

PART B

STANDARD INFECTION CONTROL PRECAUTIONS

Introduction to the chain of infection^{16,17,18,19,20}

The way by which infection is spread can be thought of as a continuous chain with 6 links (**see Table 1**). In order to prevent infection or stop it spreading, one or more links in the chain must be broken. This can be achieved through practising standard infection control precautions.

Link 1 Sources of micro-organisms.

The main types of organism causing human infection include bacteria (e.g. salmonella), viruses (e.g. hepatitis A, B or C), fungi, or yeasts (e.g. candida). Infected people may act as a source of infection for others because the micro-organisms may be found in certain body fluids and could be passed on to others.

Link 2 Reservoirs for micro-organisms.

These are places where the organism may live and survive. Reservoirs can include people, animals, the environment, food or water. Contaminated food may act as a reservoir, for example if it is contaminated with salmonella or campylobacter. If the meat is not thoroughly cooked, those eating it may become infected. Other examples of reservoirs for micro-organisms include articles such as towels, flannels, wash bowls, bed pans, contaminated equipment etc.

Link 3 The way microbes leave the body

Sometimes termed “portal of exit”, this can occur in a number of ways. For example, salmonella leaves the body in the faeces and, if diarrhoea is present, high numbers of salmonella microbes are excreted. Tuberculosis uses the same entry and exit point in that it is inhaled and exhaled.

Link 4 The method of spreading microbes from person-to-person

Infections are spread in several ways, depending upon the infection. These include direct or indirect contact (including ingestion, sexual contact, mother to foetus, injection or inoculation) and some infections are airborne and are inhaled, e.g. pulmonary tuberculosis.

Unwashed hands are the most common way to spread infection. Microbes may be present in any body fluids (excreta and secretions). If hands come into contact with body fluids they may be carried from one person to another unless the hands are washed. In addition the microbes can be spread from person-to-person via a contaminated environment (e.g. dust) or equipment.

Some infections may be spread via the air, such as the cold and flu viruses. The infection may be spread in droplets or airborne spray produced by coughs and sneezes. Some childhood illnesses may also be spread in this way.

Link 5 A susceptible person (person at risk of infection)

People are at risk of developing infection if they are in contact with the organism in sufficient numbers to cause illness. Immunity to some infections can be developed after being infected (e.g. chickenpox) or after immunisation (e.g. hepatitis B).

Certain people are more susceptible or at greater risk of infection for a variety of factors. People who are very young or the very old are more at risk because their immune system may not be developed or may be waning. In addition, some medications, such as steroids and cytotoxic agents can increase infection risk. So can underlying diseases such as diabetes, blood disorders or cancer.

Link 6 Microbes enter into the body

Sometimes termed “portal of entry”. In order for microbes to cause infection they must gain entry into the body. Different organisms have different ways of entering our bodies. For example, salmonella need to be ingested (eaten). Some organisms may cause infection if they are inhaled e.g. tuberculosis. Others, such as hepatitis B, enter the bloodstream via broken skin, injection or sexual intercourse.

Breaking the chain of infection

Breaking the chain of infection by targeting one or more links can halt the spread of infection. This usually involves:

- a) Eradicating the source of infection through appropriate antimicrobial therapy
- b) Preventing the method of spread through hand washing, hygiene, disposal of waste, decontamination of equipment etc or
- c) Protecting the individual at risk by immunisation
- d) Preventing microbes from entering the body by wearing protective clothing, using an aseptic technique when handling invasive devices, covering wounds and insertion sites with sterile dressings etc.

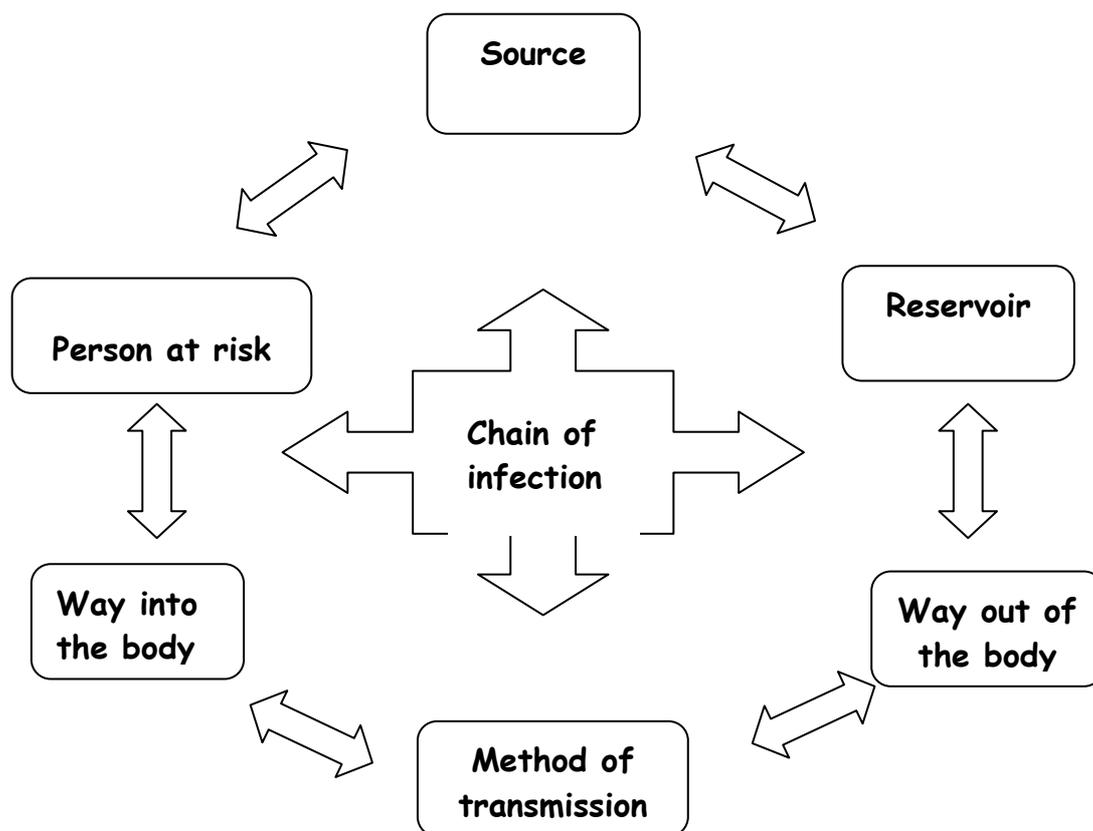
It is impossible to identify everyone who is infectious to others. Some diseases are infectious before any signs develop, such as chickenpox. Some infections may not show any signs or symptoms, such as hepatitis B or HIV. Also some people may be carriers without developing the infection themselves, e.g. salmonella or MRSA.

For this reason it is important that everyone carries out infection control precautions at all times, regardless of whether infection is present or suspected. In the home it may not always be possible to practice standard infection control precautions to the same standard as in a clinical setting. In addition in the home the risks of infection and its spread may be less than that in a clinical environment.

Standard infection control precautions include:

- Hand hygiene
- Use of protective clothing and equipment
- Cleaning and disinfection of equipment and the environment
- Disposal of waste
- Food hygiene
- Laundry
- Management of inoculation injuries (bites/ and injuries with sharps and body fluids)
- Management of invasive devices and wounds (**Part D Clinical Procedures**)

Table 1 Chain of Infection



Break **one** link of the chain to prevent infection

B 1.0 Hand hygiene^{13,15,16,17,18,19,20,21,22,23,24,25,153}

Hand hygiene is widely recognised as the most important method of preventing infection and cross infection. In order to support the important role hand hygiene plays in maintaining patient safety, Swindon PCT have implemented the National Patient Safety Agency (NPSA) clean^{your}hands campaign

The purpose of hand hygiene is to remove or destroy any bacteria picked up on the hands (transient bacteria). In some situations (e.g. prior to invasive procedures) it is necessary to also reduce the numbers of bacteria that normally live on the skin (resident bacteria). This prevents their being transferred to other people, while at the same time protecting oneself. A good hand washing technique is as important as the kind of product used.

B 1.1 Hand hygiene facilities¹⁵**B 1.1.1 Clinical settings**

Hand washing must be carried out using running water at a comfortable temperature. Clinical hand washbasins should be provided wherever clinical care is being given, e.g. service users' rooms in care homes, wards, treatment rooms, dirty utility rooms and kitchens. A clinical hand washbasin consists of lever-operated mixer taps, with no plug and no overflow. If mixer taps are not available for any reason a thermal control can be added to the hot tap to provide warm running water. In care homes, staff should also be able to wash their hands under warm running water.

Liquid soap should be used for hand washing. This should be provided in wall-mounted dispensers with disposable cartridges or disposable pump-action bottles. Re-fillable cartridges are not recommended. Dispensers must be kept clean and replenished.

Aqueous antiseptic solutions or alcohol hand rubs/gels may also be used. Alcohol hand rubs/gels may be used as an alternative to soap and water, if the hands are visibly clean. They are particularly useful in situations where hand washing may not be convenient.

Hand creams may be used to help protect hands from soreness. This must be supplied as individual tubes or in a pump-action container. Communal pots must not be used.

Disposable paper towels must also be available at all hand wash basins in clinical settings, including toilets and kitchens. Communal (e.g. cotton) towels are not recommended in clinical settings. Foot-operated waste bins must be used for disposal of paper towels. Don't use hands to raise the lid.

B 1.1.2 Clients' homes

In clients' own homes the hand hygiene facilities may not be ideal. Staff visiting clients at home should carry a supply of alcohol free skin cleansing wipes and alcohol hand rub/gel. These products may be used instead of hand washing if facilities are inadequate. Alcohol hand rub/gel should be used on visibly clean hands and when hand disinfection is needed. Certain hand hygiene practices can increase the risk of skin irritation and should be avoided. For example, washing hands regularly with soap and water immediately before or after using an alcohol-based product is not only unnecessary, but may lead to dermatitis

Staff should use pump-action liquid soap dispenser rather than bar soap. Dry hands using paper towels or, if these are not available, use paper roll or a clean cotton towel.

B 1.2 Routine hand hygiene

The aim of routine hand hygiene is to remove dirt and most removeable (transient) micro-organisms found on the hands. It is carried out in at least the following circumstances:

- Before starting work and going home
- After contact with body fluids e.g. dealing with incontinent clients
- After removing personal protective equipment (PPE)
- Before and after giving care
- After using the toilet
- Before eating and handling preparing food
- After handling pets
- After handling raw food
- After handling refuse and clinical waste
- When hands look or feel dirty
- After any cleaning activities

Before starting work, wash any broken or cut areas of exposed skin and cover with a waterproof dressing.

For routine hand hygiene the technique is as important as the solution used.

- Remove hand and wrist jewellery and wristwatches, and roll up sleeves. Wedding rings without stones may be left in place
- Wet hands under warm running water
- Apply liquid soap
- Rub this into all parts of the hands vigorously, without applying more water, using the 6-step technique (**see Table 2**) for at least 10-15 seconds
- Rinse hands under running water
- Dry thoroughly using paper towels

Alternatively:

If hands are clean, apply sufficient alcohol hand rub/gel, to rub into all parts of the hands using the 6-step technique, until the alcohol has evaporated.

Washing hands with soap and water is required after contact with patients with diarrhoea, because alcohol is less effective on micro-organisms such as *Clostridium difficile* and viral causes of gastroenteritis.

B 1.3 Hand disinfection

The aim of hand disinfection is the destruction of transient micro-organisms **and** a reduction in resident organisms. It is carried out in at least the following circumstances:

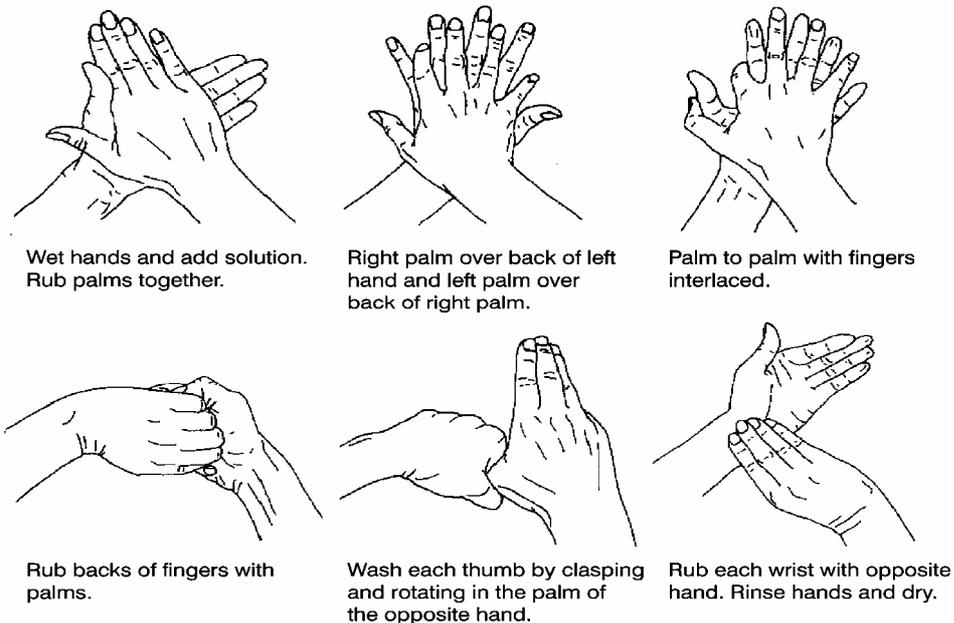
- Before invasive or aseptic procedures
- After contact with people with known or suspected infection

Any fresh abrasion, cut etc. on the hands should be covered with a waterproof dressing or appropriate barrier e.g. gloves.

There are two ways of performing hand disinfection:

- Wash hands as above using liquid soap, then apply sufficient alcohol hand rub/gel and rub into all surfaces of the hands until dry. Alcohol hand rub/gel can also be used between cases if the hands are socially clean. **Or**
- Wash hands as above using an aqueous antiseptic solution (e.g. 4% chlorhexidine-detergent or 0.75% povidone/iodine detergent). Lather all aspects of the hands and wrists using the 6-step technique for 2 minutes.

Table 2 Hand hygiene technique^{21,22}



B 2.0 Client's Personal Hygiene ^{4,5,145}**B 2.1 Washing and bathing**

- Clients should have their own toothbrushes, razors, face cloths, soap, lotions, creams etc. Communal items can spread infection.
- Separate cloths must be used for cleaning of the client's face/body and their genital/anal areas. Disposable cloths could be used instead.
- Antiseptics or salt should not be added to the bath water as they have little or no beneficial properties.
- Daily bathing, shower, or a full body wash is best to prevent an accumulation of dirt and bacteria on the skin. This is particularly important for those who are incontinent.
- Baths should be cleaned regularly with warm water and detergent or cream cleanser. It is not usually necessary to add disinfectants.
- In community hospitals or residential care settings wash bowls should be individualised if possible. Alternatively the bowls must be cleaned and dried thoroughly between uses.

