Cleaning, disinfection and sterilisation is known as decontamination. Safe decontamination of reusable medical equipment and care equipment before its first use and after each use is an essential part of routine infection control to prevent the transmission of infection.

There are 3 levels of decontamination	
1. Cleaning	Is a process which physically removes dirt, blood, body fluids and many microorganisms.
2. Disinfection	Is a process to remove or kill pathogens (disease causing) microorganisms using an antimicrobial agent.
3. Sterilisation	Is a process for the complete destruction or removal of all microorganisms.

1. Cleaning - for items used on intact skin and non-infectious patients

Detergent wipes or pH neutral detergent, warm water and single use cloths should be used for the cleaning of any reusable medical or care equipment, e.g. examination couch, pillow case, stethoscope, doppler, that has been in contact with intact skin (for example skin which has no breaks, grazes, cuts). Cleaning is essential before disinfection or sterilisation is carried out.

2. Disinfection - follows cleaning, for items used on non-intact skin, mucous membranes, body fluids, confirmed or suspected infectious patients

Disinfectants are not effective if dirt or visible soiling is present.

Disinfectants can be in the form of a wipe, e.g. Azo wipes, or as chlorine releasing tablets, such as Haztabs, Presept, or liquids.

Some disinfectant products are ‘2 in 1’, which contain both

11. Safe management of linen, including uniforms and workwear

Best practice in General Practice settings is to use disposable paper products, e.g. paper towels, couch rolls, to prevent the spread of infection.

Linen or fabric items are not recommended for use as it is not practical to launder them between each patient. Couch roll should be used for modesty cover rather than a blanket.

A new disposable couch roll sheet should be used to cover couches and pillows after each patient use.

Pillows, if used, should be encased in an undamaged, sealed wipeable plastic cover and decontaminated after each use.

It is recommended that disposable curtains and screens are used. They should be changed as per local cleaning schedule or immediately if visibly soiled, e.g. with blood, body fluids, dirt or stains.

If fabric curtains or screens are used, they should be professionally laundered as per local cleaning schedule or immediately if visibly soiled.

Washing uniforms or clothing worn at work

Always:

- Change in and out of uniform at work, or completely cover uniform when travelling to and from work
- Wear a clean uniform at the start of each shift and have enough uniforms to facilitate this
- Use personal protective equipment, e.g. disposable apron, to prevent contamination of uniform and workwear

12. Safe management of sharps and inoculation injuries

Sharps are items that could cause cuts or puncture wounds, including needles and sharp instruments. It is the responsibility of the user to dispose of sharps safely into a sharps container.

Good practice to prevent a needlestick/sharps injury

- Consider, where appropriate, using needle safety devices to provide a safer system of working.
- **Never** recap needles due to the high risk of injury.
- Dispose of the needle and syringe as one unit into a sharps container.
- If it is necessary to detach the needle, great care must be taken, preferably using the device in the sharps container.
- Sharps should be disposed of at the point of use by the person using the sharp.
- Never pass used sharps from person-to-person as it increases the risk of injury.
- Request assistance when using sharps with reluctant or confused patients.

Select the correct colour coded sharps containers

Purple lid with matching purple labelled container: for the disposal of sharps contaminated with cytotoxic and cytostatic medicines, e.g. hormone and cancer drugs
Orange lid with matching orange labelled container: for the disposal of sharps **not** contaminated with medicines
Yellow lid with matching yellow labelled container: for the disposal of sharps contaminated with medicines

Procedure following a splash or inoculation injury

In the event of a splash injury to eyes, nose or mouth

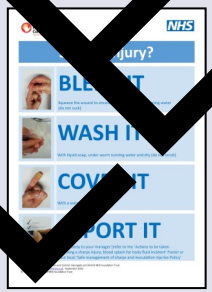
1. Rinse affected area thoroughly with copious amounts of running water.

In the event of a bite or skin contamination

1. Wash affected area with liquid soap and warm running water, dry and cover with a waterproof dressing.

In the event of a needlestick/sharps injury

1. Encourage bleeding of the wound by squeezing under running water (do not suck the wound).
2. Wash the wound with liquid soap and water, rinse under running water and dry (do not scrub).
3. Cover the wound with a waterproof dressing.



