ESSEX HEALTH PROTECTION UNIT

PRISON INFECTION CONTROL GUIDELINES

Issued August 2004

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ALL STAFF AND PRISONERS

SECTION A. INTRODUCTION AND CONTACTS

A1. Introduction

This document has been written as a general guide to the most common problems prison staff may encounter. The document is not intended as an exhaustive guide to infectious diseases. Most of the action required represents common sense and follows basic principles. In cases where there is still uncertainty medical advice is available from:

1. The Chief Medical Officer (the General Practitioner employed by the Prison Service) will be able to give advice for the healthcare of prisoners;

2. Staff members own General Practitioner for personal health advice;

3. If the answer is still unclear the Essex Health Protection Unit will give advice about infectious diseases. Contact numbers can be found at in the Contacts section of this publication.

It should be recognised that we are exposed to potentially harmful organisms all the time. Adults do not often become ill because they have already developed immunity. However, because infections can be passed on even though someone appears well it is important that high standards of basic hygiene are always maintained. Adults living in a residential environment are more likely to transmit infection to one another.

A2. Scope

This manual gives guidance for those working in the Prison and Young Persons Institution (YPI) environment. These guidelines are not intended as a basis for advice to the general public. Certain disease specific information sheets are available from the Essex Health Protection Unit website, www.ehpt.nhs.uk .

If any further infection control advice or follow up is required for prisoners or their families please contact a member of the Essex Health Protection Unit.

A3. Responsibility

The philosophy of this manual is to encourage responsibility by every member of staff. All should participate in the prevention and control of infection. The Prison Governor is responsible for ensuring that there are effective arrangements in place for the control of infections.

A4. Contacts

Infection Control advice can be obtained from:

Essex Health Protection Unit
8 Collingwood Road
Witham
Essex
CM8 2TT

The main office telephone number is: 01376 302282. The Consultants in Communicable Disease Control (CCDCs) and Communicable Disease Control Nurses (CDCNs) are contactable via this number. The fax number is 01376 302278.

Advice is also available on the Essex Health Protection Unit website www.ehpt.nhs.uk . 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 443355, and ask operator to bleep the on-call Public Health Person.

SECTION B. STAFF HEALTH

B1. Immunisation

Immunisation protects against serious illnesses. Modern vaccines are safe and effective, and every effort should be made to ensure that staff is protected. A risk assessment should be undertaken by the Prison Service to ensure all employees who require it are immunised against Hepatitis B. The Department of Health advises that immunisation should be available on request to all prison service staff in regular contact with prisoners. All staff should have their immunisation status established before starting work. Ideally this should be done by the Occupational Health Department.

All employees should have been fully immunised against polio, tetanus, diphtheria and tuberculosis (BCG). If they are unsure whether they are up-to-date with all their immunisations, they should consult their own GP.

All female employees of child bearing age should have had rubella or MMR vaccine before starting work.

Pregnant women should seek medical advice promptly if they come into direct contact with:

- a suspected case of rubella (German measles);
- a case of chickenpox or shingles especially if they do not have a definite history of infection themselves;
- a case of parvovirus B19 (slapped cheek syndrome);
- anyone with an undiagnosed generalised rash.

SECTION C. INFECTION, ITS CAUSES AND SPREAD

C1. 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 that causes infections in humans is *Trichophtyon 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 (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. Example: the prion causing (New) Variant Creutzfeldt-Jakob Disease.

C2. 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 insects).

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 bedpans, urinals, thermometers, oxygen masks 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.

Hands. The hands of health and social care 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 gastro-intestinal tract are ingested. When an infected person excretes these organisms faecally, 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.

SECTION D. ROUTINE PROCEDURES FOR THE CONTROL OF INFECTION

D1. Standard Principles/Universal Precautions

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 principals/universal precautions**.

Standard Principles/Universal Precautions include:

- Handwashing and skin care;
- Protective clothing;
- Safe handling of sharps (including sharps injury management);
- 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 the community 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.

D2. 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 shift or work break;
- Before and after physical contact with each client;
- After handling contaminated items such as dressings, bedpans, urinals and urine drainage bags;
- 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.

	Method	Solution	Task
1	Social	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	In high risk areas and during outbreaks
3	Surgical scrub (2 mins)	Antiseptics, e.g. chlorhexidine, povidone-iodine, thorough and careful. Dry on sterile towels	Prior to surgical and other invasive procedures. Bars of soap not recommended

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, clean and free from nail polish. Hands should be made wet by placing them under tepid running water before applying liquid soap or an antimicrobial preparation.

2. Washing and Rinsing

The hand wash solution must come 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. When decontaminating hands using an alcohol hand rub. Hands should be free from dirt and organic material. The hand rub 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.