B 2.2 Mouth care ^{25,26}

- The most effective method of keeping the mouth clean, moist and free from infection is to brush the teeth/gums with a soft toothbrush and toothpaste after meals. Disposable foam sticks may be used if the individual cannot use a toothbrush.
- Frequent sips of water can also keep the mouth fresh and clean, if drinking is inadequate
- Liquid paraffin e.g. Vaseline, may be used to moisten the lips
- If the client produces too little saliva, 2-3 sprays of artificial saliva can be sprayed inside the mouth up to 4 times daily
- Antiseptic mouthwashes have a limited effect on mouth organisms and should not be used routinely
- Dentures should be cleaned using a proprietary denture cleaner
- Denture pots must be individualised
- Removable braces must be cleaned daily
- Keep toothbrushes clean and dry, replace periodically.
- Regular dental checks can help to identify and prevent mouth conditions.

B 2.3 Eye care²⁵

Special precautions are only needed if the eyes are damaged or after eye surgery. In these cases, if eyes require cleaning, this should be performed using a low-linting swab, moistened with either normal saline or cooled boiled water.

Hands should be washed prior to giving eye care. The eyes should be wiped from the nose outwards, using a new piece of cotton wool or lint for each 'wipe'.

Eye drops/ointment should only be used if they have been prescribed and have not past the expiry date. Ensure there is good lighting. Hands must be washed prior to instilling medications. The patient should have their head well supported and tilted back. Most eye medications are instilled just inside the lower eyelid. The outlet of the tube or bottle must not be allowed to touch the skin or eye.

B 2.3.1 Care of artificial eyes

If the client's own eye has recently been removed, Chloromycetin ointment may be prescribed, and should be administered according to the instructions.

Once the socket has settled, the false eye and socket should be cared for as follows:

- The eyelids should be kept clean by bathing or wiping with cotton wool or soft lint moistened with normal saline or cooled boiled water.
- If the false eye has become dirty, it should be cleaned in normal saline or cooled boiled water.
- On **no** account should the eye be washed in any type of detergent, as this may cause irritation to the socket and surrounding skin.

B 2.4 Ear care

Ears should be kept clean and dry and examined periodically for signs of infection. Items such as cotton buds should not be used to remove wax from the ears. The removal of wax can be promoted by chewing. If a build up of wax in the ear is noted it may be worth instilling a few drops of wax remover, following the manufacturer's directions.

Only health care professionals who have received training in the irrigation (syringing) of ears, and are deemed to be competent, may undertake this procedure. Usually individuals who need to have their ears syringed are referred to their local general practice. Mechanical ear syringing machines are now recommended and metal syringes should not be used.

Further advice on ear care can be obtained by visiting the website of the Primary Ear Care Centre: www.earcarecentre.com. See the website or **Table 6** for details on how to decontaminate ear syringing machines.

B 2.4.1 Cleaning "behind the ear" hearing aids

- Separate the hearing aid from the ear mould by pulling the flexible tubing away from the hooked part of the hearing aid. Take care not to pull the tubing out of the ear mould. If the tube is stiff, do not force it.

- Wash the ear mould and flexible tube in warm soapy water (not detergent or cleaning liquid). A brush can be used to remove any wax from the tube.
- Rinse the ear mould in clean water. Dry the tubing and ear mould by tapping gently onto a tissue held in the hand to remove drops of water. Ensure no droplets remain.
- Leave the ear mould and attached tubing to dry in a warm (not hot) place
- Once the ear mould and tubing are dry, reattach to the aid
- Contact the local audiology department for further information.

B 2.5 Foot care^{27,28}

Good foot care is essential to ensuring the health of the feet and preventing wounds and disease of the feet. In care homes residents tend to be at special risk especially during times of immobility, during which pressure-relieving devices must be used. Certain individuals are at increased risk of foot disease, including people with diabetes, neuropathy and ischaemic disease.

Good fitting shoes can help promote healthy feet for all clients. Footwear needs to:

- Be worn – not kept for best and going out
- Be made of soft non-occlusive material with no seams or knots
- Have light-weight and shock-absorbing soles with a cushioned insole
- Be of the correct length, width and depth
- Have a broad fronts with plenty of toe room and a soft padded heel cuff
- Hold the foot steady by means of good laces, buckles or Velcro fastening
- Be fitted by a trained fitter with the client standing

The following measures will also help to promote healthy feet and prevent injury.

- Examine the feet regularly (preferably daily especially in high risk groups)
- Ensure the shoes fit correctly
- Those at risk of foot disease should avoid walking in bare feet
- Wash feet daily using warm water and mild soap
- Dry thoroughly, but not roughly, especially between the toes
- Change socks and hosiery daily
- If the skin is dry, apply hand cream or moisturising cream to the heels and balls of the feet

- Cover any cuts with a sterile dressing and report to a State Registered Chiropodist if in a high risk group
- Trim nails regularly, following the natural shape of the toe. Do not cut down the sides
- Carers should not trim the nails of people in high risk groups, unless they are deemed competent by a State Registered Chiropodist
- Clients should be able to see an NHS chiropodist free of charge, providing they have a medical or podiatry need. Check with the local NHS Podiatry Service for access criteria and available services.
- To prevent the spread of infection, individual clients should have their own nail clippers and nail files.
- People with diabetes should have a risk assessment carried out at least annually by a registered health professional
- Don't cut corns, calluses or in-growing toenails

B 2.5.1 Diabetic foot ulcers^{27,28}

Diabetic foot ulcers need to be assessed at least once a year and treated appropriately, so refer to a specialist clinic. Good fitting shoes can help avoid foot ulcers, see the notes above.

The hospital-based chiropodists/podiatrists and orthotists may have a range of information leaflets and may offer training.

Inadequate assessment, and failure to implement preventative measures, may result in unnecessary amputation.

Improve general health and circulation by:

- Controlling diabetes
- Reducing cholesterol
- Treating high blood pressure
- Stop smoking
- Observe for changes in the feet (cuts, bruises, blisters, redness, corns, calluses, verrucas) and seek professional advice

B 3.0 Protective clothing/equipment^{13,29,30,153}

Protective clothing is an essential part of health and social care. It provides protection from micro-organisms for both carers and clients. It is used to protect the skin (and sometimes airway or mucous membranes) from contact with blood and body fluids, and also protects clothing from contamination. The use of protective clothing should be based on an assessment of the risk of spread of micro-organisms from person to person and the risk of contamination of the carer's clothing or skin.

B 3.1 Disposable gloves³⁰

A range of appropriate gloves should be available and accessible to staff **(Table 3)**

- Gloves are to be worn whenever contact with body fluids, mucous membranes or non-intact skin is anticipated
- Gloves are not to be worn as an alternative to hand hygiene
- Gloves should be changed after each procedure and hands washed following their removal
- To remove glove: grasp wristband and pull forwards over the hand and fingers, inverting the glove. Avoid contaminating the skin
- Washing gloves with soap and water or alcohol should not be undertaken, because this may not be effective and may damage the glove
- Gloves should be seamless, well fitting and powder-free.
- A latex-free glove should be available for anyone who has a latex allergy

Table 3 Selection of appropriate gloves³⁰

Procedure to be performed	Suitable Gloves
1. Invasive procedures which involve breaking the skin, e.g. surgery, for which high levels of protection for the client and carer are required	Sterile, non-powdered latex examination, or surgeons' glove. For those who are sensitised to natural rubber latex (clients and staff), there are synthetic materials available e.g. nitrile or neoprene
2. Non-invasive procedures involving exposure to blood or body fluids, or exposure to excreta, such as urine, faeces, vomit, and where there is little likelihood of exposure to blood or hazardous/corrosive substances.	Non-sterile, non-powdered vinyl or latex examination glove. For those who are sensitised to natural rubber latex, there are synthetic materials available e.g. nitrile or neoprene. Polythene gloves are not recommended.
3. General cleaning procedures	Flock-lined, latex, nitrile or vinyl gloves. If contact with blood or body fluid is likely, wear a glove that is comparable with (2) outlined above
4. Handling chemicals , or other hazardous substances	A glove that offers the necessary protective qualities, e.g. latex for high resistance to water-based chemicals and nitrile for resistance to solvents and oil-based chemicals.
5. Food handling	Polythene, if necessary

B 3.2 Aprons/gowns

These are worn to protect the clothing from contamination. The decision to wear an apron is based upon an assessment of the risk of contamination with body fluids e.g. diarrhoea. They are single use and should be changed between tasks, then discarded appropriately. Colour coding of the aprons can be useful, though not essential. An example of this may be:

Blue food handling and feeding

White general uses

Red in wards and communal settings, when caring for clients with infection

Examples of when they should be worn:

- During bathing
- When helping clients in the toilet
- When cleaning equipment, sanitary equipment and environment
- During bed making
- During food handling

Full-length, long-sleeved, fluid-repellent gowns should be worn when there is a risk of gross contamination with body fluids, e.g. assisting during childbirth or caring for a patient in isolation with highly contagious diseases such as Severe Acute Respiratory Syndrome (SARS).

B3.3 Masks, visors, eye protection

These are worn when a particular procedure is likely to cause splashing of blood, tissues or chemical into the eyes, face or mouth.

A high-efficiency, particulate filter mask (known as a respirator) should be worn when caring for a client who is known to have sputum smear positive (open) tuberculosis of the lung or SARS. These can be obtained via supplies, directly from the manufacturer or, in an emergency, from the chest unit at the local district general hospital. Advice on whether it is necessary to wear a mask can be obtained from the Health Protection Unit or the local clinical team responsible for the care of the client.

B 3.4 Uniforms

- Uniforms do not constitute protective clothing
- During the course of the working day uniforms will become contaminated with micro-organisms
- Uniforms should be protected from gross contamination by the use of disposable aprons.
- Uniforms should have short sleeves and should not be fitted with buttons.
- The material should be able to withstand a wash temperature of 60°C.
- Staff should change into normal clothing at the end of the working day.
- If wearing uniform to and from work is unavoidable, cover uniform with an outer layer
- A sufficient supply of uniforms should be provided so that a clean uniform can be worn every day
- If staff wear their own clothes in the workplace similar hygiene measures should be employed.

B 4.0 Cleaning/decontamination of the environment^{29,31, 129, 131, 153}**B 4.1 Introduction**

In general, it is considered that the environment has a relatively low role in the transmission of infection. However the environment is known to play an important role in cross infection during outbreaks. Door handles, flush handles, taps etc have all been implicated. Therefore, special attention must be played to these fittings during outbreaks.

In addition, accumulations of dust, dirt and liquid residues will increase infection risks and must be reduced to the minimum. This can be achieved by regular cleaning and by using good design features in buildings, fittings and fixtures. Contact the Health Protection Unit / Infection Control Team for advice.

An audit programme for monitoring the standard of hygiene should be in place in all community hospitals and residential care settings.

B 4.2 Clinical settings

A written cleaning schedule should be devised, based on a Control of Substances Hazardous to Health²⁹ (COSHH) assessment, which includes the management of spillage of body fluids and regular removal of dust by damp dusting high and low horizontal surfaces. This should specify the persons responsible for cleaning (especially in the cleaner's absence), the frequency of cleaning and methods used and the expected outcomes.

Work surfaces and hard floors should be smooth-finished, intact, durable, of good quality, washable, should not allow the pooling of liquids and be impervious to fluids.

Carpets are not recommended in treatment rooms or other clinical areas likely to be regularly contaminated with body fluids. Where carpets are provided there should be procedures or contracts in place for regular cleaning and for dealing with spillage. Curtains should be cleaned when soiled or periodically (e.g. six monthly) and an adequate supply of curtains purchased to facilitate this.

B 4.3 Client's own homes

The main aim of hygiene in the home is to target those places where pathogenic microbes may reside and have the potential to cause infection, e.g. toilets, kitchens and spillages of body fluids. Normal cleaning methods, such as vacuuming and damp dusting/cleaning surfaces, are generally all that is required. If another member of the family, or an informal carer, lives there be sure they know what you are doing and why. Tact may be needed as they may feel the house is clean enough already, especially if they do the cleaning normally.

B 4.4 Cleaning materials

Disposable, non-shedding cloths or paper roll should be provided for cleaning purposes. Equipment and materials used for general cleaning should be kept separate from those used for the cleaning of body fluid spillage. Do not leave cloths or mops stored in disinfectants or buckets. Colour coding of cleaning equipment (cloths, mops, gloves) is advisable, for example:

Green	Kitchens only, never used elsewhere.
Blue	General areas e.g. offices, wards/departments
Yellow	Washbasins, washroom surfaces.
Red	High risk areas e.g. sluices, toilets, washroom floor
White	Isolation rooms, operating theatres and anterooms

Cream cleaner or a hard surface cleaner is usually suitable for cleaning hand washbasins and general-purpose detergent is recommended for other environmental cleaning. Follow manufacturer's instructions. Wipes impregnated with 70% alcohol can be used for those items that cannot be immersed e.g. electrical equipment. A COSHH assessment is required for any cleaning materials used.

For suggested methods and frequencies of cleaning the environment and equipment, refer to **Table 6**.

B 4.5 Management of the spillage of blood and high-risk body fluids¹¹

Spillages of blood and high-risk body fluids must be dealt with quickly and effectively. Disposable gloves and an apron must be worn and in clinical settings the contaminated debris treated as clinical waste. In domiciliary settings the waste should be contained in a plastic bag that is securely tied and discarded in the household waste.

Chlorine-releasing agents can be a hazard especially if used in large volumes, in confined spaces or mixed with other chemicals or urine. Protective clothing must be worn and the area well ventilated. A risk assessment and COSHH assessment must be carried out if using these chemicals. Increased risk is related to the likelihood of infection. Following a risk assessment and depending upon the products available, spillage may be dealt with by any of the following methods.