In all cases

4. Report the injury to your manager immediately.

If the injury is caused by a used needle or sharp of unknown origin, splash to non-intact skin or mucous membrane or a bite has broken the skin

5. Immediately contact your GP or Occupational Health department. Out of normal office hours attend the nearest Emergency Department (ED).
6. If you have had a needlestick or sharps injury from an item which has been used on a patient (source), the doctor in charge of their care may take a blood sample from the patient to test for hepatitis B, hepatitis C and HIV (following counselling and agreement of the patient).
7. At the GP Practice/Occupational Health/ED:

- A blood sample will be taken from you to check your hepatitis B vaccination/antibody levels and you will be offered immunoglobulin if they are low. The blood sample will be stored until results are available from the patient's blood sample. If the source of the sharps injury is unknown, you will also have blood samples taken at 6, 12 and 24 weeks for hepatitis C and HIV
- If the patient (source) is confirmed or suspected to be HIV positive, you will be offered Post Exposure HIV Prophylaxis (PEP) treatment. This should ideally **commence within 1 hour of the injury,** but not recommended beyond 72 hours post exposure

Red	Blue
Sanitary areas including sinks in sanitary areas	General areas, e.g. waiting/consulting rooms and sinks in general areas
Green	**Yellow**
Kitchens	Treatment and minor operation rooms

- Cleaning cloths should be single use.
- Cleaning equipment should be stored clean, dried or left to air dry after use and not left to soak overnight.
- Reusable mop heads should be replaced regularly depending on the frequency of use and also when never visibly stained.

Cleaning products

When using cleaning products, always use the appropriate personal protective equipment (PPE), i.e. disposable apron and gloves, and wear facial protection if there is a risk of splashing to the face.

Detergents

Use pH neutral detergent, e.g. Clinispec, and warm water and single use cloths or detergent wipes.

Disinfectants

Disinfectants are not required for routine cleaning.

Disinfection should be performed following a consultation/ treatment with a patient who has a confirmed or suspected infection. It should also be used following contamination with blood or body fluids (refer to the 'Safe management of blood and body fluids', page 31).

Cleaning is essential before disinfection is carried out, unless a '2-in-1'cleaning and disinfecting product is used.

Disinfectants which are virucidal and bactericidal should be used for disinfecting surfaces after dealing with a patient with a confirmed infection, e.g. MDRO, MRSA, or suspected viral

dress significant wounds that are less than 48 hours old, cavity wounds or wounds of patients who are significantly immunosuppressed, diabetic or at high risk of infection.

Aseptic technique competency

- Only staff trained and competent in an aseptic technique should undertake the procedure.
- An 'Aseptic technique competency assessment record' and 'Aseptic technique procedure audit tool' for both urinary catheterisation and wound dressing should be completed on an annual basis. Available to download at www.infectionpreventioncontrol.co.uk.
- Training records and audit tools should be available for inspection.

Summary for wound dressings		
Description	**Aseptic technique**	**Clean technique**
Gloves	Sterile	Non-sterile
Dressings	Sterile	Sterile
Cleansing solution	Sterile water/ saline/ antiseptic	Tap water (drinking quality)

Symbols and their meaning	
2023-10-31 Use by date, i.e. use by 31 October 2023	2021-10 Date of manufacture, i.e. manufactured during October 2021
Do not reuse, Single use, use only once	**LOT ABC123** Batch code

15. Specimen collection

A specimen is a sample of tissue, organ or body fluid, e.g. blood, urine, faeces, pus or sputum, taken from a patient for the purpose of analysis to identify microorganisms that cause disease and to provide medical direction for appropriate treatment.

All specimens are a potential infection risk to staff and should be handled and transported safely. Therefore, all specimens must be collected using standard infection control precautions.

Microscopy, culture and sensitivities (MC&S) is the process by which microorganisms and their sensitivities are identified. Sometimes, specimens are obtained for monitoring purposes, e.g. checking for blood and kidney disease.

Specimens for MC&S should only be taken if there are indications of a clinical infection (see table on page 51). This helps to reduce the risk of inappropriate antibiotic prescribing.

Wherever possible, obtain a fresh specimen. As much relevant clinical information, e.g. symptoms, current antibiotic treatment and recent travel abroad, should be included on the specimen form to ensure the most appropriate tests are undertaken by the laboratory.

Obtaining specimens in the Practice or community

- Wash hands before and after specimen collection.
- Wear appropriate personal protective equipment (PPE).
- Care should be taken not to contaminate the specimen, its outer container or label.
- Ensure the lid is securely closed and container placed in the plastic transport bag.

