

ESSEX HEALTH PROTECTION UNIT

Part of the



CHIROPODY & PODIATRY INFECTION CONTROL GUIDELINES



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ESSEX HEALTH PROTECTION UNIT CHIROPODY & PODIATRY INFECTION CONTROL GUIDELINES

SECTION A – INTRODUCTION AND CONTACTS

1. Introduction

These guidelines have been written for healthcare workers in Chiropody and Podiatry practice in Essex, whether working for the National Health Service or in private practice.

Infection control is an important part of an effective risk management programme to improve the quality of patient care and the occupational health of staff.

2. Scope

These guidelines give information on infection control specific to care given in the Chiropody and Podiatric Practice.

It is acknowledged that some users of these guidelines work in premises over which they have little or no control (e.g. client's homes). Therefore in some instances users will have to use their own judgement in the interpretation of the guidelines. Further advice is available from the Essex Health Protection Unit (EHPU).

3. Responsibility

The purpose of this manual is to encourage individual responsibility by **every** healthcare practitioner. **All** should participate in the prevention and control of infection in clinical practice.

All Healthcare workers have a duty of care to their patients to ensure that infection control procedures are followed. All State Registered Chiropodists must uphold Minimum Standards of Clinical Practice 9 - Professional Code of Conduct (May 2001).

The Management of a practice is responsible for ensuring that there are effective arrangements in place for the control of infections.

4. Contacts

For chiropodists and podiatrists working within the National Health Service (NHS) Infection Control advice should be sought from the Infection Control Nurse of the Primary Care Organisation (PCO) within the area the chiropody or podiatry practice locality.

A list of contact telephone numbers for PCOs in Essex follows:

PCO	Contact Number
Mid Essex PCT	01245 398770
North East Essex PCT	01206 288500
South East Essex PCT	01702 224600
South West Essex PCT	01268 705000
West Essex PCT	01992 902010

For Practitioners working in non-NHS areas within Essex, Communicable Disease and Infection Control advice can be obtained from the Essex Health Protection Unit, 8 Collingwood Road, Witham, Essex CM8 2TT.

The main office telephone number is: 0845 1550069. The Consultants in Communicable Disease Control (CCDCs) and Communicable Disease Control Nurses are contactable via this number.

Advice is also available on the Essex Health Protection Unit website:
www.hpa.org.uk/essex.

Users are encouraged to ensure they have access to this site as it has advice and information on a wide range of local communicable disease issues, and during incidents will be updated at least daily with the current state of affairs.

Out of working hours – for **URGENT** communicable disease enquiries:

Contact 01245 444417, and ask them to page the on-call Public Health Person.

**ESSEX HEALTH PROTECTION UNIT
CHIROPODY & PODIATRY
INFECTION CONTROL GUIDELINES**

SECTION B – INFECTION, ITS CAUSES AND SPREAD

1. The Causes of Infection

Micro-organisms that cause infections are known as pathogens. They may be classified as follows:

Bacteria are minute organisms about one-thousandth to five-thousandth of a millimetre in diameter. They are susceptible to a greater or lesser extent to antibiotics.

Viruses are much smaller than bacteria and although they may survive outside the body for a time they can only grow inside cells of the body. Viruses are not susceptible to antibiotics, but there are a few anti-viral drugs available which are active against a limited number of viruses.

Pathogenic Fungi can be either moulds or yeasts. For example, a mould which causes infections in humans is *Trichophyton rubrum* which is one cause of ringworm and which can also infect nails. A common yeast infection is thrush caused by *Candida albicans*.

Protozoa are microscopic organisms, but larger than bacteria. Free-living and non-pathogenic protozoa include amoebae and paramecium. Examples of medical importance include *Giardia lamblia* which causes an enteritis (which can cause symptoms of diarrhoea).

Worms are not always microscopic in size but pathogenic worms do cause infection and some can spread from person to person. Examples include threadworm and tapeworm.

Prions are infectious protein particles. Examples include the prion causing (New) Variant Creutzfeldt-Jakob Disease.

2. The Spread of Infection

One feature that distinguishes infection from all other disease is that it can be spread, i.e. one person can 'catch' it from another or via a vector (e.g. crawling or flying insect).

It is convenient to classify the modes of spread of infection as follows:

Direct Contact. Direct spread of infection occurs when one person infects the next by direct person-to-person contact (e.g. chickenpox, tuberculosis, sexually transmitted infections etc.).

Indirect. Indirect spread of infection is said to occur when an intermediate carrier is involved in the spread of pathogens e.g. fomite or vector.

A **fomite** is defined as an object, which becomes contaminated with infected organisms and which subsequently transmits those organisms to another person. Examples of potential fomites are instruments, impression trays and suction tips or practically any inanimate article.

Crawling and flying insects are obvious examples of **vectors** and need to be controlled. Insect bites may cause infections such as malaria in areas where malaria-carrying mosquitoes live.

Hands. The hands of health workers are probably the most important vehicles of cross-infection. The hands of patients can also carry microbes to other body sites, equipment and staff.

Inhalation. Inhalation spread occurs when pathogens exhaled or discharged into the atmosphere by an infected person are inhaled by and infect another person. The common cold and influenza are often cited as examples, but it is likely that hands and fomites (inanimate objects) are also important in the spread of respiratory viruses.

Ingestion. Infection can occur when organisms capable of infecting the gastrointestinal tract are ingested. When these organisms are excreted faecally by an infected person, faecal-oral spread is said to occur. Organisms may be carried on fomites, hands or in food and drink e.g. Hepatitis A, *salmonella*, *campylobacter*.

Inoculation. Inoculation infection can occur following a "sharps" injury when blood contaminated with, for example, Hepatitis B virus, is directly inoculated into the blood stream of the victim, thereby causing an infection. Bites from humans can also spread infection by the inoculation mode.

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SECTION C – STANDARD PRINCIPLES OF INFECTION CONTROL

1. Standard Principles of Infection Control

It is not always possible to identify people who may spread infection to others, therefore precautions to prevent the spread of infection must be followed at all times. These routine procedures are called **Standard Principles of Infection Control (Universal Precautions)**.

Standard Principles of Infection Control include:

- Hand Hygiene and Skin Care
- Personal Protective Clothing
- Safe Handling of Sharps
- Spillage Management

All blood and body fluids are potentially infectious and precautions are necessary to prevent exposure to them. A disposable apron and latex or vinyl gloves should always be worn when dealing with excreta, blood and body fluids.

Everyone involved in providing care in chiropody and podiatry practice should know and apply the standard principles of hand decontamination, the use of protective clothing, the safe disposal of sharps and body fluid spillages. Each member of staff is accountable for his/her actions and must follow safe practices.

2. Hand Hygiene and Skin Care

Handwashing is recognised as the single most effective method of controlling infection.

Hands must be washed:

- Before and after each work session or work break. Remove jewellery (rings)
- Before and after physical contact with each client
- After handling contaminated items such as dressings
- Before putting on, and after removing, protective clothing, including gloves
- After using the toilet, blowing your nose or covering a sneeze
- Whenever hands become visibly soiled

- Before preparing or serving food
- Before eating, drinking or handling food and before and after smoking.

How to Wash Your Hands

Hands that are visibly soiled, or potentially grossly contaminated with dirt or organic material, must be washed with liquid soap and water. Bars of soap must not be used.

Before starting a clinical session a Chiropodist or podiatrist should decontaminate his or her hands using the surgical scrub method followed by drying hands with non-sterile towels. Sterile towels for drying are required for hand decontamination prior to invasive surgical procedures. Hands must be washed prior to donning and after removing gloves.

	Method	Solution	Task
1	Social (15-30 seconds)	Liquid soap	For all routine tasks
2	Hygienic hand disinfection (15-30 secs)	Antiseptics, e.g. Chlorhexidine, povidone-iodine or alcohol hand-rub after social clean	For most procedures
3	Surgical scrub (3-5mins)	Antiseptics, e.g. Chlorhexidine, povidone-iodine Dry on sterile towels	Prior to invasive surgical procedures and other invasive procedures

An effective handwashing technique involves three stages:

1. Preparation

Before washing hands, all wrist and ideally hand jewellery should be removed. Cuts and abrasions must be covered with waterproof dressings. Fingernails should be kept short, clear and free from nail polish. Hands should be wet under tepid running water before applying liquid soap or an antimicrobial preparation.

2. Washing and Rinsing

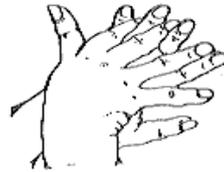
Wet the hands under running water. Apply the handwash solution ensuring that it comes into contact with all of the surfaces of the hand. The hands must be rubbed together vigorously for a minimum of 10-15 seconds, paying particular attention to the tips of the fingers, the thumbs and the areas between the fingers. Hands should be rinsed thoroughly.

There may be times when the hands require decontaminating but there is no visible contamination of the hands with dirt or organic material. In these circumstances hands may be decontaminated using an alcohol handrub.

The handrub solution must come into contact with all surfaces of the hand. The hands must be rubbed together vigorously, paying particular attention to the tips of the fingers, the thumbs and the areas between the fingers, until the solution has evaporated and the hands are dry.



1. Palm to palm.



2. Right palm over left dorsum and left palm over right dorsum.



3. Palm to palm fingers interlaced.



4. Backs of fingers to opposing palms with fingers interlocked.



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



6. Rotational rubbing, backwards and forwards, with clasped fingers of right hand in left palm, and vice versa.

Handwashing technique. (Ayliffe et al. 1978; Lawrence 1985)

3. Drying

This is an essential part of hand hygiene. Dry hands thoroughly using good quality paper towels. In clinical settings, disposable paper towels are the method of choice because communal towels are a source of cross-contamination. Store paper towels in a wall-mounted dispenser next to the washbasin, and throw them away in a pedal operated domestic waste bin. Do not use your hands to lift the lid or they will become re-contaminated.