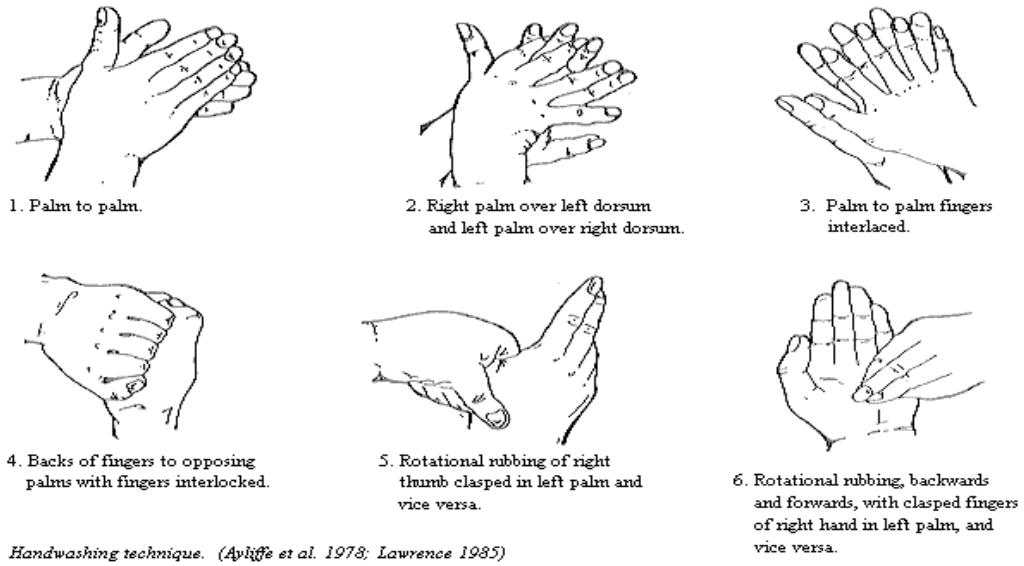
Hygienic Hand Disinfection for Outbreak Control

This can either be achieved by using antiseptic liquid soap, or by routine handwashing, followed by 5 mls of an alcohol hand rub.

Surgical Handwashing

Surgical handwashing destroys transient organisms and reduces resident flora before surgical or invasive procedures. An aqueous antiseptic solution is applied for two minutes. Preparations currently available are 4% chlorhexidine-detergent and 0.75% povidone/iodine solution-detergent.

This is required before minor surgery and invasive procedures.



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.

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 hand wash or alcohol product causes skin irritation, an occupational health team 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. A separate sink should be available for other cleaning purposes - such as cleaning 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 wash basin - make sure they are the right size.

D3. Protective Clothing

Selection of protective equipment must be based on an assessment of the risk of transmission of infection between the patient and carer.

Assessment of Risk

WHAT TO WEAR WHEN

No exposure to blood/ body fluids anticipated	Exposure to blood/body fluids anticipated, but low risk of splashing	Exposure to blood/body fluids anticipated - high risk of splashing to face
↓	↓	↓
No protective clothing	Wear gloves and a plastic apron	Wear gloves, plastic apron and eye/mouth/nose protection

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 prison officers and healthcare personnel and that conform to European Community (CE) standards must be available.

DO NOT USE powdered 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.

Gloves must be disposed of as clinical waste and hands decontaminated after the gloves have been removed.

Sensitivity to natural rubber latex must be documented and alternatives to natural rubber latex gloves must be available.

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. blue for the kitchen, yellow 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 use. 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 application. **DO NOT USE.**

Disposable Plastic Aprons

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 as clinical waste.

Face Masks and Eye Protection

Must be worn where there is a risk of blood, body fluids, secretions or excretions splashing into the face and eyes.

Respiratory Protective Equipment

For example, a particulate filter mask, must be used when clinically indicated for pulmonary tuberculosis.

D4. Safe Handling of Sharps

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 for all clinical staff involved in 'exposure prone procedures' or where regular exposure to blood/blood stained body fluids occurs.

Care should be taken to avoid accidental needlestick injury, as exposure to contaminated blood may be associated with transmission of Blood Borne Viruses.

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 exposure to bloodborne viruses. Always take extreme care when using and disposing of sharps. Avoid using sharps whenever possible.

- clinical sharps should be single use only;
- do not re-sheath a used needle - if this is necessary a safe method, i.e. 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 prior to disposal;
- place damaged sharps containers inside a larger container - lock and label prior to disposal. Do **not** place inside yellow clinical 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 E.

D5. Spillage Management

Deal with blood and body fluid spills quickly and effectively.

A 'grab bucket' containing all the relevant equipment should be readily available to deal with a spillage of body fluids.

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;
- clinical 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 in a lockable cupboard;
- absorbent powder e.g. vernagel to soak up the liquid content of the spillage.

The kit should be replenished immediately after use.

1. Hypochlorite / Sodium Dichloroisocyanurates (NaDCC) Method

- 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 as clinical waste;
- wash hands.

2. Detergent and Water Method

- 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

N.B. – For spills on carpets and upholstery with or without visible blood

- wear protective clothing;
- mop up organic matter with paper towels or disposable cloths and/or absorbent powder e.g. vernagel;
- clean area with cold water;
- clean area thoroughly with detergent and hot water;
- allow to dry;
- discard protective clothing;
- wash hands;
- ideally, once dry, go over area with a mechanical cleaner.

SECTION E. MANAGEMENT OF SHARPS INJURIES

E1. Occupational Injuries

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:

1. Encourage bleeding from the wound.
2. Wash the wound in soap and warm running water (do not scrub).
3. Cover the wound with a dressing.
4. Skin, eyes or mouth, wash in plenty of water.
5. Ensure the sharp is disposed of safely i.e. using a non-touch method into a sharps container.
6. Report the incident to immediate supervisor. An incident form should be completed as soon as the recipient of the injury is able.
7. The incident should be reported to the health department.
8. 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 below.

E2. Control Measures

Any staff working in a healthcare facility that handles sharps or clinical 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 health department to arrange vaccination without delay.

Generally staff in the prison do not perform Exposure Prone Procedures (EPPs) with the exception of the dental department.