B 4.5.1 Sodium dichloroisocyanurate (NaDCC) method (not carpets and soft furnishings)

- Wearing protective clothing, cover spillage with NaDCC granules
- Leave for at least two minutes
- Scoop up the debris with paper towels and/or cardboard
- Wash the area with detergent and water and dry thoroughly
- Dispose of all materials as per **B 7.0**
- Clean the bucket/bowl with fresh soapy water and dry
- Discard protective clothing and wash hands

B 4.5.2 Hypochlorite method (not carpets and soft furnishings)

- Wearing protective clothing, soak up excess fluid using disposable paper towels
- Cover area with towels which have been soaked in 10,000 parts per million of available chlorine (e.g. Haz Tabs) and leave for at least two minutes
- Remove organic matter using the towels and discard as per **B 7.0**
- Clean area with detergent and water and dry thoroughly
- Clean the bucket/bowl in fresh soapy water and dry
- Discard protective clothing and wash hands

B 4.5.3 Detergent and water method (for soft furnishings and carpet)

- Steam clean **or**
- Wearing protective clothing mop up organic matter with paper towels or disposable cloths
- Clean surface thoroughly using a solution of detergent and water and paper towels or disposable cloths
- Rinse the surface and dry thoroughly
- Dispose of materials as per **B 7.0**
- Clean the bucket/bowl in fresh hot, soapy water and dry
- Discard protective clothing
- Wash hands

B 4.6 Management of spillage of low-risk body fluids (urine, faeces, vomit etc)

- Wearing protective clothing mop up organic matter with paper towels or disposable cloths
- Clean surface thoroughly using a solution of detergent and water and paper towels or disposable cloths
- Rinse the surface and dry thoroughly
- During outbreaks of viral gastroenteritis disinfect surfaces using 0.1% chlorine solution after cleaning
- Dispose of materials as per **B 7.0**
- Clean the bucket/bowl in fresh hot, soapy water and dry
- Discard protective clothing
- Wash hands

B 4.7 Routine cleaning of isolation rooms

- Wear personal protective clothing (at least disposable gloves and apron)
- Use a fresh solution of detergent and water and disposal cloths or paper roll. If indicated, e.g. outbreaks of gastrointestinal infection, disinfect with chlorine-releasing agent after cleaning or use a combined cleaner-disinfectant. Change cleaning solution frequently
- Clean or damp dust in the following order, if possible:
 - Fittings and furniture using detergent and water
 - High level surfaces and curtain rails
 - Door handles and horizontal surfaces
 - Patient equipment
 - Bath or shower room, toilet
 - Mop the floor
- Discard waste as clinical waste
- Empty waste bin, clean inside and out, and insert new liner
- Clean all cleaning equipment and leave to dry
- Restock paper towels, liquid soap and other supplies
- Wash hands

B 4.8 Terminal cleaning of isolation rooms

- In addition to the above
 - Remove/dispose of unwanted items (flowers, equipment etc)
 - Clean, and disinfect if necessary, all furniture and fittings
 - Take down curtains and send to the laundry
 - Strip the bed. Clean mattress with detergent solution and disinfect if necessary
 - Vacuum the floor
 - Hang clean curtains

B 5.0 Cleaning/decontamination of equipment^{29,32-52, 146, 153}

The decontamination of medical devices has been the subject of a number of Health Service Circulars (HSC1999/179 and HSC 2000/032). All NHS premises must comply with the National Decontamination Strategy by 31 March 2007, monitored by the Healthcare Commission. Options include:

- Centralise all decontamination to an accredited Sterile Services Department
- Use only single-use devices
- Undertake decontamination locally to all applicable standards
- A combination of the above

For information for PCTs visit:

<http://www.dh.gov.uk/assetRoot/04/12/17/93/04121793.doc>

The national decontamination training programme can be accessed at:

<http://decontaminationtraining.nhsestates.gov.uk/>

B5.1 Risk assessment³²

Equipment can be categorised according to the risk of infection it poses to the client.

- Items in contact with intact skin are classed as **low risk** and should be cleaned.
- Items in contact with mucous membranes (eyes, mouth or rectum) are classed as **medium risk** and at least disinfected between uses.
- Items that enter the body or have contact with broken skin, broken mucous membranes or with the vagina³⁷ are classed as **high risk** and must be single use or sterilised.

Table 4 Risk assessment for decontamination of equipment³²

Risk	Application of Item	Recommendation
Low	<ul style="list-style-type: none"> In contact with healthy skin or: Not in direct contact with patient e.g. furniture, mattresses, surfaces.	Single use item or Clean item
Medium	<ul style="list-style-type: none"> In contact with mucous membranes or Contaminated with virulent or readily transmissible organisms (body fluids); or: Prior to use on immuno-compromised patients e.g. thermometers, auroscope earpieces.	Single use item or Clean item then disinfect or sterilise (Item does not need to be sterile when used) NB Items used in the vagina or cervix must be single use or sterilised³⁷
High	<ul style="list-style-type: none"> In contact with a break in the skin or mucous membrane; or: For introduction into sterile body areas e.g. uterine sounds, surgical instruments	Single use item or Clean item then sterilise Use item sterile

(Adapted from Medical Devices Agency, 1999 - updated 2002 & 2005)³²

B 5.2 Cleaning^{29,32-36}

Thorough cleaning with detergent and/or enzymatic cleaner and warm water (body temperature) will remove large numbers of micro-organisms from a surface, especially if the article can be rinsed. A further reduction in numbers occurs as the surface dries. Devices cannot be effectively disinfected or sterilised without having first been thoroughly cleaned and dried. Cleaning will not be effective if surfaces are damaged or rusty.

An automated method such as a thermal washer/disinfector is the most effective cleaning method and is recommended for cleaning all medical devices including surgical instruments.

B 5.2.1 Washer-disinfectors^{32,35}

Thermal washer-disinfectors physically clean devices and kill micro-organisms by applying hot water at disinfection temperatures. They are used for cleaning instruments, bedpans, urinals and other devices. They must have a contract for planned preventive maintenance and must be cleaned and maintained in accordance with Health Technical Memorandum (HTM) 2030³⁵. Daily records must be kept of the cycle.

B 5.2.2 Ultrasonic washers^{32,35}

Ultrasonic washers are not recommended for use in NHS premises. If used:

- Ultrasonic cleaners must be used in accordance with manufacturer's instructions and HTM 2030.
- The lid must be on when operated to avoid the dispersal of aerosols and to protect users from noise.
- These cleaners cannot be used for plastic or similar materials
- Cannulated instruments can be used in ultrasonic washers, but must also be flushed or brushed with cleaning solution, or attached to a nozzle on the washer
- Check with the manufacturer that the washer is suitable for the items to be cleaned
- Hinged items should be opened before loading in the washer
- Remove gross contamination and soiling from devices before loading
- A low foaming surfactant or detergent should be used in the washer
- Fill with clean water and the required volume of detergent prior to use
- Bring up to the operating temperature and operate for at least 5 minutes to de-gas the solution
- After de-gassing load the washer and replace the lid
- Once clean (after the recommended time) remove the basket and rinse instruments in very hot water (at least 60⁰ C) before drying
- Empty the tank after 4 hours, or when visibly soiled, or at the end of the session, whichever is soonest. Clean and dry.

B 5.2.3 Manual cleaning^{32,36}

Medical devices and instruments must not be cleaned by hand although this is an acceptable method for cleaning the environment and low risk patient equipment such as beds, commodes etc. A risk assessment and records of agreed procedures must be in place to ensure that a consistent method is employed by all staff. Disposable gloves and apron are advised, and the use of enzymatic cleaners or detergent and warm water (not exceeding 35⁰ C). Avoid generating splash by immersing the item where possible. If splash is unavoidable wear protective eyewear. After cleaning, rinse and inspect the equipment. If the item remains soiled, repeat the cleaning process. Ensure the item is dried as quickly as possible either using paper roll or by inverting to air-dry.

B 5.2.4 Cleaning materials

Cleaning equipment (brushes, mops etc.) must be kept clean and dry between uses. Re-usable cloths are not recommended.

B 5.3 Disinfection³²

Disinfection is a process used to reduce the number of micro-organisms to a level that is considered safe, but which may not necessarily destroy some viruses or bacterial spores. Disinfection is usually acceptable for devices that pose a medium risk of infection if these devices cannot be effectively sterilised. Disinfection can be achieved in a number of ways including the use of heat and chemical disinfectants. Both methods have their drawbacks and it is often safer and more convenient to use a disposable device instead. Further advice can be obtained from the publication *Guidance on Decontamination*, prepared by the Microbiology Advisory Committee to the Medical Devices Agency. It is available on a CD-ROM and on the Medicines and Healthcare Products Regulatory Agency's website: www.medical-devices.gov.uk.

B 5.3.1 Heat disinfection³²

Dishwashers, washing machines and washer-disinfectors are effective methods for disinfecting equipment because they clean the item and then expose the items to hot water for the required time to achieve thermal disinfection.

65^o C for 10 mins

71^o C for 3 mins

80^o C for 1 min

90^o C for 1 sec

Washer-disinfectors must be maintained in accordance with manufacturer's instructions and validated using HTM2030, with particular emphasis on ensuring that the cleaning process is effective.

B 5.3.2 Chemical disinfection^{32,39,40}

Chemical disinfectants can be toxic, flammable, corrosive or have other material incompatibilities, so their use should be avoided wherever possible. Even when laboratory tests have demonstrated the effectiveness of a particular chemical to kill specific micro-organisms, in practice it may fail to do so for a number of reasons. These include:

- Inactivation of the disinfectant by a wide variety of substances, such as organic matter (blood and body fluids), certain detergents, wood, cork, plastics, rubber, some inorganic chemicals
- Presence of organic material preventing the disinfectant from contacting the surface of the object
- Decay of a disinfectant and loss of efficiency due to time, temperature, impurities, incorrect dilution
- Incorrect contact time

Chemical disinfectants must be used at the correct dilution and the device immersed for the correct length of time, depending upon the manufacturer's instructions. Disinfectants must also be suitable for the types of micro-organisms targeted. A COSHH assessment must be undertaken when selecting a chemical disinfectant in order to safeguard health.

B 5.3.2.1 Using a chemical disinfectant:^{32,40}

- Ensure the disinfectant receptacle is clean and dry
- Ensure the device is clean and dry
- Wearing protective clothing fill the receptacle with sufficient freshly prepared disinfectant to allow complete immersion of the device
- Immerse the device in the solution, ensuring there are no air bubbles and that the disinfectant has contact with all surfaces including the lumen of tubes
- Cover the receptacle and leave for the correct length of time, using a watch
- Rinse the device in water of suitable quality, e.g. sterile water
- Dry using clean, non-shedding cloth or paper
- Wash, dry and disinfect or sterilise the receptacle before storing dry

B 5.3.2.2 Selecting a chemical disinfectant^{32,39,40}

There should be very few reasons for using a disinfectant and, where possible, disposables or sterilisation are recommended.

Disinfectants must be stored, reconstituted and used in accordance with COSHH regulations.

Chlorine preparations^{39,40}

These include Sodium hypochlorite and Sodium dichloroisocyanurate (NaDCC). They usually are presented in the form of tablets, powders or granules that are then reconstituted into the required concentration. In liquid form they are less stable and have a shorter shelf-life. NaDCC releases chlorine slowly and has a more prolonged effect than Sodium hypochlorite.

Chlorine preparations are corrosive to metals and inactivated by organic matter, though NaDCC is less so than sodium hypochlorite. They should not be used on urine as this may release chlorine vapour, which is hazardous.

Milton is often used for disinfecting infant feeding equipment and catering equipment.

Examples: Haz Tabs, Actichlor, Precept, Sanichlor, Milton

See dilution table overleaf...

	Dilution of stock solution	Available chlorine	Parts per million
	Undiluted	10*	100000*
Blood spills	1:10	1%	10,000
Environment	1:100	0.1%	1,000
Clean instruments	1:200	0.05%	500
Catering/infant feeding	1:800	0.0125%	125

* Approximate values of some brands: Chlorox, Sterite, Domestos etc³⁸

Alcohol preparations

Alcohol preparations are useful chemical disinfectants because they ready diluted and can be used immediately. They are effective against most bacteria and viruses, but have poor penetration. They are flammable so must not be used near naked flames or sparks. They evaporate rapidly and can be used on equipment that may be damaged by other methods of decontamination. Disinfection occurs during evaporation of the alcohol, so items must be dry before use. Examples include:

<i>Ethanol, Industrial methylated spirit</i>	70%
<i>Isopropyl alcohol</i>	60-70%
<i>Alcohol impregnated swabs (Sterets)</i>	70%
<i>Alcohol hand rubs/gels</i>	70%

Chlorhexidine

Chlorhexidine is a skin disinfectant that is very effective at reducing *Staphylococcus aureus* and other organisms found on the skin. It is often used to decontaminate hands prior to invasive procedures such as minor surgery. It is not suitable for cleaning equipment or the environment. Examples include:

Hibiscrub
Hibitane

Combined detergent-disinfectants

Products are available that combine a detergent and a chlorine-based disinfectant for use when cleaning the environment and in particular sanitary equipment (baths, showers, toilets etc), especially used during outbreaks of gastrointestinal infection. Examples include:

Titan Sanitiser, Chlorclean, Actichlor plus

B 5.4 Sterilisation³²

Sterilisation is a process used to render an object free from all micro-organisms.

It is recommended that sterile equipment should be obtained pre-sterilised from a manufacturer or via a Central Sterile Supplies Department (CSSD). Bench top steam sterilisers need intensive maintenance and rigorous controls in place to ensure their effectiveness and their use should be restricted to situations where CSSD or disposables are not available. The decision to use bench top steam sterilisers should be accompanied by a risk assessment. Systems and records must be in place to ensure that all staff employ consistent methods and equipment is functioning effectively. NHS organisations must be able to demonstrate compliance with the National Decontamination Strategy by 31 March 2007 and the Healthcare Commission will monitor compliance.

B 5.5 The use & maintenance of bench top steam sterilisers^{32,41-49}

The use of bench top steam sterilisers should be restricted to those situations where it is not possible to utilise the services of the Central Sterile Supplies Department. Users and owners must be aware of the legal implications in the event of infection or untoward exposure that may result from procedures using devices that have been processed incorrectly. Operators of sterilisers must be suitably trained and the steriliser maintained and tested frequently to ensure that it is achieving sterilising conditions consistently.

Where it is agreed that a bench top steam steriliser will be used, the model of steriliser used must be appropriate for the load. A standard (downward displacement) bench top steam steriliser is intended specifically to process solid, unwrapped instruments without lumens. Vacuum (porous load) bench top sterilisers may also be used to process wrapped loads and instruments with lumens. The latter are expensive to buy and their cost of ownership is high, because testing and maintenance is complicated and takes a long time.

The safe operation of steam sterilisers include:

- Daily checks by the User and other periodic testing by a qualified test engineer
- Provision of clean steam by correct management of the reservoir and chamber
- Quarterly servicing and maintenance
- Correct loading
- Accurate record keeping and log book maintenance
- Training of the operator

These are outlined below, but detailed guidance on the purchase, use and operation of bench top steam sterilisers can be found in bulletins published by the Medical Devices Agency^{42,43}. Health Technical Memorandum 2010⁴⁵ provides comprehensive guidance on all aspects of sterilisation and sterilisation processes.

B 5.5.1 Purchase of a bench top steam steriliser

Those involved in the purchase of equipment should refer to MDA DB 2002 (06)⁴² and must obtain the supplier's assurance that the steriliser is suitable for the loads that the user intends to process, because some machines have limited function. For advice contact the Infection Control Team, an Authorised Person (sterilizers) (contact details available from PASA – www.pasa.nhs.uk) or Strategic Health Authority Decontamination Lead.