Hot air dryers are not recommended in clinical settings. However if they are used in other areas, they must be regularly serviced and users must dry hands completely before moving away.

Surgical Scrub

Surgical handwashing destroys transient organisms and reduces resident flora before surgical or invasive procedures. An aqueous antiseptic detergent solution is applied to moistened hands and forearms for approximately 2 minutes. The nails are scrubbed and a manicure stick can be used to remove dirt from beneath the nail. The disinfection process must be thorough and systematic, covering all aspects of the hands and forearms. The procedure should take 3 to 5 minutes. Preparations currently available are 4% chlorhexidine and 7.5% povidone-iodine solution. The hands must be thoroughly dried with a sterile towel if prior to commencing a sterile procedure. Hands may be dried on an unsterile paper towel when surgical scrub is done at the beginning of the session.

Hand Creams

An emollient hand cream should be applied regularly to protect skin from the drying effects of regular hand decontamination. If a particular soap, antimicrobial handwash or alcohol product causes skin irritation an occupational health team or general practitioner (who may refer to a dermatologist) should be consulted.

Handwashing Facilities

Facilities should be adequate and conveniently located. Hand washbasins must be placed in areas where needed and where client consultations take place. They should have elbow- or foot-operated mixer taps. Separate sinks should be available for other cleaning and rinsing purposes - such as cleaning and rinsing of instruments.

- Use wall-mounted liquid soap dispensers with disposable soap cartridges - keep them clean and replenished
- Place disposable paper towels next to the basins - soft towels will help to avoid skin abrasions
- Position foot-operated pedal bins near the hand washbasin - make sure they are the right size.

For procedures that are performed in Individuals' Homes

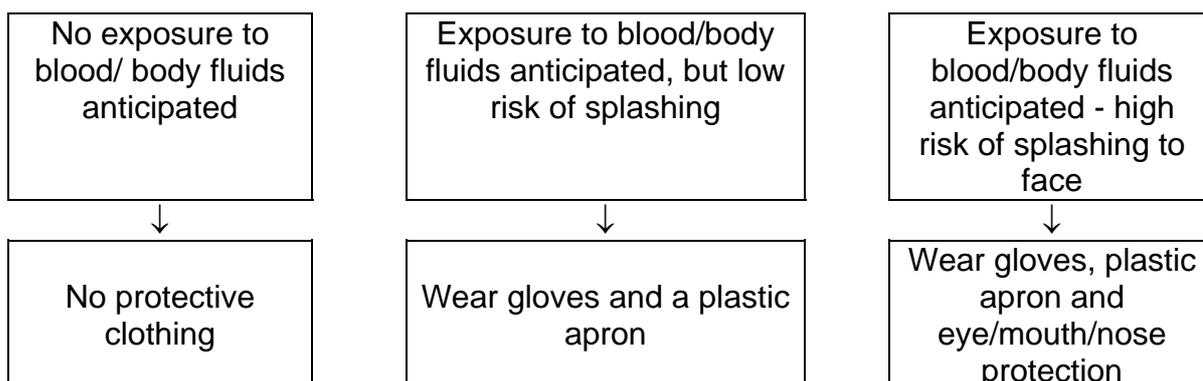
Hands should be washed prior to any procedure in the patient's home and before departure. If hand-washing facilities are inadequate (e.g. no warm water, no soap, no hand towel), the healthcare worker should carry liquid soap, paper hand towels and alcohol handrub. However alcohol handrub should only be used if the hands are visibly clean. Alternatively, arrangements should be made for the patient to be seen in a clinic or surgery.

3. Personal Protective Clothing

Selection of protective equipment must be based on an assessment of the risk of transmission of infection between the patient and chiropody or podiatry clinical staff.

Assessment of Risk

WHAT TO WEAR WHEN



Types of Protective Clothing

Disposable Gloves

Gloves must be worn for invasive procedures, contact with sterile sites and non-intact skin or mucous membranes, and all activities that have been assessed as carrying a risk of exposure to blood, body fluids, secretions or excretions, or to sharp or contaminated instruments.

Gloves that are acceptable to healthcare personnel and that conform to European Community (CE) standards must be available.

DO NOT USE powdered latex gloves or polythene gloves in healthcare activities.

Gloves must be worn as single-use items. They must be put on immediately before an episode of patient contact or treatment and removed as soon as the activity is completed. Gloves must be changed between caring for different patients, and between different care or treatment activities for the same patient, and do not substitute for handwashing.

Following risk assessment for infectious hazard, gloves should be disposed of via the offensive, non hazard route, or infectious hazard route, (**Refer to Waste Management Section F -10**) and hands must be decontaminated after the gloves have been removed.

Sensitivity to natural rubber latex in patients, carers and healthcare personnel must be documented. Alternatives to natural rubber latex gloves must be available. e.g. nitrile.

To prevent transmission of infection, gloves must be discarded after each procedure. Gloves should **not** be washed between patients as the gloves may be damaged by the soap solution and, if punctured unknowingly, may cause body fluid to remain in direct contact with skin for prolonged periods.

1. Non Sterile Gloves

Should be used when hands may come into contact with body fluids or equipment contaminated with body fluids.

2. Sterile Gloves

Should be used when the hand is likely to come into contact with normally sterile areas or during any surgical procedure.

3. General-purpose Utility Gloves

General-purpose utility gloves e.g. rubber household gloves, can be used for cleaning instruments prior to sterilisation, or when coming into contact with possible contaminated surfaces or items. Ideally, colour coding of such gloves should be used e.g. Green for the kitchen, blue for general environmental cleaning, and red for 'dirty' clinical duties. This will help prevent cross-infection from one area of work to another. The gloves should be washed with general-purpose detergent and hot water, and dried between uses. They should be discarded weekly, or more frequently if the gloves become damaged.

4. Polyurethane/polythene Gloves (Non Sterile and Sterile)

Polyurethane/polythene gloves do not act as a barrier to infection. They do not meet the Health and Safety Commission regulations and they do not have a place in clinical practice. **DO NOT USE.**

Disposable Plastic Aprons

These should be worn when there is a risk that clothing may be exposed to blood, body fluids, secretions or excretions, with the exception of sweat.

Plastic aprons should be worn as single-use items, for one procedure or episode of patient care, and then discarded and disposed of by the appropriate waste route (**Refer to Waste Management Section F -10**).

Visors or Face Masks and Goggles

These must be worn where there is a risk of blood, body fluids, secretions or excretions splashing into the face and eyes. In addition for procedures where there is a risk of aerosol inhalation of micro-organisms and fungi, example, using a nail drill.

The Society of Chiropractors & Podiatrists recommends the use of Particulate Filter Respirator masks that conform to European Standard EN149 and FFP1 or 2.

4. Safe Handling of Sharps

Sharps include needles, scalpels, stitch cutters, glass ampoules, sharp instruments and broken crockery and glass. Sharps must be handled and disposed of safely to reduce the risk of needle stick injury and possible exposure to blood-borne viruses. Always take extreme care when using and disposing of sharps. Avoid using sharps whenever possible.

All staff should be fully immunised according to national policy. In addition, all those handling sharps should have had a course of Hepatitis B vaccine. A record of Hepatitis B antibody response should be kept in the practice, or by the Occupational Health service for all clinical staff involved in 'exposure prone procedures' or where regular exposure to blood/blood-stained body fluids occurs:

- Clinical sharps should be single-use only
- Do not re-sheath a used needle - if this is necessary a safe method - for example, a re-sheathing device - must be used
- Discard sharps directly into a sharps container immediately after use and at the point of use
- Sharps containers should be available at each location where sharps are used
- Sharps containers must comply with UN 3921 and BS7320 standards
- Close the aperture to the sharps container when carrying or if left unsupervised to prevent spillage or tampering
- Place sharps containers on a level stable surface
- Do not place sharps containers on the floor, window sills or above shoulder height - use wall or trolley brackets
- Assemble sharps containers by following the manufacturer's instructions
- Carry sharps containers by the handle - do not hold them close to the body
- Never leave sharps lying around
- Do not try to retrieve items from a sharps container
- Do not try to press sharps down to make more room
- Lock the container when it is three-quarters full using the closure mechanism

- Label sharps containers with the source details when assembled and check it is still legible prior to disposal
- Place damaged sharps containers inside a larger sharps container - lock and label prior to disposal. Do **not** place inside waste bag.

Giving Injections

Always wash hands thoroughly prior to giving an injection.

If visibly dirty, skin should be cleaned with an individually packed swab soaked in 70% isopropyl alcohol and left to dry. If skin is clean, this step is not necessary.

Venepuncture and injections should be carried out only by staff who are adequately trained and experienced.

For occupationally acquired sharps injuries see section D.

5. Spillage Management

Deal with blood and body fluid spills quickly, effectively and promptly.

A blood spillage kit should be readily available to deal with a spillage of blood.

Commercial blood spillage kits can be purchased or the practice can put together a kit as described below. The kit should be kept in a designated place (depending on the size of the establishment there may be more than one kit).

The kit should comprise:

- 'Nappy' type bucket with a lid
- Non-sterile, unpowdered latex gloves or vinyl gloves
- Disposable plastic apron
- Disposable paper towels
- Disposable cloths
- Waste bag
- Small container of general-purpose detergent
- Hypochlorite solution (e.g. Household bleach or Milton) or sodium dichloroisocyanurate compound (e.g. Presept, Sanichlor) – to comply with COSHH 1988 – this compound should be kept in a lockable cupboard.

The kit should be immediately replenished after use.

For spillage of high-risk body fluids such as blood, method 1 (below) is recommended. For spillage of low-risk body fluids (non-blood containing excreta) such as excreta, vomit etc use method 2.