However, all staff who do perform EPPs need to be aware of their obligations (see statements by the General Medical Council in Serious Communicable Diseases, 1997; General Dental Council in Maintaining Standards Guidance 1997; United Kingdom Central Council for Nursing, Midwifery and Health Visiting Registrar's letter 4/1994 Annex 1) i.e. to declare it if they know themselves to have been at risk of exposure to a blood borne virus infection (Hepatitis B, C or HIV).

Post-Exposure Prophylaxis For The Recipient

Those who have received an injury as defined above should seek urgent medical advice from the nearest A&E Department. Should prophylaxis for HIV be required this is best started within 60 minutes.

Testing the Source Patient

In some instances it will not be possible to identify the source patient. However, if the source is identifiable and available for testing, a blood specimen should be obtained with consent and sent to the microbiology laboratory. This can be done on an urgent basis, in consultation with the laboratory. All donors should be tested for hepatitis B and C, and HIV if appropriate. Additional advice on risk assessment can be obtained from the prison service occupational health department

Investigation of the Person Receiving the Injury

Blood should be obtained from the exposed person and stored in a secure archive.

Hepatitis B Prophylaxis

All those receiving a needlestick injury should be offered vaccination if not known to be immune.

Hepatitis C Virus

There is no post exposure prophylaxis for hepatitis C.

In the event that the source patient cannot be tested, management of the injured person should be based upon a risk assessment.

Human Immunodeficiency Virus (HIV)

- The risk of acquiring HIV from a single percutaneous exposure is <u>small</u> and on average is estimated to be 0.3%.

- The risk of acquiring HIV through mucous membranes exposure is less than 0.1%.

Studies have suggested that taking zidovidine (AZT) as soon as possible after occupational exposure may reduce the risk.

When To Consider Post-Exposure Prophylaxis (PEP)

Post exposure prophylaxis should be considered **only** when there has been exposure to blood or other high-risk body fluids **known to be** or **strongly suspected** to be infected with HIV (These fluids include: amniotic fluid, vaginal secretions, semen, human breast milk, CSF, peritoneal fluid, pericardial fluid, pleural fluid, synovial fluid, saliva in association with dentistry, unfixed organs and tissues).

"Strongly suspected" includes individuals with clinical symptoms highly suggestive of HIV disease or individuals from countries where HIV is highly prevalent who may not yet have had a blood test.

Strongly suspected does not include an injury from an unknown source, nor an individual with a single lifestyle factor e.g. intravenous drug abuser.

Post-exposure prophylaxis should **not** be considered following contact through any route with **low risk** materials e.g. urine, vomit, saliva, faeces, unless they are visibly blood stained.

If post-exposure prophylaxis is indicated it should be started **as soon as possible** after the incident and ideally **within the hour** (However Department of Health recommends it may be worth considering PEP even if 1-2 weeks have elapsed since the incident).

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

What to do after a ....

Sharps Injury

Directions for the management of needle - sticks, and cuts and penetrating wounds

Wash cuts thoroughly with soap and warm and 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 the manager immediately

Take 10 ml clotted blood from both the source of the sharp (with informed consent) and the injured person. Send to microbiology clearly identifying the source and the injured person, and mark 'Needlestick Injury

Complete an accident form

Insert your local arrangements

Tel no

Please Note

If the source is known or a high risk of having HIV the injured person should contact either Accident and Emergency or the Genito Urinary Medicine Clinic and attend if possible within the hour

Remember

Be Prepared. If you are at risk of exposure, get immunised against Hepatitis B Virus

SECTION F. FOOD HYGIENE

F1. Introduction

This guideline sets out the procedures for staff to follow for food hygiene.

F2. Legislation

All individuals who handle food should follow basic food hygiene practices to ensure contamination and subsequent disease does not occur.

All staff involved in the handling of food should be aware of the legislation relevant to food management. The main legislation is the Food Safety Act 1990 and its related regulations (General Food Hygiene Regulations (1995), The Food Safety (Temperature Control) Regulations (1995), Prison Service Order (PSO) 5000 and Prison Service Circular Instruction 9/1992.

F3. Basic Requirements for Food Safety

It is recognised that when preparing food adequate kitchen equipment, crockery and cutlery, facilities for the handling and distribution, preparation and storage of food may not be readily available.

However basic principles should be observed:

- It should be ensured that the food purchased is of good and wholesome quality and is subsequently stored, prepared, cooked and served in hygienic conditions;
- Check “use by” dates. Use food within recommended times;
- Do not eat food containing uncooked eggs. Keep eggs in the fridge;
- **Food Preparation Areas**. All food preparation surfaces should be cleaned;
- **Cross Contamination**. Care is taken not to contaminate cooked foods with raw foods. Ideally there should be a separate chopping board and utensils for each type of food (e.g. raw meat, cooked meat and raw and cooked perishables);
- **Hands and Hand-washing**. Hands **must** be washed thoroughly following any cleaning session, after toilet visits, before handling food and between handling different food types e.g. raw and cooked meats;
- **Refrigerators.** All fridges should be defrosted and cleaned regularly. Should a spillage occur or food become stale the whole interior of the fridge should be cleaned with hot water and general purpose detergent and dried thoroughly;