The processing of wrapped instruments and utensils, instruments with lumens and the processing of porous loads cannot be carried out in standard bench top steam sterilisers. Items such as these must be processed in a vacuum, or porous load, steriliser that the manufacturer has validated for this type of load.

B 5.5.2 Installation and commissioning of a bench top steam steriliser⁴²

After a steriliser has been installed, it must be checked and tested (commissioned) by a properly trained and qualified test person who may be employed by the manufacturer or a contractor. These checks and tests are intended to demonstrate that the steriliser functions correctly and complies with the specification. The test results must be recorded in the steriliser logbook. A steriliser that has not been commissioned, or fails any test during commissioning, or periodic testing, must not be used until the cause has been identified and corrected. It must then be fully re-tested and fulfil all test requirements satisfactorily before being used.

B 5.5.3 Logbook⁴²

Each steriliser must have its own logbook, which provides a permanent record of all testing, maintenance and repairs performed on the steriliser. It must contain a record of all actions taken in the event of a failed cycle or a failed test. The logbook may provide useful evidence in a case of litigation.

B 5.5.4 Testing and Maintenance⁴²

The owner/user is responsible for daily/weekly testing, which are designed to show that the operating cycle functions correctly. **See Table 5.** Record all observations in the logbook. An independent recording device can be fitted to some types of steriliser and will provide a permanent record that can be kept in the logbook. The observed values must be within the established time-temperature limits for the cycle. A more comprehensive description is given in MDA DB 2002 (06).

A Test Person (sterilisers) must conduct quarterly and annual testing. Owners of bench top steam sterilisers must ensure that the steriliser is subject to a planned and documented schedule of preventative maintenance. The manufacturers will also advise on these aspects. HTM 2010 Part 3 provides comprehensive information on all aspects of testing bench top steam sterilisers.

B 5.5.5 Indicators ^{32,42,49}

Chemical and biological indicators play only a limited part in the validation and routine control of steam sterilisers. They are regarded as supplementary to the measurement of temperature, pressure and time. They may not demonstrate sterility of the load and may serve only to distinguish loads that have been sterilised from those that have not.

If chemical or biological indicators are used, they must be correctly selected and used for the process specified by the manufacturer. The same applies to the use of steam penetration test kits. Results must be recorded in the log book.

Table 5 Routine testing of bench top steam sterilisers⁴²

Traditional Steriliser	Vacuum Steriliser
Daily	
<p>Automatic control test:</p> <ul style="list-style-type: none"> - Operate normal cycle with chamber empty except for shelves <i>etc.</i> - Record of temperatures, pressures, elapsed time at all significant ends of the operating cycle - Check door cannot be opened during operation 	<p>Automatic control test:</p> <ul style="list-style-type: none"> - Operate normal cycle with chamber empty except for shelves <i>etc.</i> - Record of temperatures, pressures, elapsed time at all significant ends of the operating cycle - Check door cannot be opened during operation
	Steam penetration test
Weekly	
Examine door seals	Examine the door seal
Check the security and performance of the door safety devices	Check the security and performance of door safety devices
Check safety valves <i>etc.</i> are free to operate	Check safety valves <i>etc.</i> are free to operate
	Air leakage test (automatic)
	Automatic air detection system function test
	Automatic control test
	Steam penetration test
Quarterly and annual tests by an engineer	

B 5.5.6 Cleaning instruments prior to sterilisation^{32,36,42}

Cleaning is an essential pre-requisite to effective sterilisation; the steriliser does not wash or clean equipment. Dirty instruments placed in the autoclave may not be sterilised as the contaminant may coagulate and form a barrier, which the steam cannot penetrate. Such instruments must be regarded as non-sterile and they must not be used until they have been cleaned thoroughly and re-sterilised. (See B 5.2).

A washer-disinfector is recommended for cleaning instruments. After cleaning, instruments must be stored dry.

B 5.5.7 Loading the steriliser

Sterilisation relies on the contact of steam with all surfaces of the load for a given period of time. Droplets of water may result in cool spots and corrosion, and incorrect loading may prevent steam penetrating throughout the load. Both will prevent sterilisation. Therefore:

- Instruments must be dry when loaded into the steriliser
- They must not touch each other
- Bowls and receivers should be placed on edge. This will enable steam to displace air upwards and downwards and prevent air becoming trapped
- Hinged instruments must be left open
- The machine and baskets must not be overloaded

B 5.5.8 Storage of sterilised instruments

Instruments sterilised in a bench top steam steriliser should be used as soon as possible after being autoclaved. They may be stored in a sterilised container while awaiting use. Some instruments need to be sterilised between uses to prevent cross infection, but can be used clean at point of use. Do not immerse instruments in a chemical disinfectant whilst awaiting use.

B 5.5.9 Use of sterilised instruments⁴²

After sterilisation the steam condenses and the instruments will be wet unless the steriliser has an effective drying stage. Once the door of the steriliser is opened the load will quickly become contaminated with airborne particles.

Devices that must be sterile when used e.g. for minor surgery and dentistry. Once sterilised these devices should be used immediately. If this is not possible the instruments may be separated into two cycles, or used within 3 hours of sterilisation. If they are not used immediately they should be dried in the steriliser using a post-sterilisation drying cycle and covered with a sterile towel/lid.

Devices that must be sterilised between uses, but clean when used (e.g. speculae for normal vaginal examination). Once sterilised the instruments may be stored in a clean, dry environment. Alternatively, devices once sterilised and dry can be placed in pouches (e.g. Steri-pouches) to protect them from contamination.

Sterile devices that are transported outside the clinic e.g. dental or podiatry instruments used for treatment in the home. Must be carried in a sterilised container or pouch to protect them from contamination. Ideally they should be in individualised sets for each treatment.

Pouches (e.g. Steri-pouches) must only be used in a vacuum steam steriliser. If pouches are used in a steriliser they must be thoroughly dry before opening the door of the steriliser, because micro-organisms can penetrate damp packaging.

B 5.5.10 Reservoir and chamber management^{41,42}

Poor management of the reservoir and chamber can result in contaminated steam being used. Full guidance is available in HTM 2031.

- Empty, clean and dry the reservoir and chamber when not in use
- Refill the reservoir (not topped-up) with sterile water for irrigation prior to use
- Clean the chamber with sterile water for irrigation before and after use and left dry.

B 5.5.11 Traceability and record keeping^{42,146}

It is important to have good quality record keeping systems in place to provide evidence that each steriliser functions correctly and achieves sterilising conditions. The logbook will provide a complete history of the steriliser. MDA DB2002 (06) gives full details of the records that need to be kept. Records of every cycle should be kept to demonstrate that the load has been effectively sterilised. If control indicator strips or automatic printouts are used they must also be recorded in the logbook.

Tracking and traceability systems that are suitable for the level of procedures being undertaken must be in place, e.g. for invasive procedures details of the specific cycles on washer-disinfector and sterilisers must be kept in patients' notes.

B 5.5.12 Key points for sterilisation of instruments in the community

- Ensure that decontamination processes comply with the National Decontamination Strategy
- Arrange the workflow to keep dirty and sterilised instruments separated.
- Clean and dry instruments using a washer-disinfector prior to sterilising.
- Wear gloves, apron and eye protection (if required) when cleaning instruments.
- Transportable steam steriliser must be suitable for processing the intended loads.
- Users of sterilisers must be trained in their use and maintenance
- Sterilisers must be maintained and tested quarterly and annually by a qualified engineer.
- User must carry out and record the daily and weekly checks as per **Table 5**.
- Report any fault immediately to the engineer.
- Empty reservoirs at the end of the session/day
- Replenish reservoirs with sterile water for irrigation prior to next session.
- At the end of the session/day, rinse internal surfaces with sterile water for irrigation
- Load instruments into the steriliser so that they are not touching.
- Instruments must be sterilised for:

3 minutes	at 134⁰ – 137⁰ C
10 minutes	at 126⁰ – 129⁰ C
15 minutes	at 121⁰ – 124⁰ C

- Instruments that are **wrapped or in pouches** must only be sterilised in a vacuum steriliser.
- Instruments with **narrow lumens, or porous loads** must only be sterilised in vacuum steriliser.
- Do not soak instruments in disinfectants before or after sterilising.
- If a vacuum steriliser is not available send instruments with lumens and porous loads to CSSD or use disposables and process other instruments unwrapped
- Use instruments as soon as possible after being sterilised.
- Store instruments in a clean, dry, dust free place if they are to be used for clean non-sterile procedures.
- Retain records for at least 11 years

B 5.6 Decontamination of Health Care Equipment Prior to Repair, Service or Investigation^{50,51}

No equipment that has been contaminated with blood and other body fluids, or exposed to patients with a known infectious disease, should be sent to third parties without being correctly decontaminated first. If in doubt, contact the third party in advance. After decontamination and before dispatching the item it should be labelled with a declaration of its decontamination status that states the method of decontamination used, or reasons why this was not possible. (MHRA, 2003)⁵⁰.

Some equipment cannot be effectively decontaminated without being dismantled by an engineer. In addition decontamination may sometimes remove evidence of a fault or hinder an investigation. In these situations the manufacturer, repair organisation or investigating body should be contacted for advice regarding packaging and transportation. A "Biohazard" label should be attached to the item, the certificate completed accordingly and staff advised on protective measures required.

B 5.7 Home Loans Equipment⁵¹

Equipment that has been used in clinical care must be safe to handle before returning to the home loans store and the principles outlined above apply equally to equipment that is loaned for clinical or social care.

- Empty suction machines and rinse suction bottles with warm water and detergent, rinse and dry
- If soiled, clean other items with warm water and detergent and dry
- If items cannot be cleaned prior to collection/delivery inform the Home Loan Stores Manager so that precautions can be taken.
- When selecting beds, chairs etc for clients who have incontinence problems or leaking wounds select items with waterproof covering that is easily be cleaned
- Upholstered items that are superficially contaminated may be cleaned by wiping with detergent and water or by a steam clean.
- Upholstered items that have been grossly contaminated may need to be re-upholstered or destroyed
- Home loans staff involved in collecting used items should wear disposable gloves when handling potentially soiled items.
- Remove the gloves once item is loaded and clean hands using alcohol wipes/gel or soap and water.

B 5.8 Endoscopes ^{29,32,52}

- Endoscopic procedures carry a significant risk of infection and it is therefore recommended that endoscopy be not undertaken in community settings without first carrying out a comprehensive risk assessment. To reduce the risk of infection to a minimum requires excellent decontamination facilities including cleaning, disinfection and/or sterilisation procedures.
- Should it be considered necessary to introduce a community endoscopy service reference must be made to the MDA DB2002(05) Decontamination of Endoscopes⁵² and advice sought from the relevant hospital and community infection control teams and managers of sterile services. Specific procedures must then be developed which are relevant to the location, the type of endoscopy to be undertaken and the risk of infection.
- Single-use devices are recommended wherever possible and any re-usable items must be traceable in accordance with Health Service Circular HSC2000/032³⁴.
- Where disinfectants are used a COSHH assessment²⁹ must be undertaken and controls put in place to ensure that the patients, staff and visitors exposure to the chemical does not exceed the maximum exposure limit (MEL).
- Glutaraldehyde is not recommended in community settings. If it should never be used if other appropriate disinfectants are available. If its use is unavoidable a number of controls must be in place to limit exposure to fumes and contact with the chemical, to manage spillage and to monitor staff health.

Table 6 Decontamination methods and frequencies**For specific advice refer to manufacturer's recommendations**

Item	Method
Auroscope ear pieces	If soiled, remove wax by cleaning with general-purpose detergent and warm water (<35 ⁰ C), using a thin brush to clean inside. Then disinfect by: <ul style="list-style-type: none"> a) Immersing in 70% alcohol for 10 minutes or b) Pulling through the lumen a 70% alcohol impregnated swab or c) Autoclave to sterilise Brushes should be cleaned and dried or discarded
Baby scales	Protect from soiling with paper roll. Clean with detergent and water if soiled or Wipe with an alcohol impregnated cloth
Basins and taps	Clean with detergent and water, or cream cleaner, rinse and leave to dry
Baths	As for basins and taps
Bath mats	Remove from bath surface. Immerse in warm water and detergent and agitate well. After each use hang mat reverse side up to dry over the side of the bath.
Baths and showers	Follow any specific manufacturer's instructions to clean baths and showers. Spa pools, whirlpool baths, hot tubs etc require specific disinfecting procedures ¹⁴³
Bed frames	Wash with warm water and detergent, dry
Bed cradles	Wash with warm water and detergent, dry
Bedpan / commode liners	Disinfect bedpans/urinals using a washer-disinfector, OR Use disposables and discard in a macerator or as low-risk clinical waste, OR If re-usable wash with detergent and warm water, rinse with very hot water and dry using disposable paper towels. Disinfect with chlorine-releasing product or alcohol wipe.
Bins	Clean with detergent and water
Birthing pools	Follow manufacturer's advice on cleaning and maintenance. Avoid contamination of pool water if possible. Remove any debris after use. Rinse and clean pool after use using detergent and warm water. Disinfect all surfaces and outlets with a chlorine-releasing product. Discard disposable hoses.
Bowls	Clean with warm water and detergent. Rinse with hot water. Store dry, inverted, and above floor level.
Breast pumps	Individualise. Follow manufacturer's advice. Clean external surfaces of machine with detergent and warm water.
Buckets	Wash with hot water and detergent. Dry and store upside down.
Buckets for leg ulcers	Line with plastic before use, then clean as above
Carpets	Vacuum daily. There should be a schedule for cleaning carpets at least six monthly. The type of floor covering should be chosen to enable it to be cleaned regularly. Spills of body substances should be removed using a disposable paper towel (wear gloves for this) and then cleaned with carpet shampoo