1. Hypochlorite/Sodium Dichloroisocyanurates (NaDCC) Method
(for blood spillage on hard surface)

- Prevent access to the area containing the spillage until it has been safely dealt with
- Open the windows to ventilate the room if possible
- Wear protective clothing
- Soak up excess fluid using disposable paper towels and/or absorbent powder e.g. vernagel
- Cover area with NaDCC granules (e.g. Presept, Sanichlor)

or

- Cover area with towels soaked in 10,000 parts per million of available chlorine (1% hypochlorite solution = 1 part household bleach to 10 parts water) e.g. household bleach, Milton, and leave for at least two minutes
- Remove organic matter using the towels and discard as clinical waste
- Clean area with detergent and hot water, and dry thoroughly
- Clean the bucket/ bowl in fresh soapy water and dry
- Discard protective clothing in the appropriate waste bag
- Wash hands.

2. Detergent and Water Method

(for all other body fluids and blood on carpeted areas)

- Prevent access to the area until spillage has been safely dealt with
- Wear protective clothing
- Mop up organic matter with paper towels or disposable cloths and/or absorbent powder e.g. vernagel
- Clean surface thoroughly using a solution of detergent and hot water and paper towels or disposable cloths
- Rinse the surface and dry thoroughly
- Dispose of materials as clinical waste
- Clean the bucket/bowl in fresh hot, soapy water and dry
- Discard protective clothing as clinical waste
- Wash hands
- Ideally, once dry, go over area with a mechanical suction cleaner.

For staff working in a private household the above guidance should be adhered to as closely as possible.

ESSEX HEALTH PROTECTION UNIT CHIROPODY & PODIATRY INFECTION CONTROL GUIDELINES

SECTION D – MANAGEMENT OF SHARPS and SPLASH INJURIES

1. Occupational Injuries

All chiropodists' and podiatrists' practices should have arrangements with an Occupational Health (OH) department for the management of occupational health matters, for example sharps injuries. Primary Care Organisations (PCO) should have an arrangement with an OH department for chiropodist and podiatrists within their employment. It is important for the chiropodist or podiatrist to have the OH department contact details available at all times. Independent chiropodists and podiatrists are advised to make arrangements privately with an OH department.

In the event of no arrangements with an OH department, medical advice should be obtained from the recipient's general practitioner. However in the case of a high risk HIV incident medical advice should be sought from the nearest Accident and Emergency Department.

The following guidelines have been written with the assumption that arrangements with an OH department are in place.

In the event of a sharp injury/contamination incident these guidelines should be followed:

A sharp injury/contamination incident includes:

- Inoculation of blood by a needle or other 'sharp'
- Contamination of broken skin with blood
- Blood splashes to mucous membrane e.g. eyes or mouth
- Swallowing a person's blood e.g. after mouth-to-mouth resuscitation
- Contamination where clothes have been soaked by blood
- Bites.

When a sharp injury/contamination incident occurs:

- Encourage bleeding from the wound
- Wash the wound in soap and warm running water (do not scrub)
- Cover the wound with a dressing
- Skin, eyes or mouth, wash in plenty of water
- Ensure the sharp is disposed of safely i.e. using a non-touch method into a sharps container
- Report the incident to immediate supervisor. An incident form should be completed as soon as the recipient of the injury is able
- The incident should be reported to the recipient's General Practitioner/Occupational Health department
- Attempt to identify source of the needle/sharp. Depending on the degree of exposure and the knowledge of the source patient/client it may be necessary to take further immediate action, see Section 2.

2. Control Measures

Any staff working in a healthcare facility who handle sharps or hazardous infectious waste should receive a full course of Hepatitis B vaccine and have their antibody level checked.

New staff or any existing staff who know they are not already protected should contact their General Practitioner/Occupational Health Department to arrange vaccination without delay.

Chiropodists and podiatrists carry out minor surgical procedures and although some podiatry procedures are extremely invasive e.g. joint replacement, these procedures are not classified as Exposure Prone Procedures (EPPs). Therefore the obligations for EPPs do not strictly apply. However it is still recommended that an individual who believes that they may have been at risk of exposure to a blood-borne virus infection (Hepatitis B, C or HIV) seek occupational health advice.

The individual should attend the nearest A&E department without delay.

What to do after a.....

SHARPS INJURY



Directions for the management of needlesticks, and cuts and penetrating wounds



Wash cuts thoroughly with soap and warm water,
then gently encourage to bleed.
Apply a dressing if necessary.



Splashes to the eyes or mouth
should be thoroughly rinsed with running water.



Report incident to your manager immediately (if applicable).

Your medical advisor should: -

- a) Take a history and make a risk assessment
- b) Review your Hepatitis B vaccine status
- c) Take 10ml clotted blood from yourself,
and your manager should arrange for blood to be
taken from the 'source' (with informed consent)
- d) Send the sample's to the microbiology department marked
'needlestick injury'

Complete an accident form

Insert your local arrangements

Please Note

If the source is known or there is a risk of having HIV the injured person should
contact either Accident & Emergency, and attend if possible within the hour

Remember

Be prepared – if you are at risk of exposure –
get immunised against Hepatitis B Virus



In hours:- Your GP or Occupational Health Department
Out of Hours:- Your local A&E Department



**ESSEX HEALTH PROTECTION UNIT
CHIROPODY & PODIATRY
INFECTION CONTROL GUIDELINES**

SECTION E – MANAGEMENT OF INFECTIOUS DISEASES

1. Introduction

This section gives information on immunisation to prevent infectious diseases, actions required in the event of infection with blood-borne viruses and general information on individual infectious disease that are available on information sheets.

The information sheets include information on incubation periods, method of spread, period of infectivity, exclusion periods and where appropriate the management of contacts.

In addition, there is extended text on Transmissible Spongiform Encephalopathies and MRSA.

2. Personal Protection – Immunisation

All clinical staff should have completed the recommended course of childhood vaccinations e.g. polio, tetanus, tuberculosis, etc., and in addition a full course of Hepatitis B vaccine. Two months after the course of Hepatitis B vaccination a blood test to determine that immunity has been achieved must be done. Once immunity has been achieved further boosters are no longer considered necessary. A record of all vaccination and immunity acquired from Hepatitis B should be kept in the Practice. Clinical Staff who do not acquire immunity from Hepatitis B vaccination should seek occupational health advice to investigate why immunity has not been acquired and the implications for clinical practice. Details of the UK routine vaccination schedule can be accessed via www.dh.gov.uk. Enter 'greenbook' into the search link.

3. Information Sheets

Printable factsheets on the following are available from our website, www.hpa.org.uk/essex. See also www.hpa.org.uk, under Topics A-Z, for other diseases and factsheets.

The factsheets can be photocopied and passed to members of the public:

Blood-Borne Viruses	Immunisation – General Information
Bugs, Fleas and Ticks	Impetigo
Conjunctivitis	Meningitis
Diarrhoea and Vomiting	MMR and Immunisations
Glandular Fever	Molluscum Contagiosum
Group A Streptococci	Rashes in Childhood
Hand, Foot and Mouth	Ringworm
Headlice Management Chart	Scabies
Herpes	Verrucas (Warts)

4. Meticillin Resistant *Staphylococcus aureus* (MRSA)

General information on this organism is available on the information sheet. The standard principle precautions are required when a patient is colonised or infected with MRSA.

Information on MRSA in the Community

What is MRSA?

MRSA stands for Meticillin Resistant *Staphylococcus Aureus*.

It occurs when the common bacterium of *Staphylococcus Aureus* becomes resistant to treatment with a commonly used antibiotic flucloxacillin. Such strains are usually resistant to many other antibiotics.

Generally an adverse scenario for an individual with MRSA in the community environment is that they have an infection in a wound, which is then slow to heal.

What is the difference between Colonisation and Infection?

Colonisation - means the MRSA is living on the skin (usually nose, throat, axilla or groin), causing no problem to the individual.

Infection - means that the MRSA is causing an active infection i.e. the wound is red, hot, inflamed, there may be a discharge and pain.

Why is the Management of MRSA different in the Community?

In the community, there are far fewer acutely ill patients with increased vulnerability than in the acute hospital.

What Precautions do you need to take?

No special precautions are necessary.

Standard Principles of Infection Control (especially handwashing) are all that are necessary.

It is important that the clinical environment is kept clean. In addition to the normal cleaning regimen the clinical surfaces should be wiped over with a detergent impregnated cloth after completing the dressing of all clients with wounds that show signs of infection.

However MRSA does act as a reminder to reinforce the good practices that should **already** be in place.

Further Advice

Please seek further advice from the PCO infection control nurse or HPA Communicable Disease Control Nurse if required.

**ESSEX HEALTH PROTECTION UNIT
CHIROPODY & PODIATRY
INFECTION CONTROL GUIDELINES**

SECTION F – CLINICAL PRACTICE

The Clinical Practices included in the section are:

1. Training in Infection Control
2. Aseptic Technique
3. Surgery Design
4. Choice of Equipment
5. Single-use (Disposable) Items
6. Decontamination
 - a) The environment
 - b) Surgical instruments
 - c) Disinfection
 - d) Equipment prior to service and repair
7. Nail Drills
8. Healthcare Worker's Surgery Clothing
9. Safe Handling of Specimens
10. Waste Management
11. Infection Control Checklist

1. Training in Infection Control

All staff should receive training and regular updates in infection control practice. Appropriate hand decontamination facilities and personal protective clothing should be readily available. Staff employed to perform specialist tasks such as the decontamination of instruments should receive specific training and be assessed to be competent to perform the tasks.

2. Aseptic Technique

Aseptic technique is the term used to describe the methods used to prevent contamination of wounds and other susceptible sites by organisms that could cause infection.

The aims of aseptic technique are:

- To prevent the introduction of pathogens to the site
- To prevent the transfer of pathogens from one patient to another.

An aseptic technique should be implemented during any invasive procedure that bypasses the body's natural defences.

The procedure can be performed using sterile gloved hands. Hands should be washed before and after the technique.