- **Food**. Food should be stored at the correct temperature. The fridge should be kept at 5°c or lower. The freezer should be kept at minus 18°c or below. Bacteria will grow in temperatures between 10-65°c. It is recommended that a record of daily temperature recordings is kept;
- **Storage.** Store raw meat and fish at the bottom of the fridge ensuring juices do not drip on to salads and vegetables. Raw meat and defrosting foods should be stored in covered dishes, or boxes which can catch drips. All sealed dry foods should be stored on shelves or in cupboards. Food should not be stored on the floor. Open packs of food should be stored in containers or packaging sealed to inhibit the entry of animals. Open bottles, such as squash, sauces and jams may require storage in the refrigerator. Follow manufacturer's guidelines;
- **Defrosting.** All foods should be defrosted in the fridge or microwave, not at room temperature (unless specified on the packaging). Do not re-freeze uncooked food. Cook before you freeze again;
- **Cooking**. Always follow cooking times on the labels and in cook books. Cook food thoroughly so that the temperature reaches 70°c for at least 2 minutes. Ideally food should be eaten as soon as it is cooked or prepared. Never re-heat food more than once;
- **Leftovers.** These should not be left out unnecessarily. Cold food should be covered and put directly into the fridge. Hot food should be cooled for one hour at room temperature and then placed in the fridge. All leftovers should be eaten within 2 days;
- **Crockery and Cutlery**. If a dishwashing machine is not available, hot water and general purpose detergent should be used for washing. Wherever possible, dry with disposable heavy duty paper towel. If used, tea towels are to be changed regularly and laundered in an industrial washing machine for thermal disinfection;
- **Dishcloths.** Should be disposable and changed daily or sooner when soiled.

F4. Staff and Prisoners employed in food production

Catering staff and prisoners employed in the preparation and serving of food should receive the appropriate training on food hygiene and management of food safety in all areas of the prison according to Prison Service Order (PSO) 5000 and advice from the Environmental Health Officer.

Staff and prisoners should be fit to work. All health conditions such as diarrhoea and vomiting, cuts and infected wounds should be reported to the Catering Manager prior to commencing a shift. The Catering Manager should establish the member of staff or prisoners fitness to work in consultation with the Health Department.

Individuals with;

- Diarrhoea and vomiting must not handle food until 48hrs after the return of a normal motion;

- Cuts and grazes should be cover with a blue waterproof dressing. The dressing should be changed prior to commencing the shift;

- Healthcare staff must assess infected wounds to determine the individual's fitness for work.

SECTION G. PESTS

G1. Introduction

Pests may be found in any property but with sensible precautions will not present an infection risk to prisoners and staff. There should be a contract to control rodent and insect population with a reputable Pest Control Contractor.

These include:

- **Insects**
  ants, flies, cockroaches, fleas, silverfish.

- **Rodents**
  rats and mice.

- **Birds**
  pigeons, magpies, sparrows, etc.

- **Feral cats and foxes**

Kitchen and food stores provide ideal conditions for pests. Not only do they eat the food but also they contaminate and spoil a lot more.

G2. Control Measures

Control measures should include the following:

- Stop pests getting in by fly screens, well-fitting doors, covered drains and bird netting;

- Look out for droppings, nests, chew-marks on wood or cables;

- Discard any foodstuffs or other articles affected by pests, including milk from bottles, the tops of which have been pecked by birds;

- Clean up any spillage and decaying food immediately. Carry out regular inspection and rotate any stock. Use rodent-proof containers with well-fitting lids. Store food off the ground.

HEALTHCARE UNIT

SECTION H. NOTIFICATION OF INFECTIOUS DISEASES

H1. Introduction

This guideline sets out the procedures for staff to follow in respect of communicable disease control. It includes the reporting, documentation and notification procedures.

H2. Accountability

The Governor should ensure the application of recommendations within the prison

Healthcare Managers should support clinical and support staff in the implementation of the guidelines.

Clinical and Support Staff

- All staff have an important role in the prevention and control of infection which is an integral quality issue in the care and management of patients/ prisoners and the health and safety of staff;
- All staff need to follow all guidelines and participate in their audit;
- All staff need to bring infection control issues to the attention of Senior Managers;
- All staff need to maintain a high standard of infection control as a matter of good practice.

H3. Notification Procedures

Explanatory note

Any registered medical practitioner who becomes aware or suspects that a patient (s)he is attending is suffering from a notifiable disease is required by law (Public Health Control of Disease Act 1984) to send a notification form to the local authority Proper Officer forthwith.

It is not necessary to wait for laboratory/microbiological confirmation of a diagnosis.

While laboratories may report, this does not absolve clinicians from their responsibility to do so.

Which diseases are notifiable?

List of Notifiable Diseases

Anthrax	Paratyphoid Fever
Cholera	Plague
Diphtheria	Poliomyelitis
Dysentery (Amoebic or Bacillary)	Rabies
Encephalitis	Relapsing Fever
Food Poisoning*	Rubella
Leprosy	Scarlet Fever
Leptospirosis	Smallpox
Malaria	Tuberculosis
Measles	Typhoid Fever
Meningitis (all types)	Typhus
Meningococcal Septicaemia (without meningitis)	Viral Haemorrhagic Fever
	Viral Hepatitis
Mumps	Whooping Cough
Ophthalmia Neonatorum	Yellow Fever

*** This category includes any infection which could be food or water borne e.g. campylobacter, salmonella, cryptosporidiosis, giardia.**

How quickly should I notify?

The law specifies that notification should be "forthwith" i.e. without any delay. Please send out notification forms on the same day the patient is seen and make sure they are not being "batched".