Item	Method
Catheter bags Single use Drainable	Discard single use bags every morning Drain re-usable bags daily; protect the cap. Change weekly or when soiled.
Catheter stands	Individualise catheter stands. Clean with detergent and water
Catheter supports e.g. sporrans, holsters, leg straps	Individualise. Follow manufacturer's guidelines to keep socially clean. Launder if possible or clean with detergent and water.
Changing mats	Protect with paper roll. Clean with detergent and water or detergent wipes. If soiling is evident, or if there is an outbreak of diarrhoea and vomiting, then apply a chlorine releasing product (Precept, Sanichlor or bleach) after cleaning
Cloths/dusters	Use disposable if possible. If not disposable, then machine wash daily separately from clothing and store dry. Do not leave to soak
Commodes (and raised commode seats)	Clean all surfaces using warm water and detergent. If soiling is evident, or if there is an outbreak of diarrhoea and vomiting, then apply a chlorine releasing product (Precept, Sanichlor or bleach) after cleaning
Couch (e.g. treatment rooms)	Cover with paper roll to minimise contamination Avoid linen, but if used, launder as per Table 7 Between patients clean with detergent and water or detergent impregnated wipe For blood and body fluid spills See B 4.5 If the mattress is contaminated it may need to be re-upholstered
Crockery And cutlery	Wash using a dishwasher on the hot setting. If washing by hand, use detergent and warm water and a disposable cloth. Change the water frequently and rinse with very hot water. Air-dry in racks, or use disposable paper towels. Tea towels should not be used for drying up.
Dish cloths	As for cloths/dusters
Door handles	Wash with warm soapy water. In outbreaks more frequent cleaning may be needed
Drains	Rinse regularly with detergent and water
Ear syringing water reservoir and tubing* (Propulse)	Fill the reservoir with 0.1% Sodium Dichloroisocyanurate (NaDCC), run for a few seconds then allow to stand for 10 minutes. Empty reservoir and rinse system with fresh water. Disinfect system with NaDCC 0.1% for 10 minutes. Flush with sterile water and leave dry.
Ear syringing jet tip applicator*	Remove from tubing and clean tips using detergent and warm water, to remove wax. Wash in hot soapy water and rinse under running water. Soak in 0.1% NaDCC for 10 minutes. Rinse and dry
Ear syringing Jobson Horne Probe*	Send to Sterile Supplies Department. OR Wash in a washer/disinfector then autoclave. Store dry
Ear syringing Nootes ear Tank*	As for Jobson Horne Probe. Tank must cool completely before next use.
Ear syringing speculum for otoscope*	As for Jobson Horne Probe

*Copyright Primary Care Ear Centre and Mirage Dental Products

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Item	Method
ECG equipment	Clean with warm water and detergent, if non-immersible wipe with a soapy cloth rinsed almost dry. Store dry.
Electronic medical devices	Follow manufacturer's instructions. In general switch off and wipe clean using a soapy cloth or alcohol wipe with a between uses
Examination couch (see couch)	
Face flannel/ towels	Flannels and towels must never be shared. If rooms are shared personal towels, etc. should be allocated to each client. Dry between uses. Launder on a hot wash. In communal areas such as toilets, disposable paper towels should be provided.
Family planning equipment Vaginal speculae Trial size diaphragms And intra-uterine fitting devices	The Department of health recommends that all items entering the vagina must be adequately decontaminated between uses. This can only be achieved by sterilisation using heat, not by using disinfectants or boiling water Use sterile, single use items where possible If re-usable, send to a Sterile Supplies Department OR if this is not possible: Clean with warm water and detergent then autoclave and store dry
Floors	Ideally, all floors should be vacuumed, whether carpeted or not, to prevent dust being dispersed. Control dust on uncarpeted floors with an anti-static mop and clean with detergent and water when soiled or daily. Rinse and dry.
Furniture	Hard surfaces should be damp dusted with detergent and water. Disinfect if used by an infected patient Vacuum soft furnishings regularly If superficially soiled or during outbreaks steam clean If grossly soiled the item may need to be re-upholstered or thrown away
Glucose monitoring devices	Follow manufacturer's instructions for cleaning between uses. Use disposable lancets, platforms and devices.
Growing skills toolkits	As for toys
Hair brushes and combs	Individualise. Wash in warm soapy water, rinse and dry.
Hair clippers and scissors	Individualise . Clean with detergent and water. If contaminated with blood immerse blades in 70% alcohol for 10 minutes after cleaning.
Hand (grab) rails (e.g. toilet/bath)	Wash with detergent and water when cleaning the bath or toilet
Hoists (bath)	Follow manufacturer's instructions to clean all surfaces including back and underneath of hoists after use.
Hoists (lifting) Slings	Individualise slings or use disposables, especially if a client has an infectious disease, Follow manufacturer's guidelines. Launder if possible.
Injection trays	Wash with warm soapy water daily, wipe with 70% alcohol wipe between uses
Jugs (measurement of urine, hair washing etc)	Single use. If re-usable, disinfect in a washer-disinfector or clean as for urinals.

Item	Method
Lancets, scalpels	Single use only
Laryngoscopes	Use single use blades. If re-usable send to sterile supplies department for sterilisation. Clean handle after use with warm water and detergent or alcohol wipe if visibly clean
Lavatory brushes	Rinse in flushing water and store dry
Lavatory seat and handle (including raised seats)	Clean all surfaces using warm water and detergent. If soiling is evident, or if there is an outbreak of diarrhoea and vomiting, then apply a chlorine releasing product (Precept, Sanichlor or bleach) after cleaning
Lavatory bowl	Using a toilet cleaner, clean bowl with a toilet brush. Keep toilet brushes clean and dry and in good repair
Madsen Echoscreen White probe	Follow manufacturer's guidance Use cleaning wire to clean sound channels of the probe tip from the rear, wiping wire with alcohol before pulling it back through the sound channel
Black acoustic filter discs	Discard
Coloured silicon ear tips	Discard or clean as per manufacturer's guidance
Probe housing	Wipe with alcohol
Cable and instrument	Clean with detergent and water or wipe with alcohol
Medicine pots	Wash in a dishwasher OR Wash in warm water and detergent, rinse and dry
Mops (wet)	All mop heads should be detachable. Wash in hot soapy water. Rinse and wring out as much as possible. Invert mop to dry completely. If used in a clinical setting, launder daily. Otherwise launder weekly. Do not leave mop head soaking in water or disinfectant
Mops (dry)	Vacuum the head or discard after use
Nail brushes	Use single use brushes, sterile brushes prior to minor surgery
Nail files	Individualise where possible. Remove debris with warm soapy water. Soak in 70% alcohol for 10 minutes. Dry
Nail clippers /scissors	Individualise where possible. Remove debris with warm soapy water. Soak in 70% alcohol for 10 minutes. Dry. Use disposable clipper heads
Nebulisers	Some are single-use only, follow manufacturer's instructions. There is potential risk of legionella transmission from residual water in chamber after washing. Follow manufacturer's instructions re washing and replacing nebulisers ¹³⁶ . Use single patient use tubing. Discard all disposables.
Oxygen Masks	Each mask should only be used on one client and disposed of when no longer needed or when soiled. If attached to an oxygen point for emergency use, cover to prevent dust collection, and discarded once used.
Peak flow meters	Individualise where possible. If not single-patient use, consider using filters for each patient. Replace mouthpiece after use.

Item	Method
Scissors (clinical)	For invasive procedures and wound care, use sterile disposable or reusable scissors For clean procedures e.g. cutting bandages and tape, clean regularly with detergent and water or wipe with an alcohol impregnated wipe
Screens	Clean with warm water and detergent regularly or when soiled.
Shaving equipment	Shaving equipment, including wet or electric razors, and shaving brushes, must never be shared. Equipment should be marked with the client's name in communal settings. Clean as per manufacturer's instructions
Showers	Clean with bathroom cleanser or detergent and water. Descalc head regularly If shower is out of use for a few days run it on a hot setting for 5 minutes before next use to avoid legionella Launder shower curtains when soiled or every 3 months, replace as necessary Clean tiles regularly with bathroom cleanser and anti-mould product as required
Spa pools, whirlpool baths, hot tubs etc. (See baths and showers)	
Sputum cups	Single use
Stethoscopes	Clean as necessary. If contaminated with body fluids clean then disinfect with an alcohol-impregnated wipe (e.g. Steret)
Suction bottles	Disposable suction liners are recommended Re-usable bottles – wear protective clothing, empty contents into a slop-hopper or toilet. Disinfect bottle using a washer-disinfector OR rinse with cold water. Clean using warm water and detergent, rinse with hot water and store dry
Suction catheters	Single-patient use
Suction machine	Clean the surface using a soapy cloth, wrung almost dry. Replace filters when wet and at appropriate intervals according to manufacturer's instructions
Suction tubing	Use single-patient tubing Rinse with sterile water between uses Replace daily
Surgical, dental or podiatry instruments	Use disposables where possible. If re-usable, sterilise in a Sterile Supplies Department. OR Clean using a washer-disinfector, then autoclave. Store dry.
Tea towels	Use disposable paper where possible, or launder
Thermometers	Use disposables or disposable sheaths and discard after use Before and after each use wipe with 70% alcohol impregnated swab and store dry
Toilets (see lavatory)	
Tooth mugs	Disposable or client's own. Use dishwasher or clean with warm water and detergent, rinse with hot water and dry.
Toys	Individualise if possible. Launder soft toys and dry quickly. Clean hard surfaces with warm soapy water or a hard surface disinfectant. More frequent cleaning may be needed in presence of infection.

Item	Method
Trolley/tray for dressings etc	Clean with detergent and warm water. Dry. Wipe top with 70% alcohol impregnated between patients
Urinals	Use disposables where possible Re-usable urinals – disinfect in a washer-disinfector. OR if not available: Wear protective clothing, empty contents into a slop-hopper or toilet. Rinse and clean using warm water and detergent or chlorine-releasing product. Rinse in hot water, and store inverted to dry thoroughly
Vacuum Cleaners	Filters prevent dust contamination, change as per manufacturer's instructions. Wipe attachment tools with hot water and detergent when soiled or weekly
Vases	Rinse and remove any debris. Wash in warm water and detergent, rinse and invert to dry thoroughly or use dishwasher
Vitalograph	Use non-return mouthpiece and discard after use. Use an approved filter
Walking frames	Clean with warm soapy water and dry
Walls	Remove splashes etc with warm water and detergent as necessary
Wash basins	Clean using a suitable cleanser or warm water and detergent. Rinse and allow to dry Remove scale periodically using a descalent
Wheelchairs	Clean with warm soapy water and dry
Weighing scales	Line with disposable paper roll and clean with detergent and warm water Wipe with 70% alcohol impregnated wipe
Work surfaces	Clean with hard surface cleaner or warm water and detergent. If contaminated with body fluid disinfect with chlorine or wipe with 70% alcohol after cleaning

B 6.0 Laundry ^{4, 53, 145}

Aim:

- The eradication or reduction in the number of organisms on linen/clothing
- Minimise the use of linen where no laundry service is available
- Protection of staff and prevention of cross infection

B 6.1 Handling used linen

Linen may be contaminated with bodily fluids and debris. Inspect the linen when removed. If fouled with body fluids, linen should always be removed using gloves and disposable aprons. Where solid matter is present, this must be removed using disposable paper and disposed of in either a WC or slop-hopper.

Foul/infected linen should not be handled any more than is absolutely necessary. Do not sluice by hand as this may spray micro-organisms onto surfaces, uniforms and skin. Soiled or fouled articles should be washed on the hottest cycle the fabric will allow. Those items that are not washable, should be dry cleaned or, if necessary, destroyed.

Bed linen should not be shaken and it must be removed with care, avoiding the creation of dust and dissemination of skin scales.

B 6.2 Colour-coding used linen

In clinical settings, a laundry service may be available and used and soiled linen should be placed into the appropriate colour laundry bag. If a laundry service is not available, use paper products where possible. In residential care settings it can be helpful to introduce a colour-coding system. Assess the condition of used linen and clothing to decide which category it falls into. **See Table 7.**

Table 7 Segregation and laundering of used linen

Category	Description	Laundering requirements
Used linen and clothing	Linen that is used but not contaminated with urine, faeces, blood, vomit, sputum or any other bodily fluid or debris	<ul style="list-style-type: none"> • White laundry bag • A sluice cycle is not required. • Launder at 65⁰C for at least 10 minutes, or 70⁰C for 3 minutes • Or as per care label
Foul or infected linen and clothing	Linen that is contaminated by bodily secretions or faeces, or from a person with a known infectious condition	<ul style="list-style-type: none"> • Remove solid waste • Place in a red alginate bag using gloves and apron • A sluice cycle may be needed • Launder at 65⁰C for at least 10 minutes, or 70⁰C for 3 minutes
Heat sensitive fabrics	Linen that is soiled or fouled and cannot be washed at high temperatures	<ul style="list-style-type: none"> • If fouled, disposal may be necessary • Dry cleaning may be possible for some items

B 6.3 Laundry practice in residential care settings and client's home

- Always wash hands after handling used linen
- Gloves must be available for handling fouled linen
- Staff who undertake laundering must receive training
- Laundry must not be sorted on the floor.
- Washing machines and driers should not be sited in kitchens. This may be unavoidable in client's homes, so avoid doing laundry at the same time as the cooking and ensure hands are washed.
- Foul or infected laundry should be laundered after all the other routine laundry has been done, using the hottest wash available for that fabric.
- Used linen and fouled/infected linen should not be laundered together.
- The washing machine must not be over loaded to ensure that the machine functions adequately.
- Laundry baskets should be cleaned with detergent and water after containing soiled or fouled linen, or at least weekly.
- Kitchen items and mop heads must be washed separately.
- Use separate cleaning equipment for the laundry area.
- Disinfect washing machines weekly by running a hot programme without a load.
- Prevent contamination of clean linen

B 6.4 Laundry facilities in residential care settings

A separate laundry facility, which is used solely for that purpose is recommended for all residential care settings. However, it is recognised that this is not always available in the client's own home.

In a clinical environment, a full written risk assessment must be performed of all laundering facilities. The person in charge should regularly review the risk assessment.

B 6.4.1 Wash hand basin

- Lever action mixer taps are recommended
- Liquid soap and paper towels must be available
- A foot-pedal operated bin for paper towels should be provided

If hand washing delicate materials or other personal items is undertaken, a designated sink or bowl, which is separate from the wash hand basin, must be used.

B 6.4.2 Washing Machines

An industrial washing machine with a sluice cycle is recommended. Machines must be regularly maintained and records retained

B 6.4.3 Drying facilities

Tumble driers are recommended.

B 6.4.4 Design of the laundry

- The floor, walls, splash-backs, draining boards etc of the laundry must be easily washed with no cracks visible in the surface. It is advisable that floors are non-slip.
- The design of the laundry must facilitate the creation of dirty and clean areas i.e. dirty linen can be brought into one area moved through the laundry as it is processed and come out as clean laundry without crossing over the route for used laundry.
- Any laundry bins should be fully washable and be well maintained.

B 6.5 During outbreaks in residential care settings

- Hand wash at appropriate times
- Use red alginate linen bags for fouled/infected linen to minimise contact. Alginate bags can be placed directly into a washing machine and will dissolve in contact with the water. Some residue may remain.
- If alginate bags are not available use red plastic bags. Empty the contents into the washing machine without handling and discard the bag.
- Minimise the number of people visiting the laundry
- Keep the laundry room and equipment especially clean
- Ensure contaminated linen is kept away from clean linen

B 6.6 Ozone washing machine (OTEX)

Otex Validated Ozone Disinfection is a new laundry system that injects and dissolves ozone into the wash water throughout the wash cycle. The manufacturers claim that the product kills micro-organisms even at low temperatures. The Health Protection Agency's Rapid Review Panel undertook a review of the product and recommended that, at the time, the product was insufficiently validated and more research was needed into its efficacy.

http://www.hpa.org.uk/infections/topics_az/rapid_review/pdf/RRS95_otex.pdf

B 7.0 Disposal of waste^{54,55,56, 145, 153}**B 7.1 Responsibilities**

The Environmental Protection Act 1990⁵⁵ applies to waste disposal. This legislation refers the **Duty of Care**, which places a duty of care on all persons producing waste to safely manage the handling and disposal of the waste in the correct and proper manner. The following information will help meet the duty of care. Healthcare waste must be managed in accordance with current legislation and national guidelines.