Many aseptic techniques include a ritualistic practice of cleaning trolleys with alcohol between patients. It is now felt that this serves no useful purpose, and that an area cleaned by detergent and hot water is sufficient, as the sterile towel contained within the dressing pack will create the sterile field.

Bacteria acquired on the clothing during the procedure may be transferred into the wound of another patient, therefore a clean disposable apron should be used for each dressing procedure.

3. Surgery Design

The surgery layout should be such that there are areas for the operator to work with ease of movement.

- Within these areas the design should facilitate a workflow from clean to dirty
- The work surfaces should be seamless, with covered ends that prevent the accumulation of contaminated material and facilitate cleaning
- The surfaces should remain clutter free
- A designated area for clinical waste (**Refer to Section F - 10 Waste Management**)

- Ideally the decontamination of surgical instruments should be in a designated room within the practice/clinic. Where this is not possible a recognised separate area that is away from the operator's clean area of the surgery is required. The decontamination room/ area should include 2 deep sinks, ultrasonic cleaner and/or washer disinfector and autoclave. A further handwashing sink is required in the designated decontamination room
- Flooring should be washable, impervious, non-slip, seamless or sealed seams. The flooring must continue up the wall to cover the junction between the floor and the wall. The floor should not allow pooling of liquids. Carpets are not recommended
- During chiropody/podiatry procedures aerosol and environmental contamination can be limited by ensuring that the surgery is well ventilated, preferably by mechanical means. Ventilation systems require regular maintenance and cleaning as advised by the manufacturer and a record of maintenance and repairs should be kept. The use of electric fans is not generally recommended, as it is often difficult to maintain a cleaning regimen to ensure that the surfaces and vanes are kept clean. If used, the fans must be sited so that airborne contamination of the operative field does not occur.

For further guidance on accommodation please consult 'The Society of Chiropodists and Podiatrists Guidelines on Minimum standards of Clinical Practice'. Appendix 1 gives the standards for the clinical environment as part of the above document.

4. Purchase of New Equipment

When purchasing equipment it is important to confirm that:

- It is CE marked, this is the Medical and Healthcare Products Regulations Agency (MHRA) approved standard
- It is appropriate for the task that it will be used for
- It is easy to clean/decontaminate and maintain
- It can be easily identified to be reusable or if not it is clearly marked as for single-use.

Additional considerations when purchasing a ventilation system:

- The exhaust should be positioned on the outside where there is no risk of re-circulation of exhaust air to another building
- The design of the outlet should prohibit the entry of animals
- The air movement created by mechanical ventilation must flow from 'clean' to 'dirty' areas.

For further detailed advice on the purchase of a benchtop autoclave:

- Consult the guidance of the Medical Devices Agency Benchtop Steam Sterilizers- Purchase, Operation and Maintenance (MDA DB2002(06) October 2002. Available from the MHRA website www.mhra.gov.uk.

5. Single-use (Disposable) Items

Many items are available for single-use, for example hypodermic needles and scalpel blades. After use these items should be disposed of as clinical waste (**Refer to Waste Management Section F -10**). Where there is the choice of single-use or reusable items, the single-use item is recommended. Certain items are classified as single-use only, that is 'use once, then dispose of', as opposed to individual patient use, which allows an item to be used on the same patient several times. The single-use logo is usually displayed on the item.



SINGLE-USE ONLY
DO NOT RE-USE

These items must **never** be re-used. If in doubt, refer to the manufacturer's recommendations.

6. Decontamination

The aim of decontaminating equipment and the environment is to prevent potentially pathogenic organisms reaching a susceptible host in sufficient numbers to cause infection.

A. The Environment

The environment plays a relatively minor role in transmitting infection, but dust, dirt and liquid residues will increase the risk. They should be kept to a minimum by regular cleaning.

A written cleaning schedule should be devised specifying the persons responsible for cleaning, the frequency of cleaning and methods to be used and the expected outcomes:

- Provide single-use, non-shedding cloths or paper roll for cleaning
- Use general-purpose detergent (GPD) for all environmental cleaning - follow the manufacturer's instructions
- Keep equipment and materials used for general cleaning separate from those used for cleaning up body fluids

- Keep mops and buckets clean and dry, and store mops head up and buckets inverted
- Mop head should be removable for frequent laundering, or single-use if this is not possible
- Colour-code-cleaning equipment, such as mop heads, gloves and cloths for toilets, kitchens and clinical areas. Use different colours for each area
- Carpets are not recommended in treatment areas where procedures will take place because of the risk of body fluid spills. Where carpets are in place, there should be procedures or contracts for regular steam cleaning and dealing with spills.

DOMESTIC	CLEANING
Bucket (plastic)	Empty contents down toilet or slop hopper. Rinse and clean with detergent solution then dry. If body fluids have been in contact with the bucket, after cleaning rinse with a 0.1% (1000 ppm available Cl) hypochlorite solution
Mop (wet)	Use disposable. Dispose the mop weekly or sooner if heavily soiled or contaminated with body fluids. After use rinse, dry and store head up
Mop (dry)	Vacuum after each use
Lavatory brushes	Rinse in flushing water and store dry
Suggested colour coding of cleaning equipment	Refer to Colour-code for Hygiene Table
Floors	Dust control – vacuum or dry mop. Wet cleaning - wet mop, wash with hot water and GPD If known contamination - follow with 0.1% (1,000 ppm available Cl) hypochlorite solution
Furniture and fittings	Damp dust with hot water and detergent. If known contamination - follow with 0.1% (1,000 ppm available Cl) hypochlorite solution
Walls and ceilings	Not an infection problem. When visibly soiled use hot water and detergent. Splashes of blood, or known contaminated material should be cleaned promptly with 0.1% (1,000 ppm available Cl) hypochlorite solution

Chiropodists and podiatrists working on a sessional arrangement in premises such as clinics and doctors' surgeries should ensure that their service contract stipulates that the general surfaces of the clinic are clean and clutter free prior to commencing the session. Before commencing a session the clinical work surfaces and procedural trolley should be wiped over with a wet disposable cloth moistened in detergent and hot water. The surfaces need to be dried with paper roll after cleaning. Between clients when there is no visible contamination with blood or other body fluids, the surfaces may be wiped over with a hard surface wipe. An alcohol-based hard-surface cleaner is not recommended on contaminated surfaces.

Surfaces such as clinical worktops that have been heavily contaminated with blood and or body fluids should be wiped clean with hot water and detergent, then wiped with a 0.1% hypochlorite (1,000 ppm available Cl) disinfectant solution.

Colour-Code for Hygiene

Based on the Safer Practice Notice – Colour-coding hospital cleaning materials and equipment, published by the National Patient Safety Agency.

National Colour Coding Scheme



THE GOLDEN RULE: WORK FROM THE CLEANEST AREA TOWARD THE DIRTIEST AREA. THIS GREATLY REDUCES THE RISK OF CROSS-CONTAMINATION.

1. The aim of a colour-coding system is to prevent cross-contamination
2. It is vital that such a system forms part of any employee induction or continuous training programme
3. A minority of people are colour-blind in one or more colours. Some individuals may not know this and colour identification testing should form part of any induction training
4. Always use two colours within the washroom/sanitary area
5. The colour-coding system must relate to all cleaning equipment, cloths and gloves.

Monitoring of the system and control of colour-coded disposable items against new stock release is extremely important.

B. Surgical Instruments

The Health Act 2006 (applicable to NHS Bodies and best practice for non-NHS practices) and Guidance from NHS Estates and Medical and Healthcare products Regulations Agency (MHRA) strongly recommend that surgical instruments are single-use or if reusable the process of decontamination takes place in a Sterile Services Department (SSD). The Consumer Protection Act (1987)(6) in particular Product Liability '*has implications for the reprocessing of devices used in patient care*'. In particular, it is essential to maintain adequate records that demonstrate how a particular device was processed, a description of the method/s employed and details of available trained personnel with copies of training records.

There are new developments in the availability of disposable chiropody surgical instruments. All clinicians are advised to explore the feasibility of the use of disposable instruments or contracts for the loan of sterile instruments from SSD.

The threat posed by transmission of CJD by surgical instruments has led the Department of Health (DoH) to stress the importance of decontamination procedures. The DoH has highlighted the importance of a thorough cleaning procedure prior to disinfection or sterilisation.

Re-usable equipment should be appropriately decontaminated between each patient using a risk assessment model. Use only the method advised by the manufacturer - using any other process may invalidate warranties and transfer liability from the manufacturer to the person using or authorising the process. If you have any doubts about the manufacturer's recommendations, seek further advice.

The following terms have been adapted from the Department of Health, HSG (93)26, 1993a.

- **Cleaning** 'is a process which physically removes contamination but does not necessarily destroy micro-organisms'. The reduction of microbial contamination cannot be defined and will depend upon many factors including the efficiency of the cleaning process and the initial bio-burden.

Cleaning is an essential prerequisite of equipment decontamination to ensure effective disinfection or sterilisation can subsequently be carried out.

- **Disinfection** 'is a process used to reduce the number of viable micro-organisms, which may not necessarily inactivate some viruses and bacterial spores'. Disinfection will not achieve the same reduction in microbial contamination levels as sterilisation.
- **Sterilisation** 'is a process used to render the object free from viable micro-organisms, including spores and viruses'.

Risk Assessment

Medical equipment is categorised according to the risk that particular procedures pose to patients - by assessing the microbial status of the body area being manipulated during the procedure. For example, items that come into contact with intact mucous membranes are classified as intermediate risk and require disinfection between each use as a minimum standard. Items that enter normally sterile body areas, or come into contact with broken mucous membranes are classified as high-risk and must be sterile before use.

Some high-risk devices cannot tolerate high temperatures, and must either be single-use or disinfected between each use - for example fibre-optic endoscopes. The single-use option is the option of choice.