The aim of notification is to ensure public health action is taken promptly. The Essex Health Protection Unit should be telephoned on the day of diagnosis on Tel: **01376 302282** on strong clinical suspicion for **all** except:

- Isolated cases and household contacts with dysentery;
- Isolated cases and household contacts with food poisoning (we would like to be telephoned about any *E coli 0157* and Listeria);
- Chronic hepatitis B and C;
- Leptospirosis;

- Malaria;
- Ophthalmia neonatorum;
- Scarlet fever;
- Cases of tuberculosis already under the care of a chest physician.

These may be notified by post utilising the usual notification forms.

Payments

There is a small payment for each formal notification received.

Payments are made by Essex Health Protection Unit on behalf of the Essex PCTs at quarterly intervals.

It is essential that the notifying doctor write their name legibly so we know whom to pay!

Where do I obtain notification forms?

These are available on application to the Essex Health Protection Unit, who supply them on behalf of the Essex local authorities.

We would also like to know about cases of:

- Legionella;
- Suspected outbreaks of any infection;
- Even one case of scabies in a prison;
- Young persons found during screening prior to BCG to have a strongly positive skin test.

H4. Reporting and Documentation of Illness for a suspected or confirmed outbreak of infection

Recognising Outbreaks of Infection

Any suspicion of an outbreak of communicable disease in the Prison/YPI should be reported to the Essex Health Protection Unit immediately for further investigation, and management as appropriate.

The Essex Health Protection Unit should be contacted if:

- There are two or more individuals with vomiting and/or diarrhoea (amongst prisoners or staff);

- There are two or more individuals suffering from the same infectious illness;

- There is a high sickness rate amongst staff, who appear to be suffering from the same infectious disease.

If the Prison/YPI is affected (whether the member of staff is directly employed by the establishment or not) the following guidance should be followed:

- Healthcare staff should contact the Essex Health Protection Unit without delay if they suspect there may be an outbreak of infection in the prison;

- They must also inform their local Environmental Health Department**;**

- Senior management must be informed and requested to ensure adequate staffing to cope with extra demands of managing an outbreak. Staff working in the Prison/YPI should not work in other care establishments until the outbreak is declared over by the Essex Health Protection Unit;

- List all prisoners and staff affected, including age, area/unit where resident/working, onset of symptoms, symptoms suffered, duration of illness, GP and whether a sample has been taken (Copies are attached for information).

Specific Guidance for Outbreaks of Diarrhoea and/or Vomiting

- Isolate symptomatic prisoners in their own cells or own room within the healthcare unit. Their own toilet facilities, or a designated commode if en-suite facilities are not available is required;

- Environmental cleaning to be increased. Particular attention should be paid to the toilets, bathrooms, door handles, support hand rails and kitchen units. For the duration of the outbreak, environmental cleaning should be performed using detergent and hot water followed by a 1 in 1000 parts per million available chlorine releasing solution that is 0.1% hypochlorite solution, 1 part household bleach in 10 parts of water or Sodium Dichloroisocyanurate (NaDCC) e.g. Precept, Haztabs diluted as per manufacturers guidance.

- All staff handwashing areas and the rooms of symptomatic prisoners should have an antibacterial liquid dispensed soap (or an alcohol hand rub following handwashing with a regular liquid soap) for the duration of the outbreak, then normal liquid dispensed soap should be used;

- Prisoners should be encouraged to wash their hands after using the toilet and before eating;

- Staff should pay attention to all infection control practices, particularly the washing of hands and wearing protective clothing. A new pair of latex or vinyl gloves and a plastic apron should be worn for each prisoner;

- Faecal samples should be obtained from prisoners and staff if they have symptoms. The microbiology form accompanying the sample should clearly state it is 'part of an outbreak', as this will determine which specific tests are carried out in the laboratory (Samples of vomit are not required);

- It may be necessary to close the Wing to admissions until 48 hours after the last symptomatic patient has recovered. This will be decided in consultation with the Essex Health Protection Unit;

- Symptomatic staff must go off duty, a faecal sample must be taken and they must remain off work until 48 hours symptom free;

- Prisoners should only be transferred or discharged 48 hours after their last symptom and with the full consent of anyone who may be required to care for them in the community

- Soiled/infected linen must be transferred to the laundry in a sealed soluble bag within a white or blue laundry bag.

Please photocopy the proforma (Pages 34 - 38) in the event of an outbreak of Diarrhoea & Vomiting or Scabies.

RECORD OF OUTBREAK OF DIARRHOEA AND/OR VOMITING (Prisoners)

Name of Prison / Wing: _____ **Record started by: _____** **Date: _____**

Address _____ **Reported to: EHPU / EHO**

_____ **Total number of residents in Prison: _____**

Tel: _____ **Total number of residents affected: _____**

Name of Prisoner	Age	Area/Unit where resident	Onset of symptoms	Symptoms				Duration of symptoms	GP		Faecal Sample	
				D	V	D&V	Other		Name	Seen	Sent	Result

RECORD OF OUTBREAK OF DIARRHOEA AND/OR VOMITING (Staff)

Name of Prison / Wing: _____ **Record started by: _____** **Date: _____**

Address **_____** **Reported to: EHPU / EHO**

_____ **Total number of staff in Prison: _____**

Tel: **_____** **Total number of staff affected: _____**

Name of Staff	Age	Area/Unit where resident	Onset of symptoms	Symptoms				Duration of symptoms	GP		Faecal Sample	
				D	V	D&V	Other		Name	Date Seen	Sent	Result