Healthcare organisations should have a waste policy in place, which is owned by the senior managers and supported by training and audit. Under Section 16 of the Care Homes Regulations, care homes are also obliged to have suitable arrangements in place for the disposal of waste.

This guideline does not contain all the relevant information, so it is advisable for managers to refer to the original source documents in developing local policy and discuss local policy with their waste manager or Contractor. *HTM 07-01: Safe Management of Healthcare Waste* can be accessed at: <http://www.dh.gov.uk/assetRoot/04/14/08/93/04140893.pdf>

For further information refer to the Environment Agency or see: http://www.nhsestates.gov.uk/sustainable_development.index.asp.

B 7.2 Waste categories

The new national guideline introduces the terms “hazardous” and “non-hazardous” waste.

Examples of Hazardous Waste:	Examples of Non-Hazardous Waste:
Infectious waste Medicines Amalgam Chemicals Batteries	Offensive/hygiene waste Domestic waste Food waste Packaging Recyclates (paper, glass, aluminium)

Infectious waste has two categories for the purposes of transport legislation:

Category A: An infectious substance which is transported in a form that, when exposure to it occurs, is capable of causing permanent disability, life-threatening or fatal disease in humans or animals. Highly infectious waste includes waste arising from exotic infectious diseases and laboratory cultures;

Category B: An infectious substance which does not meet the criteria for inclusion in Category A. This constitutes most infectious waste produced in healthcare.

Offensive/hygiene waste: is non-infectious waste arising from healthcare, which does not require specialist treatment but may cause offence to those coming into contact with it; i.e. human hygiene waste, incontinence products, sanitary waste, nappies, plaster casts etc.

Medicinal waste has two categories:

1. Cytotoxic and cytostatic;
2. Medicines others than cytotoxic and cytostatic

Staff must assess waste as it is produced to identify its infectious, chemical and medicinal properties and segregate appropriately for disposal. National guidelines produce useful flowcharts. See **Table 8** and **Appendix 8** for more details.

Table 8 Segregation and disposal of clinical waste^{54,55,56, 132, 133, Appendix 8}

Type of waste	Examples	Container	Disposal
Infectious waste (Category A)	Anatomical waste: placenta, tissues, organs etc, and laboratory waste. Waste from highly infectious diseases, e.g. Ebola virus	Yellow rigid lidded bin or bag	Hazardous waste incineration
Infectious waste (Category B)	Assess for infection risk. <i>Infectious:</i> dressings, swabs, bandages, pads, suction liners, stoma bags, catheter bags, plastic disposable instruments (not sharp). <i>Non-infectious:</i> treat as offensive / hygiene waste	Orange lidded bin or bag	Licensed or permitted treatment facility or incineration
Clinical sharps	Not contaminated with medicinal products OR Fully discharged sharps contaminated with medicinal products (NOT cytotoxic or cytostatic medicines)	Orange lidded sharps container	Incineration or alternative treatment facility
Clinical Sharps	Partially or undischarged sharps (NOT cytotoxic or cytostatic medicines)	Yellow lidded, liquid-proof sharps container.	Hazardous waste incineration
Cytotoxic / cytostatic waste and sharps	All contaminated waste Soft waste: including gloves, swabs, packaging etc Sharps waste: needles, syringes, ampoules etc,	Yellow bag or lidded bin with purple stripe Yellow sharps bin with purple stripe	Hazardous waste incineration
Offensive / hygiene waste	Non-infectious dressings, swabs, drains, incontinence pads, suction liners, stoma bags, catheter bags, plastic disposable instruments (not sharp).	Yellow bag with black stripe	Deep landfill
Medicines (Not cytotoxic or cytostatic)	Unused drugs and other pharmaceutical products. Never discard them into the drainage system. Controlled drugs: comply with local procedures	Yellow rigid lidded box for liquids or solids	Hazardous waste incineration
Dental amalgam and Mercury	Amalgam and teeth containing amalgam fillings NB Avoid waste by purchasing non-mercury products	White rigid box with mercury suppressant	Recovery

B 7.3 Storage of clinical waste

- Pedal bins must be available where clinical waste and contaminated household waste are generated.
- Bins must be lined with the appropriate colour liner.
- Remove clinical waste bags when they are three-quarters full or at the end of the day, as appropriate.
- Securely tie bags as per local arrangements using tape, clips or tying in a swan-neck before removing them from the bin
- Label clinical waste bags and sharps boxes with the address of where the waste was produced. This may be using labelled tape or clips, or simply by writing the address or Post Code in permanent marker pen onto the bag prior to use.
- Hold bags by the neck and do not throw them.
- Clinical waste should be stored in a designated waste collection point or wheeled bin away from residential and food preparation areas. Ideally in a lockable fixed or wheeled external bin awaiting collection.
- Bins provided for clinical waste must be kept in a secure locked location, that is well-lit, ventilated and marked with warning signs.
- Waste must be collected by a registered carrier at regular intervals e.g. weekly
- **Waste contractors are under no obligation to remove waste if it does not adhere to the duty of care, e.g. packaged and labelled correctly.**

B 7.4 Clinical waste and cytotoxic waste from patients' homes⁵⁴

Patients and informal carers (partner/spouse, relatives or friends) also need to understand waste disposal procedures, if there is any possibility that they might have to deal with any of the types of clinical waste mentioned here.

B 7.4.1 Infectious waste (dialysis, wounds, diarrhoea etc.)

Community healthcare workers must assess waste for hazardous properties, especially "infectious." This is based on professional assessment, clinical signs and symptoms, prior knowledge of the patient. Wounds should be assessed as infectious if they have signs of infection or are being treated with antibiotics. Another examples are dialysis waste or infectious diarrhoea of patient's receiving healthcare at home. Waste products must be disposed of using orange sacks/containers and waste collection arranged.

This collection may be via the local NHS Trust or Local Authority as per local arrangements.

B 7.4.2 Non-infectious waste (dressings, incontinence pads etc)

Where the waste products of healthcare are assessed as non-infectious; i.e. non-infectious wound dressings, incontinence pads etc, the waste should be discarded as “offensive/hygiene waste” in a yellow bag with black stripe.

Small volumes of those healthcare products which may also be used by householders; i.e. plasters, pads, small dressings, stoma bags etc may go into a black bag and discarded as household waste if the householder agrees. Primary wrappers must be opaque, clear or black and must not be yellow or orange as this indicates infectious waste.

B 7.4.3 Clinical sharps

Patients who use needles at home should be provided with a sharps container. Used syringes, insulin pens and ampoules should also be discarded in a sharps container.

Sharps containers are listed in Part 1XA of the *Drug Tariff* and are available on FP10. Follow local disposal procedures, e.g. return containers to the prescribing surgery for collection prior to incineration when full to the line indicated on the container. The practice (or PCT if it manages waste for the practice) will need to apply to the Environment Agency for registration of exemption of the Waste Management Licensing Regulations 1994 (as amended). Some Local Authorities are able to collect sharps containers from householders, but may levy a charge for this service.

Community healthcare workers giving injections in the home should use a UN approved sharps container that is labelled. When carrying the container, the aperture must be temporarily closed to prevent accidental spills. When it is in a vehicle, it must be kept out of sight and not left unattended. When three-quarters full the container must be locked and disposed of as per Table 8.

Patients who need to use needles and syringes on an out-patient basis, may be provided with a sharps container by the hospital and should return the container to the hospital for disposal.

B 7.4.4 Cytotoxic waste

Cytotoxic waste arising from home care must be placed into an appropriate yellow container with purple stripe. Community healthcare workers involved in the administration of cytotoxic drugs in the home should use the waste disposal arrangements of their Trust. If patients self-administer the cytotoxic drugs the container should be returned to the hospital or GP surgery as agreed.

B 7.5 Management of clinical sharps ¹⁴⁷

Clinical sharps include needles, scalpels, stitch cutters, glass ampoules, pen injection devices, sharp instruments and broken glass. The safe handling and disposal of sharps is paramount in reducing the risk of exposure to blood-borne viruses and extreme care must always be taken when using and disposing of sharps.

- Avoid using sharps, including pen injecting devices when administering medication to patients, wherever possible (e.g. use a needle-less system such as *Vacutainer* for venepuncture or *Unistix* for finger pricking)
- Clinical sharps should be single-use only
- The re-sheathing of used needles is hazardous and must be avoided where possible. If this is unavoidable, select an automatic re-sheathing needle or use a one-handed technique.
- The user of sharps must discard them directly into a sharps container
- Sharps containers must comply with UN3291 and BS7320: 1990
- Label sharps containers when assembling them
- When carrying a sharps container, or whenever the container is left unattended, use the temporary closure to prevent spillage or tampering
- Place sharps containers of a suitable size in each location where sharps are handled, on a level surface
- Secure containers using brackets attached to the wall or a trolley. Do not place them on the floor, window sills or above shoulder height,
- Assemble containers following manufacturer's instructions
- Carry them by the handle, do not hold them close to the body
- Do not attempt to retrieve items from a sharps container
- Do not attempt to press down upon sharps to make more room
- Discard when three-quarters full or after 3 months. Lock the container using the closure mechanism
- Place damaged sharps containers inside a larger containers, lock and label prior to disposal
- If sharps are spilled from the container use a safe technique to retrieve them, e.g. a dustpan and brush, and carefully place inside the container
- Never use single-patient use devices for more than one patient
- **Never put a sharps container inside a clinical waste bag**

B 7.6 Household/domestic waste

- Pedal-operated bins are recommended, though open bins are adequate for paper towels.
- Any waste that is not covered under the clinical waste groupings is classed as household domestic waste, e.g. wastepaper, cans, bottles.
- This waste must be disposed of through the normal household waste stream i.e. black bin liners or dustbins collected by the Local Authority. Where possible, recycling or re-using options should be considered.
- Household waste and clinical waste must be kept separate at all times.
- Reducing waste can save money and help to improve the environment
- Ensure patients/clients or their informal carers are aware of the need to deal with clinical waste appropriately.

B 8.0 Single use medical devices^{3,57,58,59,60}

Packaging of medical devices will indicate whether an item is for single use or for single patient use.

Items labelled “single use only” (see symbol below) must be used only once. The manufacturer will not guarantee that any form of reprocessing, (which includes washing in soap and water) will not harm or change the safety of the device.



If the manufacturer advises that it can be used more than once, e.g. “single patient use”, the necessary information will be given on the packaging. It will include details of whether it is for re-use only on one patient, the correct method of cleaning between uses, and also, how long the item may be safely used for.

Ignoring the advice printed on the packaging and re-using an item (device) outside the guidelines given by the manufacturer has legal implications, which basically mean that if anything untoward happens as a result of re-use, any legal claim can be made against the user, and not the manufacturer.

Re-use and reprocessing of devices not intended for reuse may constitute committing an offence under The Health and Safety at Work Act 1974,³ Part One of the Consumer Protection Act 1987,⁵⁸ The General Product Safety Regulations 1994⁵⁹ or The Medical Devices Regulations 1994⁶⁰.

If the manufacturer's instructions on single use, or single patient use are ignored, the safety, performance and effectiveness of the device are compromised and you will be exposing patients/clients and staff to unnecessary risk.

Follow the instructions on the packaging and do not reuse.

B 9.0 Food Hygiene⁶¹⁻⁶⁶

B 9.1 Introduction

All foods are potentially hazardous if they are not handled correctly. Good food handling practices are essential to minimise the risk of food poisoning. This is especially important in residential care settings where food is being prepared and served to large numbers, and where consumers are at particular risk from food borne illnesses.

Managers and staff must be aware of legislation relevant to food. Hospitals and residential care settings should appoint or have access to a qualified catering manager. The main legislation is the Food Safety Act 1990⁶² and its related regulations.

The local Environmental Health Department can advise about rules and regulations. Environmental Health Officers of the local authority in enforcing these regulations are entitled to inspect catering facilities in residential care homes.

A useful book to obtain for further information is 'Industry Guide to Hygiene Practice: Catering Guide'⁶¹.

Food poisoning can cause serious illness and even death particularly in the elderly. It is important that all people involved in preparing and serving food are aware of how to reduce the risk of food poisoning.

B 9.2 Training

People who handle or prepare food need an appropriate level of training in the principles of food handling depending upon whether they serve food, cook food or manage a kitchen. Training requirements are summarised in **Table 9**. Where clients cook food for themselves, staff must ensure that the individual is supported in applying the principles of food hygiene until independence is achieved.

Courses may be provided by local colleges and NHS Trusts, as well as the:

- Royal Institute of Public Health and Hygiene (RIPHH),
- Royal Society of Health (RSH),
- Royal Environmental Health Institute of Scotland (REHIS),
- Society of Food Hygiene Technology (SOFHT)
- Chartered Institute of Environmental Health (CIEH).

Details of what may be included in Stage 1 and Stage 2 training are in **Table 10**.

Level 1 formal training. An example of this is undergoing a course such as a Basic Food Hygiene Course. This is typically a 6-hour course, which aims to develop a level of understanding of the basic principles of food hygiene.

Level 2 and 3 formal training. These courses deal with food hygiene in more detail and will cover management issues as well. Typically level 2 involves 12 to 24 hours of training and level 3 involves 24 to 40 hours.