Risk Assessment for Decontamination of Equipment

Low risk - Items that are in contact with healthy skin or not in contact with patient e.g. furniture, require cleaning.

Intermediate risk - Items as above that have, in addition, been contaminated with body fluids require cleaning followed by disinfection e.g. contaminated work surfaces. Consider using disposable single-use items intermediate risk equipment.

High risk - Items in contact with a break in the skin or mucous membrane or for introduction into sterile body areas e.g. instruments for surgical/ operative procedures require cleaning followed by sterilisation or use disposable single-use item.

Cleaning Methods

Cleaning is the first step in the decontamination process. It must be carried out before disinfection and sterilisation to make these processes effective. Thorough cleaning is extremely important in reducing the possible transmission of all micro-organisms, including the abnormal prion protein that causes vCJD.

Mechanical cleaning using a washer disinfector or ultrasonic bath is the recommended method of cleaning. Mechanical cleaning reduces the risk of infection to the healthcare worker.

When mechanical cleaning is not possible items that are contaminated with blood and blood-stained body substances should be rinsed with cold water prior to thorough cleaning with detergent and warm water - maximum temperature 35°C. This will remove many micro-organisms. Hot water should not be used as it will coagulate protein making it more difficult to remove from the item of equipment. Refer to NHS Estates - A Protocol for the local decontamination of surgical instruments (March 2001).

Manual cleaning must be undertaken in designated sinks. Two sinks are required, one sink for rinsing prior to washing manually. The second sink for rinsing the items after washing. The sinks should be deep enough to completely immerse the items to be rinsed and cleaned. Scrubbing can generate aerosols that may

convey infective agents. Therefore if scrubbing is necessary it must be carried out with the brush and item beneath the surface of the water.

For clinicians working in premises where there are not the recommended number of sinks as above, and other methods of acquiring sterile instruments are impractical, it is suggested that the sink is cleaned and dried after cleaning instruments. The instruments may then be rinsed in the same sink. However the same sink must not be used for handwashing.

Personal protective equipment, including aprons, gloves and goggles or visors, must be readily available for staff.

Cleaning equipment - such as brushes, cloths and ultrasonic washers must be stored clean and dry between uses. Use single-use, non-shedding cloths rather than re-usable cloths. Use single-use brushes rather than re-usable brushes. Do not store brushes in disinfectant solutions.

After cleaning and thorough rinsing, the items should be dried using a disposable non-shedding absorbent cloth.

Ultrasonic cleaning baths:

- Fill the tank and use a detergent solution as recommended by the manufacturer at the beginning of each session
- Run the ultrasonic cleaning bath for a few minutes to allow the solution to de-gas prior to placing instruments into the tank, use the basket as recommended by the manufacturer
- If the solution becomes heavily contaminated it will be necessary to empty and change the solution during the session
- Empty, clean and dry at the end of the session/day
- Clinicians must perform and record the results of periodic testing in accordance with *HTM2030 and manufacturer's instructions
- Service frequently as per manufacturer's instructions - include checking the power output of the transducer in accordance with HTM 2030
- Inspect instruments for residual debris after cleaning, and repeat if necessary
- Document all servicing and repairs.

Washer disinfectors

- Use a detergent solution as recommended by the manufacturer
- Operate and load as recommended by the manufacturer
- Inspect instruments for residual debris after cleaning, and repeat if necessary

- Staff must record the results of periodic testing in accordance with HTM2030 and manufacturer's instructions
- Inspect and retain the printout of each cycle
- Service frequently
- Document all servicing and repairs.

Note:

The compatibility of all materials and items with the decontamination process should be established by reference to the manufacturer's instructions.

Cannulated instruments must be flushed with the cleaning solution in addition to ultrasonication.

Autoclavable Podiatric handpieces should be held by specific furniture in washer disinfectors.

Inspection and Lubrication

Before sterilisation, items should be checked for both cleanliness and operation i.e. that forceps align, the handle grip is firm, joints move freely – but are not loose, instruments are not rusted, etc.

Some instruments will require lubrication. Seek advice from the manufacturer and check compatibility of the recommended oil with the sterilisation process.

There are some nail drill handpieces that are autoclavable, seek advice from the manufacturer. Follow the manufacturer's guidance on lubrication of drill handpieces prior to placing in an autoclave. A mechanical maintenance system is considered to deliver a better lubrication process.

Note: HTM 01-01 (Part A and Part B) is currently in draft form, and will supersede HTM 2030. As result, these guidelines may be reviewed and amended.

Sterilisation Methods

You can obtain sterile instruments by:

- **Purchasing pre-sterilised single-use items**
This avoids the need for re-sterilisation and is practical and safe method. You must store items using a stock rotation system according to manufacturer's instructions.
- **Using a sterile supplies department (SSD)**
SSDs may provide a cost effective and efficient service. There should be a contract specifying the responsibilities of both parties. Since June 1998 SSDs have been bound by the Medical Devices Directive 93/42/EEC, which requires the department to have a quality system of audit and to have been assessed and validated as CE compliant. The PCO or Chiropody/ Podiatry practice should seek legal and risk management advice if the contracted SSD has not been assessed as being CE compliant.

When the above options are not possible instruments may be sterilised by using a bench-top steam displacement autoclave/ vacuum steam autoclave.

It is important to use the correct autoclave for the task required, and the manufacturer should be consulted accordingly.

Displacement autoclaves are appropriate for unwrapped, solid instruments.

There are two types of Bench-top vacuum autoclave, type B for porous loads, and type S for loads specified by the manufacturer. Vacuum autoclaves are required for the sterilisation of wrapped instruments, and instruments with lumens such as trochars and handpieces. Unwrapped instruments can also be sterilised in vacuum autoclaves.

Sterilisation of Instruments – Responsibilities

Increasingly healthcare providers are required to comply with a number of quality assurance standards, outlined in the following pages of this document.

If sterilisation is to be carried out, then management and other personnel are required to ensure that the autoclaves are operated safely and effectively and in compliance with legislation and standards. This is dependant on training and a sound general knowledge of the principles of sterilisation.

The key responsibilities of management can be summarised as follows:

- To ensure that sterilisation is carried out in compliance with the law and with the policy of the UK health departments
- To ensure all personnel connected with sterilisation, including any contractors, are suitably qualified and trained to carry out their responsibilities

- To ensure that purchased autoclaves conform to legal requirements, the minimum specifications set out in British and European standards and any additional requirements of the UK health departments
- To ensure that autoclaves are installed correctly and safely with regard to proper functioning, safety of personnel and environmental protection
- To ensure that newly installed autoclaves are subject to a documented scheme of validation comprising installation checks and tests, commissioning and performance qualification tests before they are put into service
- To ensure that autoclaves are subject to a documented scheme of prevention maintenance
- To ensure that autoclaves are subject to a documented scheme of periodic tests at daily, weekly, quarterly and yearly intervals.
- To ensure that procedures for production, quality control and safe working are documented and adhered to in the light of statutory requirements and accepted best practice
- To ensure that procedures for dealing with malfunctions, accidents and dangerous occurrences are documented and adhered to
- To ensure that there is a procedure for the de-commissioning of unsafe units and removing from service.

The 'user', that is the healthcare person doing the decontamination process, is responsible for ensuring that s/he performs the process as outlined in this document. Both the 'user' and the management are liable according to The Consumer Protection Act (1987-6).

Installation and Validation

HTM 2010 contains detailed DoH advice on installation, maintenance and operation. After installation the autoclave must be validated prior to use.

Validation is a documented procedure for gathering and interpreting data to show that the autoclave complies with the manufacturer's specifications and that it is capable of sterilizing a product consistently, when used according to the manufacturer's instructions. It consists of commissioning checks and tests to show that it is working correctly, and other (performance qualification) checks and tests to make sure the load (as defined by the manufacturer) will be sterilized. All records of the validation process should be retained by the owner for inspection.

Following validation a schedule for periodic testing and planned preventative maintenance should be drawn up.

Validation of the autoclave should be carried out by an appropriately qualified person. This will probably be the person who also conducts the required periodic testing and maintenance. The manufacturer's programme of planned

maintenance should be used. If no manufacturer's programme is available then advice should be sought from an appropriately qualified maintenance engineer.

Periodic Testing of Benchtop High Temperature Steam Autoclaves

Note: Failure to carry out periodic tests and maintenance tasks could compromise safety and may have legal and insurance implications for the user or owner of the autoclave.

Sterilisation is a process whose efficiency cannot be verified retrospectively by inspection or testing of the product. Routine monitoring of the process, combined with periodic testing of the autoclave's performance is therefore needed to give assurance that sterilising conditions are consistently being achieved.

A daily, weekly, quarterly and yearly testing schedule is required.

Each autoclave should have a log book in which details of maintenance, tests, faults and modifications are recorded. The log book should be kept for 11 years.

Daily Testing

The owner/user is responsible for daily testing. These tests are designed to show that the operating cycle of the instruments fitted to the autoclave is working correctly.

Procedures for Daily Testing

1. A normal cycle is operated with the chamber empty except for the usual chamber "furniture" (e.g. trays, shelves, etc.). Vacuum autoclaves require a steam penetration indicator i.e. Bowie Dick Test, or similar (check with the manufacturer).
2. A record should be made in the log book of the elapsed time and indicated temperature and pressure (the values shown on the dials or other visual displays fitted to the autoclave) at all significant points of the operating cycle – the beginning and end of each stage or sub-stage, and the maximum temperature and pressure values attained during the holding time.
3. If the autoclave is fitted with a temperature and pressure recorder, the printout should be compared with the records in the autoclave log book and retained for future inspection.