RECORD OF OUTBREAK OF SCABIES (Prisoners)

Name of Prison / Wing: _____ **Record started by: _____** **Date: _____**

Address _____ **Reported to: EHPU / EHO**

_____ **Total number of residents in Prison: _____**

Tel: _____ **Total number of residents affected: _____**

Name of Prisoner	Age	Area/Unit where resident	Date of onset of symptoms	Diagnosed by		Treatment Date	
				GP	EHPU	1st	2nd

RECORD OF OUTBREAK OF SCABIES (Staff)

Name of prison / Wing: _____ **Record started by: _____** **Date:_____**

Address _____ **Reported to: EHPU / EHO**

_____ **Total number of members of staff in Prison: _____**

Tel: _____ **Total number of members of staff affected: _____**

Name of Staff Member	Age	Area/Unit where resident	Date of onset of symptoms	Diagnosed by		Treatment Date	
				GP	EHPU	1st	2nd

SECTION I. NEW ENTRANTS INCLUDING TRANSFERS-IN FROM OTHER CUSTODIAL SITES

I1. New Arrival Screening

On arrival **all** new entrant or transfer-in prisoners should have a screening interview. However, as prisoners may be transferred from other units at any time of the night and at short notice this may not always to possible. It is important to avoid a situation where the arriving prisoner with an undiagnosed infectious disease, such as unrecognised tuberculosis infection, is placed in a cell with other prisoners. Therefore on arrival, whatever time of the day or night, the healthcare staff should make an enquiry about any symptoms a prisoner may have which indicate an infectious risk to others such as:

- History and appearance of being unwell with a recent/long-term cough, that may or may not be productive. If productive, is it blood stained?;
- History of recent weight loss;
- Fever;
- Malaise;
- Diarrhoea and vomiting;
- Skin Rash.

In addition to the above advice please consult Section H – Tuberculosis

Once the prisoner has been admitted a member of healthcare staff should undertake a screening interview. Immunisation checks should form part of the routine health screening undertaken when prisoners are accepted into the prison. This should include a check that the following are up-to-date:

- Polio*;
- Diphtheria;
- Tetanus;
- BCG (confirmed by presence of scar on deltoid region of the left arm);
- MMR
- Meningitis C (if under 24 years).

* Oral Polio vaccine will shortly be replaced by inactivated polio in a combination vaccine.

Where no history of vaccination exists, or is not known, adults should be offered all the above.

In addition prisoners are at particular risk of blood borne virus infections. They should therefore also be offered:

- Hepatitis B immunisation. For prisoners who are likely to be transferred from the prison before the course of hepatitis vaccination is completed and who are 18 years of age and over, the 'rapid' accelerated course (0.1.3 weeks) should be considered. Prisoners who will be undertaking tasks that may expose them to blood or blood-stained body fluids, i.e. when employed as prison cleaners should have their antibody response checked following the initial course of injections.

Chest x-ray should be considered if the prisoner has suspicious symptoms such as a history of a cough lasting longer than three weeks, persistent fever and /or weight loss.

If the HM Prison Service First Reception Health Screen form is used the following additional information listed below is required:

- Record present signs and symptoms of ill health. Be alert to physical signs e.g. a persistent cough the prisoner may not report such symptoms as a symptom of ill health;

- Immunisation history to include Diphtheria, MMR, Hepatitis B and if prisoner is 24years or under, Meningitis C.

I2. New Arrival Questionnaire

Full Name: _____ **Date of Birth**: _____

Last Place of Residence: _____

_____

GP Name: _____

GP Address: _____

_____

GP Telephone No: _____

Has consent been gained to contact GP? **Yes / No**

BACKGROUND HISTORY

Has prisoner had contact with the homeless population or intravenous drug user? **Yes / No**

If yes – When, Duration and Type of Contact e.g. sharing kit, sexual contact

_____

_____

_____

CURRENT HEALTH

Does the prisoner have any of the following symptoms at the moment or in the past week?

Fever	**Yes / No**	**Recent Weight Loss**	**Yes / No**
Diarrhoea	**Yes / No**	**Vomitting**	**Yes / No**
Skin Rash	**Yes / No**	**Unexplained Malaise**	**Yes / No**
Cough	**Yes / No**	**If yes is it dry and/or productive**	**Yes / No**

If productive is it blood stained **Yes / No**

If yes to any of the above, what action is taken?

Isolation / Referral to GP / Referral to Hospital

Previous blood tests for:

Hepatitis B **Yes / No** **Date: _____**

Hepatitis C **Yes / No** **Date: _____**

HIV **Yes / No** **Date: _____**

IMMUNISATION HISTORY

Has the prisoner had the following immunisation:

Polio	**Yes / No**	**Tetanus**	**Yes / No**
Diphtheria	**Yes / No**	**MMR**	**Yes / No**
BCG	**Yes / No**	**Hepatitis B**	**Yes / No**
Meningitis C (if under 24 years of age)			**Yes / No**

SECTION J. MANAGEMENT OF INFECTIOUS DISEASES

J1. Introduction

This document comprises the series of information sheets produced by the Essex Health Protection Unit.

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

The information sheets can be photocopied and passed to members of the public.

In addition, there is extended text on Meningococcal Disease, MRSA and Tuberculosis.