Table 9 National guidelines for food handling training

	Stage 1	Stage 2	Stage 3	
	"The essentials of food hygiene"	Hygiene awareness instruction	Formal training Level 1	Formal training Level 2 and/or 3
Ideally to be completed within this time scale	<i>Before starting work for the first time</i>	<i>Within 4 weeks, or 8 weeks if part-time</i>	<i>Within 3 months</i>	<i>According to responsibilities</i>
Food handlers who handle low risk or wrapped food only	✓	✓		
Food handlers who prepare open, "high risk" foods	✓	✓	✓	
Food handlers who also have a supervisory role	✓	✓	✓	✓

Table 10 Informal (work-based) training

<p>Stage 1 Essentials of Food Hygiene</p> <ul style="list-style-type: none"> • Keep yourself clean and wear clean clothing • Always wash your hands thoroughly: before handling food, after using the toilet, handling raw foods or waste, before starting work, after every break, after blowing your nose • Tell your supervisor, before commencing work, of any skin, nose, throat, stomach or bowel trouble or infected wound. You are breaking the law if you do not. • Ensure cuts and sores are covered with a waterproof, high visibility dressing such as a blue plaster • Avoid unnecessary handling of food • Do not smoke, eat or drink in a food room, and never cough or sneeze over food • If you see something wrong - tell your supervisor • Do not prepare food too far in advance of service • Keep perishable food either refrigerated or piping hot • Keep the preparation of raw and cooked food strictly separate • When reheating food ensure it is piping hot • Clean as you go. Keep all equipment and surfaces clean • Follow any food safety instructions either on food packaging or from your supervisor
<p>Stage 2 Hygiene Awareness Training (appropriate to the job)</p> <ul style="list-style-type: none"> • The business's policy - priority given to food hygiene • "Germs" – potential to cause illness • Personal health and hygiene – need for high standards, reporting illness, rules on smoking • Cross contamination - causes, prevention • Food storage – protection, temperature control • Waste disposal, cleaning and disinfection – materials, methods and storage • "Foreign body" contamination • Awareness of pests

B 9.3 Hazard analysis

The Food Safety (General Food Hygiene) Regulations 1995⁶⁴ make a specific requirement of organisations to undertake a hazard analysis. This is a systematic examination of how food is prepared and how food safety hazards are controlled.

An Environmental Health Officer will periodically inspect kitchens in residential care settings. They will expect to see evidence of hazard analysis and any records that support it. They will also ask managers and the staff questions about the hazard analysis and how you implement it.

The main stages of undertaking a hazard analysis are as follows:

- Identify all the things in your food operation which might go wrong (hazards) and result in food poisoning or cause injury, (e.g. the presence of bacteria in raw meat, or foreign material such as glass or plastic in food);
- Decide the points in the food operation at which things can go wrong (e.g. places where cross-contamination between raw foods and ready-to-eat products may occur);
- Decide which of these points are critical to making sure food is safe, and therefore must be properly controlled (e.g. the cooking of raw meat or the use of sanitised equipment);
- Put in place procedures to stop things going wrong (controls), and make sure that you/your staff always carry them out (e.g. cooking meat for a set time and temperature which is known to kill all of the bacteria right through to the middle of the joint or ensuring that equipment has been cleaned and sanitized at proper and regular intervals);
- From time to time, you must examine your food business to see if anything has changed which might need your control measures to change (e.g. new menu dishes may have new hazards and need new controls, or new equipment may require different thermostat settings).

It is helpful to involve key staff in developing a hazard analysis and all staff need to know the part that they have to play in making it work.

B 9.4 Record keeping

Although in law you do not have to provide documents or record your policies, procedures and monitoring records, it would be difficult to show how you are meeting this requirement without records or documents. It would also be difficult, if charged with a Food Safety Act offence, to use the defence of Due Diligence to show that you have done everything possible to avoid committing an offence. It is important to provide details of procedures and retain monitoring records particularly at critical control points.

The recommended documents/ records that should be retained include:

- Hazard analysis summary
- Training records
- Food temperatures records (e.g. cooking, cold storage, hot holding temperatures)
- Refrigeration temperatures
- Cleaning schedules
- Delivery monitoring records
- Stock rotation records
- Pest control records
- Equipment maintenance schedule

B 9.5 Infectious diseases in staff^{9,10}

People are a common source of food poisoning organisms. Staff who are suffering from sickness, diarrhoea or heavy colds should not be allowed to work with food. Staff suffering from discharges from the ears, eyes, nose or those who have septic skin conditions should not be allowed to work with food either. **See A 1.4.**

Staff should notify their manager before they start their shift if they are suffering from such as condition. The manager must make sure the appropriate action is taken, such as excluding someone from work altogether or allocating them other non-food duties. They must be symptom-free for 48 hours before returning to work. If they are suffering from a known gastro-intestinal infection **see C 31.0** for exclusion periods.

B 9.6 Hand hygiene²²

Refer to **B 1.0** for more details. Hand washing should be carried out on entering a kitchen and frequently throughout the working day. It should always happen after handling foods or articles that are a source of food poisoning bacteria. Such things include raw meat, raw vegetables, rubbish bins, etc. Hands should also be washed after going to the toilet, taking a break, coughing or sneezing in to hands etc.

Good hand washing requires running warm water, soap (preferably liquid antibacterial) and a nailbrush if hands are particularly soiled. Nailbrushes should be single-use. Hand washing should take about 30 seconds and staff should pay attention to all parts of the hands, fingers and wrists. Hands should be dried using clean drying materials. The best materials are disposal paper towels.

Hand sanitisers can also be used to supplement hand washing. These contain alcohol and dry quickly on the hands. They can be used where hands are only lightly soiled.

B 9.7 Protective clothing

In large kitchens (e.g. hospitals and care homes) anybody entering the kitchen should wear suitable over-clothing, which may include a clean white coat and hat.

In smaller kitchens or the home setting, a clean plastic apron with sleeves rolled up under short-sleeved clothes is adequate. Staff who leave the kitchen to undertake other duties should remove their protective clothing before leaving the kitchen.

No jewellery, perfume or make-up should be worn whilst working with food. A plain wedding ring being the only exception.

B 9.8 High risk food⁶³⁻⁶⁶

B 9.8.1 Raw eggs

Advice from the Department of Health on raw or lightly cooked eggs is that: -

"Everyone should avoid eating raw eggs or uncooked dishes made from them, and vulnerable groups such as the elderly, the sick, babies, toddlers and pregnant women, should make sure any eggs they eat are thoroughly cooked until the white and yolk are solid. However, for healthy people there

is very little risk from eating eggs which are cooked, whether boiled, fried, scrambled or poached."

- Once purchased, eggs should be stored in a refrigerator, below 8°C.
- Caterers should continue to increase their use of pasteurised egg, particularly for dishes that are not subject to further cooking prior to consumption.
- Food hygiene training programmes should pay particular attention to the correct handling of eggs, and food containing eggs, and the avoidance of cross contamination.

The Public Health Laboratory Service⁶⁵ and Food Standards Agency⁶⁶ have advised that:

- Eggs are kept away from other foods, while in shells or when cracked
- Don't splash egg onto other foods, surfaces or dishes
- Wash and dry hands after touching, or working with, eggs
- Clean surfaces, dishes, utensils etc thoroughly using warm soapy water after contact with eggs

B 9.8.2 Pâté, soft-ripened cheeses and cook-chill foods

Listeriosis, a disease which has been associated with the consumption of these foods, may be mild or more severe, causing septicaemia, meningitis, encephalitis or, if a pregnant woman becomes infected, can harm the developing baby. Elderly people, or those who have impaired immunity due to disease or treatment, are particularly vulnerable to infection.

Particular care needs to be taken in developing diets for vulnerable people; they should avoid soft-ripened cheeses and should re-heat cook-chill meals and ready-to-eat chicken until they are piping hot. During the late 1980s there was an outbreak of Listeriosis associated with pate, but the difficulties with production of this product now seem to have been satisfactorily addressed.

B 9.8.3 Unpasteurised milk

Only pasteurised milk and milk-based products, should be offered for consumption by clients. Care should be taken with the delivery site to ensure that milk containers (bottles or cartons) are protected and that birds or rodents cannot break the seal and allow contamination to occur. If pests have perforated the lid, the entire contents of the bottle must be discarded because milk is such a good material for germs to multiply in.

B 9.8.4 Under-cooked or raw foods

Research has shown that meat, which is undercooked and still pink after cooking, may cause infection. It is therefore important that all meat and poultry is thoroughly cooked until the juices run clear before being served. Piping hot meat is safest; this can only be checked using a probe thermometer, with a minimum 75⁰ C being reached during cooking.

Cooked food kept at room temperature and then re-heated is often implicated in outbreaks of food-borne infection. Such practice is unsafe. Cold cooked meats that are sliced some time prior to consumption may also be associated

with gastro-intestinal infections if poorly handled and/or left at room temperature.

Shellfish, especially if eaten raw or undercooked, is recognised as being a high-risk food. If served to vulnerable clients, particular care should be taken to ensure proper preparation, cooking and handling of fresh, tinned and frozen shellfish.

Salads, fruits and uncooked vegetables are a good source of vitamins, minerals and fibre but they need careful preparation to ensure that the risk of contamination is reduced. Because of possible contamination with pesticides etc, where possible, fruit and vegetables should have the skin removed providing this does not mean excessive manual handling. Leafy vegetables such as lettuce, and fruit, should be washed thoroughly in running water. All fruit and vegetables should be purchased from a reputable supplier.

B 9.9 Gifts of food

In residential care settings, visitors should be made aware of the dangers posed by the high-risk foods discussed here, and they should inform the person in charge of any gifts of food brought in. Gifts of food to clients should be appropriately covered, then labelled with the name of the client and the date of the gift. Such gifts should be appropriately stored, e.g. refrigerated below 5^o C if high risk, and consumed within 24 hours if possible.

B 9.10 Storage of food

Food must be stored at the correct temperature and in an appropriate place. Most food poisoning germs will grow at temperatures between 5^oC and 65^oC, and poor temperature control is an important cause of outbreaks of food poisoning. Storage needs to take account of this.

- The temperature of foods must be recorded using an accurate probe thermometer, which is disinfected before and after each use e.g. using probe disinfecting wipes or alcohol-impregnated wipes.
- For all foods there should be careful attention to stock rotation so that older stocks are used before new stocks. Food should be stored in the appropriate place as soon as possible after delivery or preparation.
- Dried food such as cereal must be stored in pest proof containers above floor level.
- Foods, which need to be kept cool, must be stored in a refrigerator. These foods should be kept at a temperature of 5^oC or below. The refrigerator must have a thermometer and the temperature should be checked daily and recorded. If the refrigerator temperature is above 5^oC this should be reported to the manager so that maintenance or repairs can be carried out promptly. Care has to be taken to avoid contamination of cooked foods with raw foods, especially raw meat and poultry. These should be stored separately.
- All food must be covered and labelled with the date before it is placed in the refrigerator. Drugs or specimens must not be stored in the food refrigerator.
- Frozen foods should be clearly labelled with the date before placing in the freezer. This is essential for efficient stock rotation.

- Hot foods must be kept hot at a temperature of 63^oC or higher.
- Sandwiches should be prepared as close to the serving time as possible (ideally one hour before they are served). They should be stored covered in the refrigerator below 5^o C before serving.

B 9.11 Food preparation

It is best practice, even in the home setting, to have separate areas and equipment for the preparation of cooked and uncooked meat and poultry, vegetables and salad. In the domestic setting be sure to explain what you are doing and why to the patient/client or informal carer. They may feel your precautions are unnecessary.

In hospitals and residential settings, equipment must be labelled or colour coded so that cooked food does not become accidentally contaminated with raw food. Germs on raw food (especially meat and poultry) may cause food poisoning if they get onto food that is going to be eaten without further cooking.

Some raw foods commonly contain food poisoning germs and they must be cooked properly before serving. Meat and poultry must be thoroughly defrosted before cooking to ensure that they reach the correct temperature throughout. Defrosting should take place in a fridge rather than at room temperature.

Raw shell eggs may contain salmonella, and they should not be used in dishes where they are not cooked, such as homemade mayonnaise and cheesecakes. Pasteurised egg should be used in these dishes, or alternatively use recipes, which do not contain uncooked egg. Soft boiling or poaching may not be adequate to kill all salmonella bacteria. The sick and elderly are particularly at risk from salmonella.

Once prepared, foods should be kept at the correct temperature. Items that require refrigeration should be placed in the refrigerator as soon as possible after preparation. Hot foods should not be left standing at room temperature. If they are not to be served immediately they should be stored in an oven or hot plate. Cooked items, which are going to be stored cold (e.g. some joints of meat) should be cooled as quickly as possible and then stored in a refrigerator. Slicing food and spreading it over a large surface area can hasten cooling.

B 9.12 General hygiene

Deposits of food encourage the growth of micro-organisms and will attract pests. Crockery, cutlery and other kitchen equipment should be cleaned using a dishwasher where possible, **see B 5.0** and **Table 6**. Cracked or chipped crockery should be discarded. Food waste should be disposed of as soon as possible

Kitchen cleaning must be carried out regularly to prevent a build-up of food deposits behind, beneath and inside kitchen equipment. Spills should be cleared up promptly. Thorough cleaning with a general purpose detergent and drying with a clean disposable cloth will be adequate for most surfaces. For food preparation surfaces a product that is a combined cleaner/disinfectant is recommended.

B 10.0 Pets⁶⁷⁻⁷⁰

Clients can enjoy contact with pets and have health benefits from this. However there may be infection risks from pets especially if clients are particularly vulnerable due to reduced immunity, age, illness or therapy. Sensible precautions can reduce the risk to an acceptable level even in the home setting. However, in a client's home you may be able to make only comparatively small changes, or concentrate on such hygiene measures as washing your hands and any work surfaces thoroughly.

- In communal settings, a designated person should be responsible for looking after the pet. There should be written cleaning schedules for birdcages and aquariums.
- Wash hands after contact with pets.
- Reptiles such as lizards, iguanas etc are very likely to be carriers of exotic strains of salmonella that can be a health risk to young children. Children under five should not have contact with such reptiles or the environment in which the reptiles live or exercise.
- After animal scratches or bites, clean the area thoroughly by washing with soap under a running tap. Record the injury in the accident book. Seek medical advice for bites, which break the skin and for any bites or scratches which do not heal quickly or which appear infected.
- If pets appear unwell seek veterinary advice. Ensure pets receive regular veterinary care, vaccinations etc, where appropriate.
- Pet feeding areas should be kept clean. Pets should have their own feeding dishes, which should be washed separately from dishes and utensils used by people.
- Keep pets out of the kitchen and away from all surfaces where food is prepared or consumed.
- Keep opened pet food containers away from food for human consumption
- Food not consumed within 20 minutes should be removed or covered to prevent attracting pests
- Bedding should also be cleaned regularly and insecticides used as necessary to control fleas; advice should be sought from the vet if problems occur.

B 10.1 Litter box care

- Pregnant women should avoid cleaning out the litter box
- Always wear gloves and a protective apron when cleaning the litter box.
- Always wash hands after cleaning the litter box.
- Fit a disposable liner to the box for easy cleaning.
- Use a leak-proof litter box
- Change the litter daily if soiled.

- Seal litter in a plastic bag and dispose of with household waste
- The litter box should not be sited near food preparation, storage or eating areas.
- Do not use the kitchen sink or hand washbasin for cleaning litter boxes. Wash well using water and detergent, then fill with boiling water and leave to stand for at least 5 minutes to kill toxoplasma eggs and other micro-organisms. Finally leave to dry or dry with a disposable cloth or paper towel.
- Certain animals are more likely to carry diseases that may spread to humans:
 - Stray animals
 - Sick animals/birds
 - Wild animals/birds
 - Animals with diarrhoea
 - Exotic animals
 - Cage birds
 - Tropical fish
 - Domestic pets who hunt and eat rodents or birds
 - Reptiles (iguanas, lizards etc) carry exotic salmonella species that may be harmful to children under five or other vulnerable adults

Good general hygiene and hand washing are essential for risk reduction. By ensuring that all the above advice is followed, the physical and psychological benefits of having pets should improve the quality of life of the clients.