The test can be considered satisfactory if all the following apply:

- A visual display of “cycle complete” is indicated
- The value of the cycle variables are within the limits established by the manufacturer as giving satisfactory results
- The autoclave hold time is not less than that specified in Table 1
- The temperatures during the hold time are within the appropriate temperature range specified in Table 1
- The door cannot be opened until the cycle is complete
- No mechanical or other anomaly is observed
- If the autoclave is fitted with a temperature and pressure recorder, then during the plateau period:
 - The indicated and recorded chamber temperatures are within the appropriate sterilisation temperature range
 - The difference between the indicated and recorded temperatures does not exceed 2°C
 - The difference between the indicated and recorded pressure does not exceed 0.1 bar.
- Penetration indicator test satisfactory (Vacuum only e.g. Bowie Dick, Helix).

Table 1 - Sterilisation temperature ranges, holding times and pressure for autoclaves with high temperature steam

Option	Sterilisation Temperature Range (°C)			Approx. Pressure (bar)	Minimum Hold (min)
	Normal	Minimum	Maximum		
A	136	134	137	2.25	3
B	127.5	126	129	1.50	10
C	122.5	121	124	1.15	15

Weekly Testing

- Examine the door seal, check security and performance of door safety devices
- Check that safety valves, or other pressure limiting devices are free to operate.

Quarterly and Annual Checks

These tests should be conducted by a suitably qualified person as they require the use of specialised equipment and will probably be conducted by the person who undertakes the maintenance. Guidance on these tests are contained in HTM 2010.

Examples of log book pages and Daily, Weekly test sheets are available in MDA (2002) Benchtop Steam Sterilizers – Guidance on Purchase, Operation and Maintenance. MDA DB 2002(06).

In the event of a malfunction notify the engineer at once

Technical Aspects and Safety Considerations

1. Steam sterilisation is dependent on direct contact between the load material and saturated steam under pressure, at one of the temperatures shown in Table 1, in the absence of air.
2. Benchtop steam autoclaves achieve the above conditions by electrically heating water (usually sterile water for irrigation, but the manufacturer may recommend purified) within the chamber to produce steam at the required pressure and temperature. Air is passively displaced from the chamber by steam in displacement autoclaves but actively removed from the chamber in vacuum autoclaves. This active removal of air ensures heat is not only in contact with external surfaces but in addition penetrates the inner surfaces of the instruments with lumens and packed instruments.
3. During the sterilising cycle the autoclave door must prevent access to the chamber whilst it is under pressure. The door should not be able to be opened until the “cycle complete” signal is indicated.

Solutions

The quality of water is important for an effective process to achieve sterilisation and to prevent scale and rust accumulation on the instruments. HTM2031 (Clean Steam) recommends water for irrigation - check compatibility with manufacturer. Reservoir should be emptied and cleaned as per manufacturer’s guidance.

Loading the Autoclave

It is important to ensure that the steam can reach all surfaces of the instruments, ensure that they are dry and not touching. Leave hinged instruments open. Do not overload machine.

Use of Instruments

Instruments should be used immediately (up to 3 hours after the cycle is finished when the door remains shut) after sterilisation, as no adequate method exists to store and also maintain sterility when instruments have been sterilised unwrapped.

For non-invasive procedures store instruments in a clean, dry and dust-free place, preferably a drawer or covered box.

Training

Training of personnel to use the equipment correctly is an essential part of ensuring a safe procedure. No staff should be expected to use such equipment, or be involved in the sterilisation procedure unless a clear understanding is first ensured.

C Disinfection Methods

Disinfection methods apply to handwashing, skin preparation and equipment. Disinfection of equipment should be limited and, where possible, disposable or autoclavable equipment used instead. If disinfection is required, use the method recommended by the manufacturer.

Chemical	Advantages	Disadvantages	Uses
Chlorine-based: Hypochlorites (e.g. Domestos, Milton) NB Undiluted commercial hypochlorite contains approx. 100,000ppm available chlorine	<ul style="list-style-type: none"> • wide range of bacterial, virucidal, sporicidal and fungicidal activity • rapid action • non-toxic in low concentrations • can be used in food preparation • cheap 	<ul style="list-style-type: none"> • inactivated by organic matter • corrosive to metals • diluted solutions can be unstable • need to be freshly prepared • does not penetrate organic matter • bleaches fabrics • need ventilation 	<ul style="list-style-type: none"> • can be used on surfaces and for body fluid spills
Sodium Dichloroisocyanurates (NaDCC) e.g. Presept, Haz-Tab, Sanichlor	<ul style="list-style-type: none"> • slightly more resistant to inactivation by organic matter • slightly less corrosive • more convenient • long shelf-life 	<ul style="list-style-type: none"> • as above 	<ul style="list-style-type: none"> • as above
Alcohol 70% e.g. isopropanol	<ul style="list-style-type: none"> • good bactericidal, fungicidal and virucidal activity • rapid action • leaves surfaces dry • non-corrosive 	<ul style="list-style-type: none"> • non-sporicidal • flammable • does not penetrate organic matter • requires evaporation time 	<ul style="list-style-type: none"> • can be used on visibly clean surfaces, or for skin and hand decontamination
Chlorhexidine e.g. hibiscrub, chlorhexidine wound cleaning sachets	<ul style="list-style-type: none"> • most useful as disinfectants for skin • good fungicidal activity • low toxicity and irritancy 	<ul style="list-style-type: none"> • limited activity against viruses • no activity against bacterial spores • inactivated by organic matter 	<ul style="list-style-type: none"> • For skin and hand decontamination

D Decontamination of Equipment Prior To Inspection, Service, Repair or Loan

Do not send contaminated equipment elsewhere without decontaminating first. Before dispatch, complete and attach a certificate which states the method of decontamination used, or the reason why it was not possible (NHS Management Executive 1993). Equipment that is impossible to decontaminate is likely to be complex, high-technology and heat-sensitive.

Often it cannot be decontaminated without being dismantled by an engineer - in this case attach a bio-hazard label to the item. Complete the clearance certificate and advise staff on protective measures.

Documentation

Figure 3 Decontamination flow chart for devices being sent for investigation/repair or service

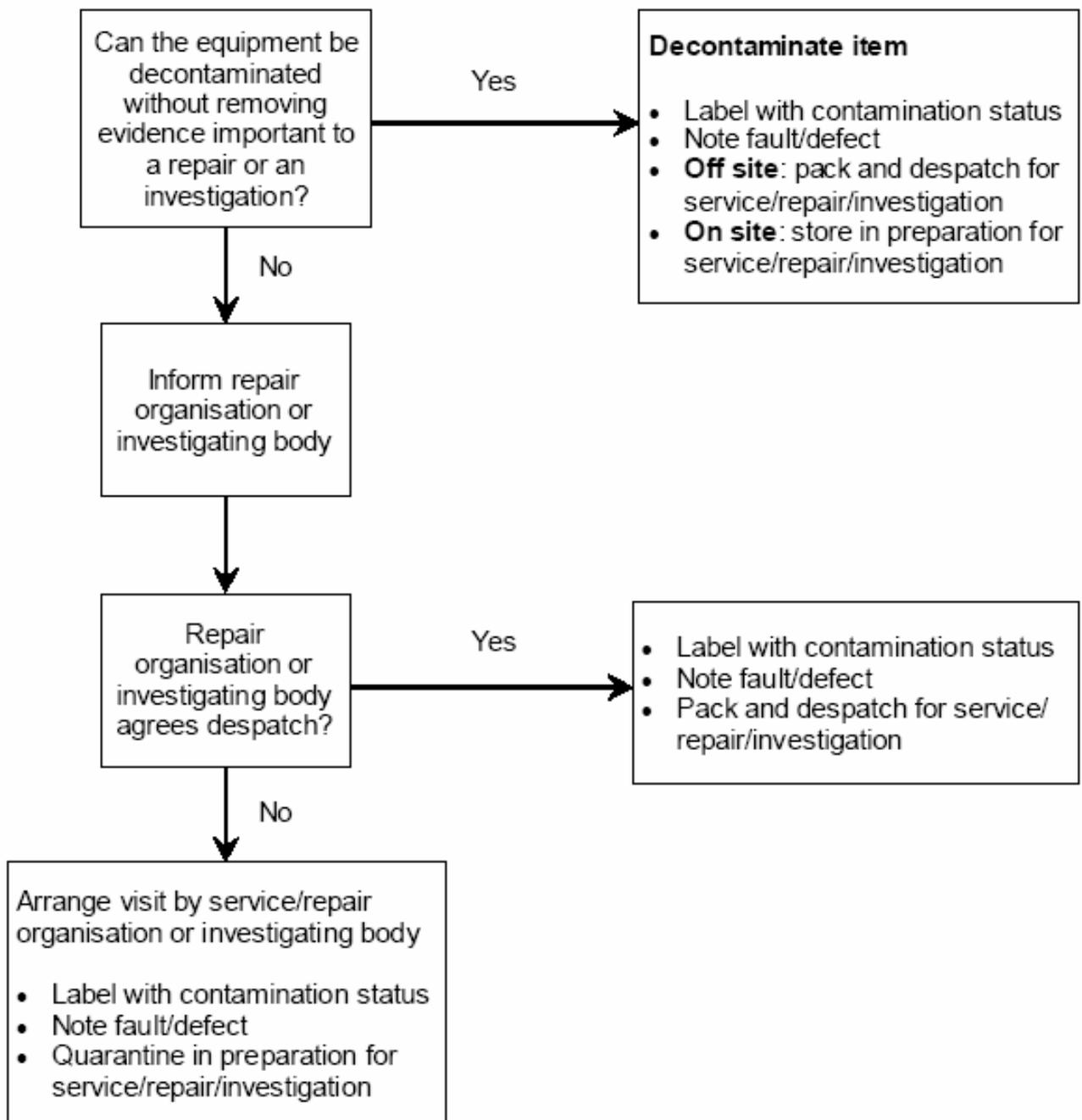


Figure 4 Sample form – declaration of contamination status

From (consignor): _____ Address _____ _____ _____ Reference _____ Emergency tel _____	To (consignee): _____ Address _____ _____ _____ Reference _____
---	--

Type of equipment _____ Manufacturer _____
 Description of equipment _____
 Other identifying marks _____
 Model No. _____ Serial No. _____
 Fault _____

Is the item contaminated?	Yes* <input type="checkbox"/>	No <input type="checkbox"/>	Don't know <input type="checkbox"/>
* State type of contamination: blood, body fluids, respired gases, pathological samples, chemicals (including cytotoxic drugs), radioactive material or any other hazard _____			
Has the item been decontaminated?	Yes† <input type="checkbox"/>	No‡ <input type="checkbox"/>	Don't know <input type="checkbox"/>
† What method of decontamination has been used? Please provide details Cleaning _____ Disinfection _____ Sterilization _____			
‡ Please explain why the item has not been decontaminated? _____ _____			

Contaminated items should not be returned without prior agreement of the recipient

This item has been prepared to ensure safe handling and transportation:	
Name _____	Position _____
Signature _____	
Date _____	Tel _____

MHRA DB2006(05)

7. Nail Drills

The risk of infection from electric hand-held nail drills has been reported in the literature (Gatley (1991), Sherrard-Brisley (1997)).