J2. Information Sheets

Information sheets on the following can be found on the Essex Health Protection Unit website www.ehpt.nhs.uk under fact sheets.

Biting Bugs
Blood borne viruses
Chickenpox
Chlamydia
Conjunctivitis
Cryptosporidiosis
Diarrhoea and vomiting
Glandular Fever
Group A Streptococci
Hand, Foot and Mouth
Headlice
Hepatitis A
Hepatitis B
Hepatitis C
Herpes
Immunisation – General Information
Impetigo
Influenza
Legionella
Leptospirosis
Listeria
Lyme Disease
Measles
Meningitis
MMR Information for Parents
Molluscum Contagiosum
MRSA
Mumps
Parvovirus (Slapped Cheek)
Pertussis (Whooping Cough)
Polio
Rashes in childhood
Ringworm
Rubella(German Measles)
Scabies
Shingles
Threadworms
Toxoplasmosis
Tuberculosis
Verrucas

Prisoners exposure to chickenpox/shingles and Parvovirus in pregnancy please refer to obstetrician.

J3. Meningococcal and Hib Disease

Medical advice should be sought immediately for prisoners showing symptoms suggestive of meningococcal disease. Usually the admitting hospital will notify the Essex Health Protection Unit (EHPU) or Public Health doctor on call at the time of the case.

Please advise the EHPU of prisoners diagnosed with meningococcal disease. There may be anxiety amongst other prisoners and prison officers and there may be requests for prophylaxis. Prophylaxis will be arranged for contacts identified by the EHPU. Giving antibiotics inappropriately may do more harm than good as it can result in eliminating carriage of non-pathogenic organisms, such as *Neisseria lactamica,* which boost immunity. It also undermines efforts to give consistent advice to the public.

The working definition of a 'contact' according to national guidelines is:

> ***Those who have had close personal and prolonged contact with a confirmed or probable case during the seven days before the onset of illness.***

This includes:

- Household or household equivalent contacts:
  - Those sleeping in the same household/overnight stays;
  - Close social contacts;
  - Intimate 'kissing contacts' i.e. girlfriend/boyfriends;
  - It does not include casual contacts such as:
    - cheek kissing;
    - attendance at birthday parties and other social events;
    - presence in same office or classroom;
    - sharing cans of drink or cigarettes.
- Healthcare Workers (HCWs) who have been in contact during resuscitation. In general this applies to staff who:
  - have inserted an endotracheal tube;
  - gave mouth to mouth resuscitation.

Numbers of helplines for further information:

- Meningitis Trust – Telephone: 01453 768000
  24 hour helpline: 0845 6000 800
  Webside: www.meningitis-trust.org.uk

- Meningitis Research Foundation – Telephone: 01454 281811
  24 hour helpline: 080 8800 3344
  Website: www.meningitis.org

J4. Management of MRSA

Please refer to the information sheet on the EHPU website.

What Precautions do you need to take?

No special precautions are necessary.

Standard/universal precautions (especially handwashing) are all that are necessary.

However MRSA does act as an opportunity to remind us of the good practices that should **already** be in place.

Prisoners are **not** barrier nursed. Ideally they are in a single room, or share a room with someone who does not have an open wound or invasive device e.g. urinary catheter, intravenous device.

They can mix with other prisoners socially and at mealtimes.

Laundry or china and cutlery do **not** need to be handled separately. Again, as long as good practices are already in place, there is no need for additional precautions.

Waste should be handled as with any other prisoner - if the patient is known to have an infection, **and** that infection is producing a discharge, then arrangements should be made for a clinical waste collection.

Protocol for Treatment

Do not swab unless there is clinical evidence to do so.

The state of the wound should be assessed and documented by a nurse trained in wound assessment:

- size, depth;
- condition of wound;
- does it look infected (is it red, hot, inflamed or has a discharge)?

The wound should be monitored to assess if it is healing:

- if the wound is healing - do not swab;
- if the wound does not appear to be healing, re-swab after 4 weeks and at 4 weekly intervals thereafter until there is evidence of healing, to check whether antibiotic treatment is indicated.

Suggested Treatment Protocol for Patients with MRSA Infected Wounds.

- Clean infected site with iodine based solution (check contraindications in BNF) for 4 weeks;
- If there is no improvement, re-screen for culture and sensitivities;
- Use the appropriate topical application;
- If there is no improvement, re-screen for culture and sensitivities.

Consider systemic antibiotic therapy

Further Advice

If further advice is required please contact the Communicable Disease Control Nurse (CDCN).

J5. Guidelines on the Management Tuberculosis in Custodial Institutions

The risk of spread of TB in a prison once a case occurs is high. It is important to ensure that the diagnosis of TB is considered early in prisoners and that appropriate steps are taken to investigate and manage cases, as well as to institute contact tracing.

Tuberculosis is a disease caused by a bacterium, *Mycobacterium tuberculosis*. The infection may attack any part of the body, but it is the infection of the lung that poses a risk of transmission to others when the patient is coughing up bacteria that can be seen on sputum microscopy. Contacts of other forms of tuberculosis are followed up to identify any potential source(s).

It is the management of TB of the lungs (pulmonary), which is the focus of these guidelines.

In some people with *M tuberculosis* the immune system is able to control infection and active disease does not occur. This is sometimes referred to as dormant TB. When the immune system does not do this infection spreads and disease develops.