B 11.0 Visits to farms, zoos and other animal centres by children⁷¹

A number of infections can be acquired during visits to farms and similar centres. These infections can include *Escherichia coli* 0157, campylobacter, salmonella, cryptosporidiosis etc. They are usually acquired by contact with animals, their excreta or contaminated environment. Children under the age of five years, or those who cannot manage their own hygiene needs are particularly at risk.

A range of simple precautions can help to prevent infection. These include:

- Check the farm is well managed and that the grounds and public areas are as clean as possible. Note that manure, slurry and sick animals pose a particular risk of infection and animals must be prohibited from any picnic area
- Check that the farm has washing facilities that are adequate and accessible for the age and size of the children, with running water, liquid soap and disposable paper towels or hot air dryers. Any drinking water taps should be provided away from animals and toilets
- Do not allow children to eat or drink anything, including crisps, sweets, chewing gum etc, while touring the farm. They should also avoid putting their fingers, pens or crayons in their mouths because of the risk of infection
- If children are in contact with, or help to feed, farm animals they must be warned not to kiss animals, put their faces against the animal or taste the animal feed
- Everyone must wash and dry their hands after contact with animals and also before eating or drinking
- Meal-breaks or snacks should be taken well away from areas where animals are kept, and pupils warned not to eat anything which may have fallen to the ground
- Any fruit or vegetables produced on the farm should be thoroughly washed in drinking water before consumption
- Children should not consume unpasteurised produce e.g. cheese or milk
- Hands must be washed before departure
- Ensure that footwear is as free from faecal matter as possible
- Pregnant women should remember that there is a particular risk of transmission of infection during the lambing season.

Adapted from Dept of Health (1999)⁷¹ Guidance on infection control in schools and nurseries (poster).

Also visit the HSE website: www.hse.gov.uk/pubns/ais23.pdf

B 12.0 Deaths of clients in the community

If the death occurred from a serious infectious condition that may have public health implications, the clinician should inform the Health Protection Unit at the earliest opportunity. Even anticipated deaths may give rise to enquiries, and it is easier for the Health Protection Team to deal with these if they have already received information.

B 12.1 Handling bodies^{11,72}

It is important to consider the cultural elements concerning death and preparation of bodies. Refer to any local policies or discuss this with the client, family or informal carers even before death of possible. Inappropriate handling may be greatly offensive.

Most bodies pose little risk of infection but sensible precautions will reduce the risks even further. Disposable gloves and apron should be worn when washing and preparing the body.

Clean dressings should be applied to any wounds or leakage sites and secured with tape or a loose bandage to prevent any further leakage from the site. The use of pins should be avoided since they present a potential hazard to others.

It is important to contact the undertaker as soon as the death has been certified, because the body needs to be moved to a cool environment as soon as possible. Decomposition occurs rapidly, particularly in hot weather or an overheated room, and may create a bacterial hazard and be unpleasant for those handling the body.

If it is anticipated that there may be a delay in certifying the death for some hours, it could be helpful to forewarn the undertaker so that plans can be made to collect the body later. Cool the room where the body lies, by turning off radiators and opening a window.

Dressings, drainage tubes etc should be removed before the body is transferred to the undertaker **unless** a Coroner's post-mortem is likely. Inform the undertaker if the body has a pacemaker fitted and if there is a known, or suspected, infection hazard.

In the event of a Coroner's post-mortem, any tubes must be plugged and covered with a dressing pad and secured to the body with tape or bandage.

B 12.2 Last Offices for infected people^{6,11,72,73}

Following the death of an individual with an infectious disease, the precautions carried out prior to death must be continued after death since the body may remain infectious. However, any cultural traditions must be respected, having been identified in the assessment on arrival.

- When laying out a body, wear disposable gloves and apron
- If the infectious disease presents a serious infection hazard to others (e.g. the diseases listed below) the body should be placed in a shroud (or own clothes) and then into a plastic body bag, which should be carefully secured.
 - Typhoid fever
 - Paratyphoid fever
 - Acquired Immune Deficiency Syndrome (AIDS)
 - Tuberculosis
 - Transmissible spongiform encephalopathies e.g. Creutzfeldt Jakob Disease

The identity labels and Notification of Death labels should be attached so that they can be read through the body bag. A “danger of infection” label and a Notification of Death label should be attached discreetly to the outside of the bag. No label should state the diagnosis, which is confidential information. The undertaker must be informed of the danger of infection, but without disclosure of the diagnosis. Once the body is in the body bag, those handling the bag no longer require the protective clothing.

Relatives and friends who wish to view the body should do so as soon as possible after death. A member of staff wearing gloves and an apron can open the bag.

It must be understood that there are provisions under the Public Health (Control of Disease) Act 1984⁷³ to prevent contact with the body of a person dying with a notifiable infectious disease. Relatives should be informed of any risk of infection, though in most cases the risk is small and no greater than when the deceased was alive.

The embalming of bodies infected with hepatitis B and C, HIV or CJD, is not recommended.

B 13.0 Sharps and inoculation injuries and bites^{8,11,12, 13,14, 153}**NB Follow your organisation's inoculation injury policy.****B 13.1 Risk assessment****B 13.1.1 Sharps include:**

Needles, scalpel blades, stitch cutters, cannulae etc used in clinical care.

These may become contaminated with blood or high-risk body fluids during use and there is a risk of accidental injury if not handled correctly.

B 13.1.2 High-risk inoculation injuries include:

- Inoculation with an instrument such as a needle or scalpel blade, which has been contaminated with blood, or one of the "high-risk" body fluids listed below.
- Contamination of mucous membranes (eye or mouth) or breaks in the skin with blood, or another "high-risk" body fluid listed below.
- A human bite, if the skin is broken

B 13.1.3 High-risk body fluids include:

Blood and blood products	Semen and vaginal secretions
Peritoneal fluid	Pericardial fluid
Synovial fluid	Pleural fluid
Amniotic fluid	Breast milk
Unfixed (and donated) organs and tissues	

In relation to blood-borne infections, urine, faeces, vomit, sweat, tears, skin, sputum are not considered to be high risk, unless they are bloodstained.

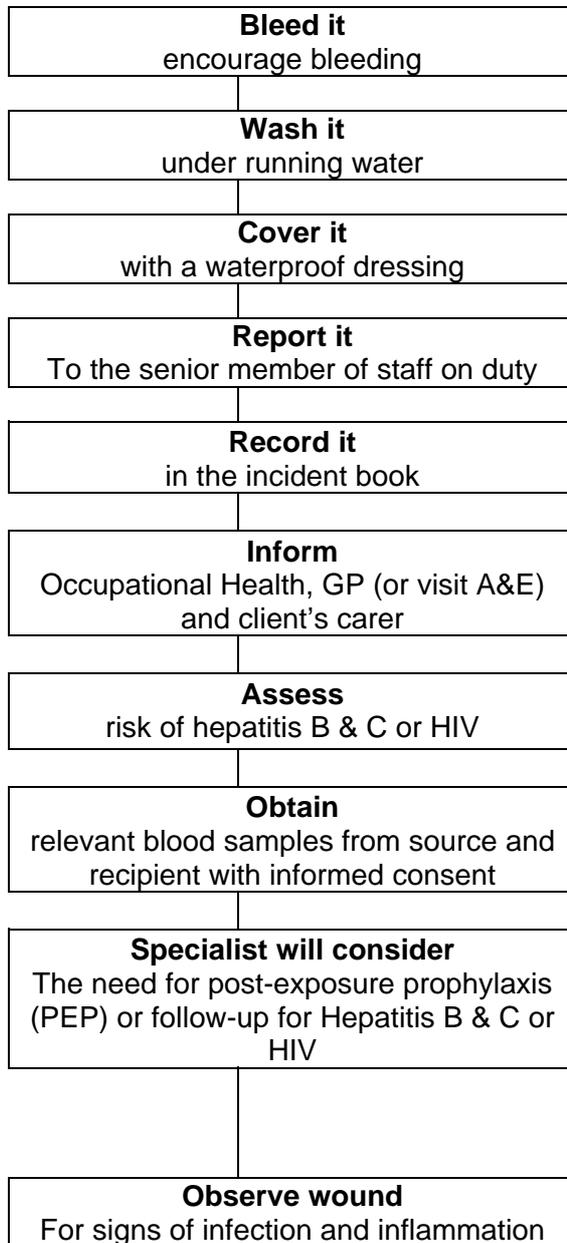
The risk of transmission of a blood-borne virus is associated with **inoculation** of an **infectious dose** of **infected body fluid** into a **susceptible recipient**. A simple injury, which does not break the skin, or does not involve the inoculation of body fluid, is unlikely to lead to the transmission of infection. The infecting dose may be as low as a visible drop of blood. However other individual factors may affect the risk of transmission.

Human bites very often become infected due to the large amount of bacteria present in saliva, therefore check the wound daily for any signs of bacterial infection and inform GP if present.

B 13.2 Prevention of sharps / bites and inoculation injuries^{13,135,147}

Action	Rationale
Always use an approved British Standard sharps container	To prevent sharps being discarded inappropriately
Ensure it is correctly assembled and labelled with the name of home/centre etc.	Prevents the container becoming disassembled and spillage of contents. Labelling allows identification in the event of spillage.
Take it with you when dealing with sharps e.g. when giving an injection	To enable sharps to be disposed of directly after use.
Place sharps directly into sharps box	To reduce the chances of injuries whilst carrying sharps.
Never re-sheath needles If re-sheathing is unavoidable: Use an automatic re-sheathing needle or A single handed re-sheathing technique or A re-sheathing device	Reduces the possibility of injury.
Do not fill the container beyond line indicated before sealing and disposing of clinical waste	Reduces the possibility of the container bursting if dropped or of sharps protruding and therefore the possibility of injury
Cover all cuts and abrasions	Avoids contact with blood/body fluids
Wear gloves and/or eye protection when handling blood or if there is a risk of splash into the face	Reduces the possibility of contact with blood
Avoid situations where biting may occur	Avoids injury
If biting is likely wear long sleeves and gloves for contact or even arm guards and gauntlets in a high risk situation	Makes penetration more difficult
Consider using an insulin syringe and needle rather than a pen system if the client is unable to inject him/herself.	Avoids re-sheathing the device

B 13.3 Action to be taken following sharps injury, inoculation injury or a bite



- Seek advice from A&E or on-call person for PEP at the local District General Hospital
- Can source be identified?
- Is source likely to be infected with hepatitis B, C or HIV?
- Can a sample be obtained?
- Was it a high-risk injury?
- Was a high-risk body fluid inoculated?
- What is the immune status of the exposed person?
- How much time has elapsed between injury and follow-up?
- Would side effects of Prophylaxis outweigh the possible benefit

The injured person should visit A&E or contact Occupational Health or their GP as soon as possible. Blood may need to be taken from the injured party and the source, if known. Specimens should be sent to the laboratory with minimum delay.

B 13.4 Post-exposure Prophylaxis for healthcare and public sector workers^{8,11,12,14, 153}**B 13.4.1 HIV**

The Department of Health has issued guidelines on HIV Post-exposure Prophylaxis (PEP) for health care workers. Although HIV PEP is recommended for health care workers, the risk of transmission is very small and requires the inoculation of a significant volume of infected body fluid. The side effects of the treatment may also outweigh any potential benefit.

Following incidents where the source of the injury is thought to be high risk for HIV infection, the injured party should go immediately to Accident and Emergency to be assessed. The decision to administer PEP will be taken by the consultant on call for PEP e.g. the medical microbiologist, haematologist, virologist or occupational health physician at the local District General Hospital.

If recommended, a course of PEP must be started as soon as possible after the incident. Ideally this would be within one hour if there were a high risk of exposure to HIV. However, PEP may be commenced up to 2 weeks after the injury if circumstances change, for example if the source of the injury is subsequently found to be HIV positive. The PEP specialist should advise pregnant women, who may have been exposed to HIV, regarding the risks and benefits of HIV PEP.

B 13.4.2 Hepatitis B

If the source of the injury is a known, or suspected to be, hepatitis B positive, Occupational Health or the GP should consider giving hepatitis B vaccine and/or immunoglobulin to the recipient of the injury. This should be administered ideally within 48 hours of the injury, though it can be given up to 7 days after the incident if necessary.

B 13.4.3 Hepatitis C

Where possible an attempt should be made to assess the HCV status of the source. An initial blood sample should be taken from the injured person and sent to the laboratory to be stored. If the source is found to be positive, the injured party should also be investigated for subsequent sero-conversion and appropriate referral made as per **Part F, Appendix One**. There is currently no vaccine available for hepatitis C.

Following an incident a review of the event should be undertaken in order to identify if the injury could be avoided in future.

B 13.5 Post exposure prophylaxis for the general public^{8,12}

Members of the public may be accidentally exposed to blood via inoculation or contamination of the eye, mouth or fresh cuts, or as a result of rape, condom breakage or sharing drug-injecting equipment. As a first aid measure contaminated skin should be washed with soap and water, or mucous membrane flushed with fresh water or saline and medical advice sought. The medical practitioner should carry out an individual risk assessment of the circumstances of exposure.

B 13.5.1 HIV

The risk of transmission of HIV as a result of incidents in the community is small. It is also unlikely that Post Exposure Prophylaxis for HIV could be administered within 1 hour of exposure. Therefore for a number of reasons PEP may not be appropriate for members of the general public. If the doctor considers the individual to be at high risk of HIV infection they should seek urgent advice from a physician experienced in the treatment of HIV and the use of PEP.

B 13.5.2 Hepatitis B

Blood-exposures if possible an attempt should be made to assess the HBV status of the source. Following a risk assessment, it may be decided to immunise the injured party using an accelerated course of hepatitis B vaccine, if they are not already immunised (see **Part F, Appendix One**).

Sexual partners of someone who has developed acute hepatitis B infection should be offered post exposure prophylaxis as per **Part F, Appendix One**.

Babies born to mothers who are hepatitis B carriers, or who had acute hepatitis B infection during pregnancy:

- **Mother HBsAg positive** Baby should receive an accelerated course of hepatitis B vaccine
- **Mother HBeAg positive, or where e-marker is undetermined.** Baby should receive hepatitis B immuno-globulin and start a course of vaccine, given at a contra-lateral site at the same time.

B 13.5.3 Hepatitis C

If possible an attempt should be made to assess the HCV status of the source. If positive, the injured party should also be investigated for subsequent sero-conversion and appropriate referral made as per **Part F Appendix One**. There is currently no vaccine available for hepatitis C.