- Directly; from material passed to the patient and by inhalation to the clinician
- Indirectly; from aerosol contamination to the environment.

The risk to a normal healthy individual is considered to be minimal but for individuals with impaired immunity the risk is higher.

However the risk is sufficient to advise the following precautions:

- Risk assessment of the presence and degree of infection (fungal and bacterial) in the nail to be treated
- All drills must be operated and maintained as recommended by the manufacture
- Vacuum drills: the dust bag should be changed before use, regularly, and before it is full. Care must be taken to prevent spillage of nail dust and contamination of the body of the machine and the surrounding environment. Protective clothing, gloves and mask should be worn
- Coarse nail particles are less of a hazard, it is advised to use a low revolution course drill to reduce the nail quickly. It is the fine drill used for finishing the procedure which generates the more hazardous fine particles.

There are two types of nail drills namely vacuum-type and water-spray handpieces. Water-spray handpieces pose a hazard of aerosol organism dispersal and bacterial contamination of the water line that has significance for cross-infection within the clinical area. The hand pieces require mechanical cleaning, lubrication and sterilisation in a vacuum autoclave after each patient use. The consensus of expert opinion is that extreme caution in the use of these drills is advised.

The wearing of a mask when using a nail drill is advised (**Refer to Section C – 3 Personal Protective Clothing**).

8. Healthcare Worker's Surgery Clothing

Clean uniforms should be worn every day. Staff who are at risk of contaminating their clothes with body fluids should always change into 'home' clothes as soon as possible - preferably before leaving the work place or as soon as home is reached.

Under no circumstances should staff go out socialising in clothes that may have been in contact with body fluids.

Uniforms or work clothes should be washed as soon as possible on as hot a wash as the fabric will tolerate. Uniforms should not be mixed with other household linen. Cardigans/jumpers should be washed at least weekly but should not be worn when exposure to body fluids is expected.

Worn uniforms should be stored away from other household washing.

The majority of bacteria and viruses will not survive away from the host and would not present a high risk of infection on clothing. However, within a mass of body fluid, organisms would survive longer.

Shoes should be cleaned immediately if contaminated with body fluids, using general-purpose detergent and hot water whilst wearing disposable gloves.

9. Safe Handling of Specimens

Clinical specimens include any substance, solid or liquid, removed from the patient for the purpose of analysis.

Staff should be trained to handle specimens safely and receive regularly updated immunisation cover.

General Principles

- All specimens should be collected using **Standard Principles of Infection Control** (i.e. wearing of appropriate gloves, washing and drying of hands before and after the procedure)
- Laboratory approved containers must be labelled with patient identification details, date of specimen and specimen details. The lids should be screwed on tightly. The container with the specimen must be placed in an individual transparent plastic transport bag as soon as it has been labelled
- The transport bag must be sealed. The request form must always accompany the specimen but should not be put inside the bag with the specimen. If the specimen is a wound swab, state type of wound, where on the body, whether deep or superficial and if antibiotics have been used either topical or systemic

- Specimens must be sent to the laboratory as soon as possible after collection. This will mean planning workload carefully. Whilst awaiting transport, specimens should be stored securely, for as short a time as possible i.e. not overnight, and away from food and medicines.

10. Waste Management

Introduction

The management of Healthcare Waste has changed in line with the new Hazardous Waste Regulations (2005).

The new Department of Health document entitled: **Environment and Sustainability – Health Technical Memorandum 07-01: Safe Management of Healthcare Waste** guidance has been produced to provide a framework for best practice in waste disposal.

The guidance from the EHPU needs to be read in conjunction with HTM 07-01, and it is advisable to discuss your waste disposal requirements with your waste collection contractor.

Please note:

- All healthcare organisations should have a waste policy that provides clearly written instructions on the way waste should be managed.
- Producers of waste are advised to carry out regular audits of their waste management systems to ensure that they are complying with best practice.
- All healthcare organisations have a legal responsibility to dispose of waste safely, ensuring no harm is caused either to staff, members of the public or the environment. The healthcare organisations' responsibility begins when waste is generated and ends with its final disposal, even where properly authorised agents are used.
- It is essential that persons handling waste exercise care to prevent injury or transmission of infection to themselves or others. This is to fulfil their responsibilities under the current legislation (for list see end of this Section).

1. DEFINITIONS

Clinical Waste

Clinical waste is:

- a) any waste which consists wholly or partly of human or animal tissue, blood or other body fluids, excretions, drugs or other pharmaceutical products, soiled swabs or dressings, or syringes, needles or other sharp instruments, being waste which, unless rendered safe, may prove to be hazardous to any person coming into contact with it; and

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

(Controlled Waste Regulations 1992)

Hazardous Waste

Hazardous waste includes infectious waste, laboratory chemicals, cleaning chemicals, waste electronics, paint etc., generated in the healthcare setting.

Infectious Waste

Infectious waste is a waste that poses a known or potential risk of infection regardless of level or degree of infection. Healthcare waste generated from healthcare practices, including the community, is considered to be infectious unless a risk assessment has taken place to indicate the contrary.

Offensive/hygiene Waste

This describes waste that is non-infectious but may cause offence to those who come into contact with it. Examples are incontinence pads, plasters, nappies and 'Sanpro' waste.

Medicinal Waste

Includes expired, unused, split and contaminated pharmaceutical products, drugs, vaccines and sera that are no longer required and need to be disposed of appropriately. Medicines are divided into three groups:

- Cytotoxic and cytostatic (classified as hazardous waste)
- Pharmaceutically active but not cytotoxic and cytostatic
- Others, not pharmaceutically active and possessing no hazardous properties such as saline or glucose.

2. HANDLING OF WASTE – BEST PRACTICE

- Segregation of waste should be done through a risk assessment. It is worth noting that healthcare waste generated from healthcare or produced from healthcare workers in the community is considered to be infectious waste unless a risk assessment has taken place
- Waste should be segregated at the point of origin
- Each health and social care employer has the responsibility to ensure that contracts are in place for disposal of waste
- Personal protective clothing should be worn when handling waste
- Waste should be:
 - Correctly bagged in the appropriate coloured bag of 225 gauge to prevent spillage
 - Double bagged where:
 - the exterior of the bag is contaminated
 - the original bag is split, damaged or leaking
 - Kept in a rigid-sided holder or container with a foot-operated lid, and, so far as is reasonably practicable, out of the reach of children
 - Only filled to $\frac{3}{4}$ full
 - Securely sealed and labelled with coded tags at the point of use to identify their source.
- Waste should not :
 - Be decanted into other bags, regardless of volume
 - Be contaminated on the outside of the bag
 - Sharps must be disposed of into appropriate colour-coded sharps containers that meet BS7320/UN3291
 - Sharps container should **NEVER** be placed into a waste bag.

All staff handling waste should receive appropriate training to carry out the procedure safely.

- The bag should be removed and securely fastened at least once a day or when $\frac{3}{4}$ full, labelled with its place of origin (e.g. surgery/clinic details) and placed in the designated waste collection point
- Figure 4 summarises the colour-coding of waste streams.

Colour-coding key to segregation system

Colour	Description
 Yellow	<i>Waste which requires disposal by incineration</i> Examples are anatomical waste and laboratory specimens
 Orange	<i>Waste which may be "treated"</i> Examples are healthcare waste that poses a known or potential risk of infection such as soiled dressings, or waste generated during outbreaks of infectious diseases
 Yellow & Black	<i>Offensive/hygiene waste</i> Examples are incontinence products and other waste produced from human hygiene, medical items that do not pose risk of infection, including gloves, aprons, gowns and plaster casts
 Black	<i>Domestic (Municipal) Waste</i> Examples are general household waste which cannot be recycled

Adapted from Table from HTM07-01: Safe management of healthcare waste. Figure 4

3. DISPOSAL OF SHARPS

- A risk assessment is required to identify the correct waste stream required
- Syringes, needles, razors, ampoules and other sharps should always be placed in the correct sharps container (refer to table E2 at the end of this section). These items should never be placed in a waste bag of any kind
- Care should be taken to ensure that sharps containers are correctly assembled according to the manufacturer's instructions
- Use the appropriately-sized sharps container to prevent used sharps being stored for long periods of time
- It is the responsibility of the person who uses a sharp to dispose of it safely
- Always place sharps in the sharps container as soon as possible, at the point of use
- Sharps containers must be sealed, labelled with the point of origin and placed in the designated clinical waste collection point when $\frac{3}{4}$ full

- Sharps containers should conform to BS 7230/UN 3291
- Sharps containers should be kept in a safe location (on a flat surface, below eye level but not on the floor). This will reduce the risk of injury to patients, visitors and staff.