Remember

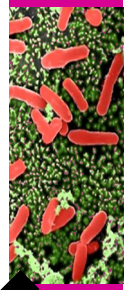
- Venepuncture poses a risk of infection to both the patient and staff member performing the procedure.
- Use safer sharps incorporating a protection mechanism, where possible.

It's a fact

In 2010 WHO highlighted the most dangerous practices known to increase the risk of needlestick injury and transmission of disease as being:

- Recapping used needles using two hands
- Recapping and disassembling vacuum containing tubes and holders
- Reusing tourniquets and vacuum tube holders that may be contaminated with patient blood and sometimes blood

Test your knowledge *Please tick the correct answer*	True	False
1. Skin should be decontaminated for 30 seconds and allowed to air dry prior to venepuncture.	☐	☐
2. Wearing gloves whilst undertaking venepuncture reduces the risk of you acquiring a blood borne virus if you sustain a needlestick injury during the procedure.	☐	☐
3. Fabric tourniquets can harbour more microorganisms.	☐	☐
4. When taking multiple blood samples from a patient, they can be taken in any order.	☐	☐



17. *Clostridioides difficile*

C. difficile is a bacteria that is present in the gut of around 66% of children and 3% - 5% of adults. Our 'good' bacteria (normal flora) keep the growth of *C. difficile* in check. However, when antibiotics are given for an infection, the antibiotics can disturb the balance of bacteria in the gut and *C. difficile* can multiply rapidly producing toxins (poisons) that cause diarrhoea or inflammation of the bowel.

C. difficile produces microscopic spores, which are invisible to the naked eye, and are hard to kill, these are the ones passed in diarrhoea. The spores are resistant to alcohol, drying and heat and can survive in the environment for months and even years.

Risk factors for *C. difficile*

The risk factors associated with acquiring *C. difficile* are:

- **Age:** incidence much higher in those aged over 65 years
- **Underlying disease:** those with chronic renal disease, underlying gastrointestinal conditions and oncology patients
- **Antibiotic therapy:** patients who are receiving or recently received antibiotic treatment (within 3 months), especially broad-spectrum antibiotics
- **Recent hospital stay:** patients who are frequently in hospital or who have had a lengthy stay in hospital
- **Bowel surgery:** those who have had bowel surgery
- **Other medication:** patients receiving anti-ulcer medications, including antacids and proton pump inhibitors (PPIs), for treating reflux (heartburn and indigestion)
- **Nasogastric tubes:** patients with a nasogastric tube in situ

18. MDROs, including ESBL and CPO (Multidrug-resistant organisms including extended-spectrum beta-lactamase and carbapenemase-producing organism)

Multidrug-resistant organisms (MDROs) are microorganisms that have become resistant to the drugs normally used to treat them. MDROs include bacteria, fungi, viruses and parasites, however this section will focus on bacteria only.

Antimicrobial resistance is the ability of bacteria to resist the effects of antibiotics normally used to treat them, so the bacteria are not killed, this is known as 'antibiotic resistance'.

Antibiotic resistance makes infections difficult to treat. It may also increase the length of severity of illness, the period of infection, adverse reactions (due to the need to use less safe alternative drugs), length of hospital admission and overall costs.

Numerous bacteria are normally found in the bowel. Not all are resistant to antibiotics and not all will cause serious illness. Species of bacteria commonly found include *Escherichia coli* (*E. coli*), Klebsiella, Proteus, Pseudomonas Enterobacter and Acinetobacter. Collectively these bacteria are referred to as Gram-negative bacilli (GNB). These bacteria, under certain circumstances, can become resistant to antibiotics and may require infection control management. They are referred to as multidrug-resistant organisms (MDROs), formerly known as multi-resistant Gram-negative bacteria (MRGNB).

Some MDROs contain beta-lactamases (**extended spectrum beta lactamases** or ESBL's) which can destroy/ inactivate even broad spectrum antibiotics, such as cefuroxime and cefotaxime.