For chiropody and podiatry staff carrying sharps boxes in their cars:

- Sharps should only be carried by staff if there is no alternative for safe disposal
- Sharps should be placed in the sharps container at the point of use
- The container should be carried in a secure area of the car, to prevent tipping over whilst driving
- The container carried should be out of sight.

Diabetic Sharps

- All diabetic sharps should go into a sharps container (this includes lancets)
- General Practitioners/healthcare prescribers will prescribe sharps boxes on FP10 and should ensure that the patient is aware of the correct method for disposal of the filled sharps bin. Disposal points may include: returning it to the General Practice, returning it to a local clinic, or returning it to a local pharmacy.

Waste receptacle	Indicative treatment/ disposal	Contents
 Yellow with a Purple lid	Incineration	Sharps including those contaminated with cytotoxic and cytostatic medicines
 Receptacle must be UN-approved for liquids Yellow with a yellow lid	Incineration	Partially discharged sharps including those contaminated with medicines other than those that are cytotoxic and cytostatic
 Yellow with an orange lid	Incineration or alternative treatment	Fully discharged sharps that are not contaminated with cytotoxic and cytostatic medicines

Adapted from Table E2 Disposal options for sharps waste, HTM 07-01

4. DISPOSAL OF AEROSOL CANS/GLASS/BOTTLES/BROKEN CROCKERY/DRY CELL BATTERIES

- These must never be placed in any waste bag, especially one which is destined to be incinerated
- These items should always be placed in a designated cardboard box, lined with a plastic bag to render it leak-proof. The box should be labelled to indicate its contents and method of disposal.

5. DISPOSAL OF PHARMACEUTICAL WASTE – MEDICINAL WASTE

- Pharmaceutical waste includes all part-used and out-of-date medicines, cream and ointment tubes and aerosols. Other associated waste e.g. empty blister packs and alcohol wipe containers can be disposed of in the domestic waste stream (black bag)
- All pharmaceutical waste should be placed directly into the pharmaceutical waste container, or returned to the local chemist for them to place into their pharmaceutical waste container
- Ensure that the container is clearly labelled, and that all associated documentation is signed off at the time of collection.

6. STORAGE OF HAZARDOUS/NON-HAZARDOUS HEALTHCARE WASTE

Infectious waste should be removed from the point of generation as frequently as circumstances demand, and at least weekly.

Between collections, waste should be:

- Stored in correctly coded bags, with bags of each colour-code kept separate
- Situated in a centrally designated area of adequate size related to the frequency of collection
- Sited on a well-drained, impervious, hard-standing floor, which is provided with wash-down facilities
- Kept secure from unauthorised persons, entry by animals and free from infestations
- Accessible to collection vehicles.

7. MANAGEMENT OF HEALTHCARE WASTE FROM A PRIVATE HOUSEHOLD

(this does **NOT** include private residential care establishments)

Although a householder has no legal duty of care to dispose of healthcare waste in the way described above, any healthcare worker who provides care in a private household does, e.g. NHS Trust, Social services, care agency staff. This duty of care includes the safe storage of waste in the household whilst awaiting collection by the approved collection contractor. The waste should be stored in a suitable place to which children, pets, pests etc. do not have access.

This only applies where a significant amount is generated or where the healthcare practitioner gives advice regarding the infectious nature of the waste.

Infectious Waste

The table below is based on the Delphi process for identifying wound infection (European Wound Management Association 2005) and can be used to assist in the risk assessment.

Signs and Symptoms of Infection	Probability of Wound being Infected
Is there presence of erythema/cellulitis?	High
Is there presence of pus/abscess?	High
Is the wound not healing as it should, or has healing been delayed?	Medium
Is the wound inflamed and has it changed appearance?	Medium
Is the wound producing a pungent smell?	High
Is the wound producing an increased purulent exudate?	Medium
Has the wound increased in pain?	High
Has there been an increase in skin temperature?	Medium/low
Is the patient on antibiotics for an infection present in the wound?	High
Are you thinking of swabbing for infection?	Medium

However the healthcare worker may have further information that would indicate that the waste is potentially infectious. Infectious waste must be disposed of in an orange bag.

11. Infection Control Checklist

This checklist is recommended for use for routine Chiropody practice. As previously mentioned the use of disposable surgical instruments and/or instruments sterilised by a Sterile Services Department is the preferred practice.

Infection Control Checklist

At start of day or session if Clinic not used daily	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Fill the autoclave reservoir with water (sterile water for irrigation) and run the autoclave, with the chamber empty except for trays for a complete cycle							
Record the sterilisation parameters (temperature, pressure, holding time and Bowie Dick or Helix test) record readings in the autoclave log book							
Compare these with the manufacturer's recommended parameters							
Before laying out the surgery check that all clinical surfaces are clean. Wipe all surfaces with a hard surface cleaner. (Surgeries that have not been decontaminated at the end of the previous day must be cleaned and all surfaces washed with hot water and detergent then thoroughly dried.)							
Chiropodists/ Podiatrist surgical scrub hand decontamination	AM						
	PM						

Before patient treatment	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Ensure that all equipment has been sterilised							
Place only the appropriate instruments on trolley (Clean area)							
Set out all materials and other essential instruments							
Update patient's medical history							

During patient treatment	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Wash hands							
Treat all patients as potentially infectious. Maintain Standard Principles by wearing gloves, and aprons (if appropriate)							
At the end of the patient's treatment remove gloves; dispose as clinical waste, then wash hands. A new pair of gloves must be used for each patient							
Change gloves immediately if they are torn, cut or punctured							
Ensure good ventilation of the treatment area							
Handle sharps carefully and only re-sheath needles using a suitable device							

After patient treatment	Mon	Tue	Wed	Thu	Fri	Sat	Sun
Dispose of sharps via the sharps container							
Segregate waste and dispose appropriately into household, special clinical waste and pharmaceutical special waste							
Clean and inspect all instruments prior to placing in an ultrasonic cleaning machine or washer disinfector or manual clean if no mechanical method available							
After cleaning, inspect all instruments to ensure visibly clean and dry before placing in autoclave							
Sterilise the instruments in the autoclave							
Cover and store sterilised instruments							
Clean and disinfect all contaminated work surfaces							
Prepare surgery for next patient							

At the end of the session		Mon	Tue	Wed	Thur	Fri	Sat	Sun
Dispose of all clinical waste from the surgery area	AM							
	PM							
Clean all work surfaces thoroughly by washing surfaces with detergent and hot water	AM							
	PM							
Nail drill check vacuum bag for disposal	AM							
	PM							
Clean the chair	AM							
	PM							
Empty and clean ultrasonic cleaning machine and leave to dry (if used in the practice)	AM							
	PM							

At the end of the day	Mon	Tue	Wed	Thur	Fri	Sat	Sun
Drain autoclave water reservoir and chamber to remove all residual water and leave to dry. Wipe with a damp cloth the exterior surface of autoclave							

ESSEX HEALTH PROTECTION UNIT CHIROPODY & PODIATRY INFECTION CONTROL GUIDELINES

SECTION G – PODIATRIC SURGERY

Invasive podiatric surgical procedures pose a higher risk of wound infection than non-invasive procedures.

To reduce the risk of potential infection, clinicians are advised to adhere to standard principles of infection control and the National Association of Theatre Nurses 'Principle of Safe Practice in the Operating Theatre'.

The environment in which podiatric surgery procedures are carried out is important, operating theatre standard is required.

The Hospital Infection Society Working Party on Infection Control and Operating Theatres (2002) report on operating theatre ventilation found that the studies examined support the use of Ultra clean (Laminar Flow) ventilation to reduce the incidence of 'deep sepsis' after total joint replacement surgery.

However the working party's concluding recommendations highlight the need for further research. There appears to be no available research in podiatric replacement surgery. Therefore there is no definitive guidance on the recommended theatre ventilation for podiatric replacement surgery.

Discussions with clinicians with several years experience in podiatric surgery have formed a consensus of opinion that plenum (positive pressure) ventilation is sufficient.

This guidance recommends that where there is the facility to perform podiatric surgery in a theatre with laminar flow, it is the preferred practice. Where laminar flow ventilated theatres are not available the minimum standard is plenum ventilated theatre e.g. Day surgery theatres. It is further recommended that post infection surveillance, up to 30 days post surgery, is recorded and the record kept.

ESSEX HEALTH PROTECTION UNIT CHIROPODY & PODIATRY INFECTION CONTROL GUIDELINES

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Standards for the clinical environment

The following standards are recommended for clinical environments for podiatric practice in primary care:

1. The treatment room should be of adequate size for scope of practice.
2. Privacy should be assured; conversations in the room should not be easily overheard.
3. The room should be well ventilated, by natural or artificial means.
4. The room should be heated when required.
5. The room should have good general lighting, natural or artificial.
6. There should be an adjustable directional light; preferably colour corrected.
7. The flooring should be impervious, non slip with splash-back skirting capable of being cleaned and disinfected.
8. Walls and ceilings should be dry and free from cracks or visible defects.
9. The examination couch, operator chair and work station should have an intact impervious cover and be capable of being cleaned and disinfected.
10. Work surfaces should be impervious and capable of being cleaned with disinfectants.
11. There should be a designated and accessible hand washing basin with sensor or lever operated mixer taps providing hot and cold water.
12. Antiseptic hand washing solution and/or alcohol handrub should be available in wall mounted containers.
13. Liquid soap and paper towels should be available in wall-mounted containers.
14. A sharps bin container conforming to UN3291 should be accessible in the treatment room above waist height and preferably fixed to the wall.
15. Pedal operated waste bins with a yellow bag should be available for clinical and hazardous waste.
16. There should be a designated area for the decontamination of instruments, ideally in a separate room.
17. There should be two sinks (or a sink and a dedicated bowl) for the cleaning of used instruments prior to disinfection.
18. There should be secure facilities for the hanging of clothing and keeping of valuables.