Newer recently identified MDROs known as MDRO CPO (**carbapenemase-producing organism**), formerly known as CPE (carbapenemase-producing *Enterobacteriaceae*), are

e.g. long-term respiratory ventilation

Routes of transmission

MDROs can be spread by:

Direct contact: person-to-person, e.g. contact with an infected persons body fluids

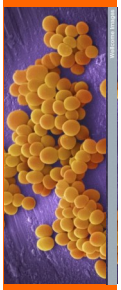
Indirect contact: medical devices, care equipment or environment that has not been appropriately decontamina

MDRO colonisation: means that MDRO is esent on or in the body without causing an infection. Colonis on with a MDRO may be long term

MDRO infection: means that th DRO is esent o in the body and is multiplying causi clinica gns of infection, e.g. urine infection, pneum a, or s al site infection

Management of a patient c ed/in ed with a MDRO

- Always use stand ard infect n co ol precautions (SICPs) and, where req transmi sion b ed precautions (TBPs) should be ed o y assessed basis, particularly where th is a presence of wound drainage, diarrh faecal inco nence. In these situations, there is increa ed po for environmental contamination and subsequ t ri of transmission.
- Patients at nding for a wound dressing, where possible, sho be s eduled at the end of the session to allow e for nvironmental cleaning and disinfection.
- A long eeved fluid repellent gown should be worn if there a of extensive splashing of body fluids to the uniform, e.g. dealing with an ileostomy.
- If the patient has attended for an examination or procedure, reusable devices, care equipment, the treatment couch and the immediate area, should be cleaned and disinfected (see sections 10 and 13).



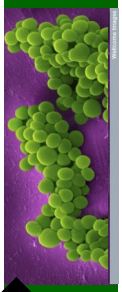
bacteria. Colonisation may be long term and usually does not require antibiotic treatment.

MRSA infection

Usually occurs in health and social care settings and particularly in vulnerable patients. MRSA can cause infections ranging from wound infections to pneumonia and bacteraemia. Clinical infection occurs either from the patients own resident MRSA (if they are colonised) or by transmission from another person with MRSA. If infection is present, antibiotic treatment should be prescribed and suppression treatment considered.

MRSA screening

How to take a nasal swab for MRSA screening	
	• Wash hands, apply apron and non-sterile gloves. • Place a few drops of either sterile 0.9% sodium chloride or sterile water onto the swab taking care not to contaminate the swab.
	• Place the tip of the swab inside the nostril at the angle shown. It is not necessary to insert the swab too far into the nostril.
	• Gently rotate the swab ensuring it is touching the inside of the nostril. • Repeat the process using the same swab for the other nostril.
	• Place the swab into the container. • Remove and dispose of gloves and apron and clean hands. • Complete patient details on the container and specimen form. Request 'MRSA screening' under clinical details on the form.



recommended unless the patient is particularly vulnerable to infection, poses a special risk to others, e.g. healthcare worker, or spread of infection is continuing in close contacts.

- Communicate PVL-SA status to any receiving health and social care providers (see page 19).

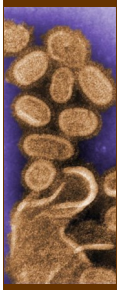
Note

- An advice sheet 'PVL-SA Information for service users' is available to download at www.infectionpreventioncontrol.co.uk

It's a fact

- Panton and Valentine were two doctors who discovered this toxin which kills white blood cells (leukocytes), and is known as 'leucocidin'.

Test your knowledge *Please tick the correct answer*	True	False
1. PVL-SA predominantly causes skin and soft tissue infections.	☐	☐
2. PVL-SA should be suspected if a patient has had recurrent boils, abscesses, or there is a history of symptoms.	☐	☐
3. PVL-SA colonisation means that PVL-SA is present on or in the body without causing an infection.	☐	☐
4. Patients attending for a wound dressing, where possible, should be scheduled at the end of the session to allow time for environmental cleaning and disinfection.	☐	☐



21. Respiratory illnesses

Viral and bacterial infections can be transmitted by the respiratory tract in respiratory secretions.

Respiratory tract infections (RTIs) are mainly caused by viruses and can affect the upper respiratory tract or the lower respiratory tract.

Upper respiratory tract infections (URTIs), e.g. sore throat, Rhinovirus (common cold), sinusitis, involve the throat, nose or sinuses. usually get better without antibiotic treatment.

Lower respiratory tract infections (LRTIs), e.g. pneumonia, bronchitis, tuberculosis, involve the lower airways in the lungs.

Respiratory viral and bacterial infections, which cause more serious illness include:

- Influenza (flu) - types A, B, C
- Human parainfluenza viruses (HPIV) and respiratory syncytial virus (RSV)
- Mumps and measles
- Mycobacterium tuberculosis (TB) and Multidrug-resistant TB (MDR-TB)
- SARS-Cov-2 (COVID-19) - discovered in 2019, causing more serious illness in some people. For confirmed or suspected cases, follow national IPC guidance

Respiratory illnesses may all have similar symptoms including runny nose, sore throat, cough, wheeze, lethargy, body aches and fever.

RTIs caused by bacteria, e.g. pneumonia, tuberculosis, usually require antibiotic treatment and in some cases, admission to hospital.

22. Viral gastroenteritis/Norovirus

Viral gastroenteritis is usually caused by a virus known as Norovirus, other less common causes include Rotavirus and Sapovirus. The incubation period for viral gastroenteritis ranges from 24-48 hours, but cases can occur within 12 hours of exposure.

Viral gastroenteritis is highly infectious and can spread easily from person-to-person, therefore, it is important to use standard infection control precautions.

What does viral gastroenteritis cau

Symptoms include:

- Sudden onset of vomiting which can be projectile
- Watery non-bloody diarrhoea
- Abdominal cramps
- Nausea
- Headache, low grade fever

The illness lasts 24-72 hours with no long term effects.

Routes of transmission

Noroviruses are transmitted primarily through the faecel/oral route by:

Direct contact: person-to-person, e.g. hands that have not been washed thoroughly

Indirect contact: medical devices, care equipment or environment, that has not been appropriately decontaminated. Faecally contaminated food or water

Also, via the droplet route: infectious droplets in vomit

Key references

Association of healthcare cleaning professionals (2013) *Revised Healthcare Cleaning Manual*

British Medical Association (May 2012) *CQC Registration—What you need to know, Appendix B Policies and Protocols Guidance for GP*

Care Quality Commission Homepage [online]

Department of Health (July 2015) *The Health and Social Care Act 2008: Code of Practice on the prevention and control of infections and related guidance*

Department of Health (2013) *Health Technical Memorandum 07-01: Safe management of healthcare waste*

Department of Health (January 2009) *Clostridium difficile infection: How to deal with the problem*

Department of Health (2008) *HIV post-exposure prophylaxis: Guidance from the UK Chief Medical Officer's Export Advisory Group on AIDS*

Department of Health (1998) *Guidance for clinical healthcare workers: protection against infection with blood-borne viruses*

Harrogate and District NHS Foundation Trust (July 2013) *Community Infection Prevention and Control Policies for General Practice*

Health Protection Agency (November 2008) *Guidance on the diagnosis and management of PVL-associated Staphylococcus aureus infections (PVL-SA) in England 2nd Edition*

Healthcare Commission (October 2007) *Investigation into outbreaks of Clostridium difficile at Maidstone and Tunbridge Wells NHS Trust*

Terrence Higgins Trust [online]

Loveday HP, et al, epic3: National Evidence Based Guidelines for Preventing Healthcare-Associated Infections in NHS Hospitals in England *Journal of Hospital Infection 86S1 (2014) S1–S70*

Medicines and Healthcare Products Regulatory Agency (April 2015) *Managing Medical Devices Guidance for healthcare and social services organisations*

Mid Staffordshire NHS Foundation Trust (2013) *The Report of the Mid Staffordshire NHS Foundation Trust Public Inquiry volume 2: Analysis of evidence and lessons learned (part 2), Chaired by Robert Francis QC 2013*

National Audit Office [online]

National Institute for Health and Care Excellence (April 2016) *Antimicrobial stewardship QS121*

National Institute for Health and Care Excellence (2012 updated 2017) *Infection: prevention and control of healthcare-associated infections in primary and community care Clinical Guideline 139*

NHS England and NHS Improvement (April 2021) *National Standards of Healthcare Cleanliness 2021*

Public Health England (June 2015) *Toolkit for managing carbapenemase-producing Enterobacteriaceae in non-acute and community settings*

Public Health England (2013, updated September 2021) *Immunisation Against Infectious Disease (The Green Book)*

Royal College of Nursing (May 2018) *Tools of the trade: RCN guidance for health care staff on glove use and the prevention of contact dermatitis*

Royal College of Nursing (February 2018) *Freedom of Information Follow up Report on Management of Waste in the NHS*

Royal College of Nursing (November 2017) *Essential practice for infection prevention and control*

Royal College of Nursing (April 2014) *The Management of waste from health, social and personal care RCN guidance*

Royal Marsden NHS Foundation Trust (March 2020) *The Royal Marsden Hospital Manual of Clinical Nursing Procedure 10th Edition*

WHO (2010) *Guidelines on drawing blood: Best practices in phlebotomy*

Written and produced by
Community Infection Prevention and Control
Harrogate and District NHS Foundation Trust
Tel: 01423 557340
www.infectionpreventioncontrol.co.uk
October 2021