The bacteria are transmitted from one person to another by coughing and air dispersal. A person is considered infectious when bacteria can be seen in

their sputum prior to receiving anti-tuberculous therapy and for a minimum of two weeks after starting and tolerating appropriate antibiotic therapy. This time will be longer when drug resistant bacteria are present.

New Arrival Screening

On arrival **all** new entrant or transfer-in prisoners should have a screening interview - refer to Section G. On arrival whatever time of the day or night the healthcare staff should make an enquiry as to any suspicious symptoms that the prisoner may have such as

- History and appearance of being unwell with a recent/long-term of cough, that may or may not be productive;
- History of recent weight loss;
- Fever;
- Malaise.

If a prisoner is a recent arrival (i.e. within last 12 months) from a high risk country for TB, they should have been screened in accordance with national guidelines for new entrant screening. If this has not been done, arrangements for this screening should be made.

A history of Human Immunodeficiency Virus (HIV) infection, previous drug use or immunosuppression may also increase an individual's risk of TB. If there is any suggestion that the prisoner may have suspicious symptoms they should be placed in a single room pending a more thorough medical assessment.

Once the prisoner has been admitted a member of healthcare staff should undertake a screening interview with the prisoner. This should include:

- Inquiry about past Bacillus Calmette-Guerin (BCG) vaccination, confirmed by presence of scar on deltoid region of left arm;
- Tuberculin Heaf test when there is no history of vaccination;
- Chest x-ray should be considered if the prisoner has suspicious symptoms such as a history of a cough lasting longer than three weeks, persistent fever and /or weight loss;
- Prisoners under the age of 35 years who have not been previously immunised should be encouraged to be Heaf tested and assessed for BCG vaccination.

To reduce the risk of transmission of infectious bacteria, prisoners that may be considered infectious because they are presenting with suspicious symptoms should be placed in a single room within the healthcare centre until

radiological (chest x-ray) and bacteriological (sputum specimen) investigations have been completed or symptoms have ceased.

It is imperative that the Consultant in Communicable Disease Control (CDCC) is advised immediately of any prisoner that is suspected of having a tuberculosis infection. This is necessary to implement urgent control and contact notification measures.

Resident prisoners

All prison staff should be aware of the early symptoms of tuberculosis and be constantly vigilant to identify prisoners who may be developing these symptoms. Resident prisoners may become unwell, develop a persistent cough that may or may not be productive, experience fever/ night sweats and show signs of weight loss. The prisoner **must** be moved to a single cell or to a single room in the healthcare centre until radiological (chest x-ray) and bacteriological (sputum specimen) investigations have been completed.

The CCDC should be advised of a prisoner undergoing investigations for TB.

Management of known or suspected cases

If a prisoner is diagnosed with pulmonary TB immediate consultation should be made with the Physicians in Chest Medicine at the Hospital and the CCDC to discuss where the patient should be isolated and treated. It may be necessary to transfer the prisoner to hospital for initial treatment. The prison staff should be familiar with the security arrangements required and make the appropriate arrangements for this scenario before it occurs.

In the unlikely event that it becomes necessary to manage a prisoner with clinical symptoms of tuberculosis in a single room within the healthcare unit the following rules should apply:

- The door of the room should be kept closed;

- The prisoner should receive training to ensure that (s)he coughs into tissues or covers the mouth fully when tissues are not available. Used tissues should be placed immediately into the clinical waste bag;

- The prisoner with sputum smear positive must wear High Efficiency Particulate Air (HEPA) mask whenever there is another person in the room. The person entering the room should also wear a mask. Masks should be changed at least hourly or sooner if moisture has penetrated through the mask;

- Only prison staff that are immune to or have been vaccinated against TB should come in contact with the prisoner;

- Standard isolation precautions must be adhered to when staff enter the isolation room e.g. washing of hands prior to donning of protective clothing of apron and gloves;

- When direct exposure to respiratory secretions is unavoidable e.g. during coughing or whilst giving prolonged care of prisoner, staff should wear a HEPA mask;

- All protective clothing should be removed and disposed of in the clinical waste bin before leaving the room;

- Hands must be washed, dried thoroughly then an alcohol hand rub applied;

- Waste such as protective clothing and tissues must be disposed off as clinical waste;

- Crockery and cutlery must be decontaminated in a dishwasher, no other special precautions are necessary.

Prisoners who are suspected of Multi-drug resistant TB (MDR-TB) must be transferred to a hospital, which has negatively pressured isolation rooms with full engineering controls.

Notification

The medical officer diagnosing the case of TB on microbiological or clinical evidence must notify the CCDC by telephone of the case and complete a notification form and send it to the Proper Officer (i.e. CCDC) of the EHPU.

Treatment

The Chest Physician at the Hospital will advise on the appropriate treatment course and how it is to be supervised. This will be in liaison with the CCDC. Treatment is a combination of antibiotic chemotherapy that requires to be taken for at least six months. The Chest Physicians at the Hospital will determine the treatment of the index case. Risk assessment of the index case's infectivity will determine whether admission to hospital is required to commence treatment. The Chest Physician in consultation with the Head of Healthcare will make a risk assessment of the index case infectivity.

The prison healthcare staff must supervise the anti-tuberculosis chemotherapy. The prisoner must be seen to put each tablet in their mouth and to swallow. Check the mouth afterwards to ensure that the tablets have been swallowed. Record and sign to confirm this on the prisoner's treatment chart. When the prisoner is considered not to be infectious by the chest clinic (s)he may return to the wing. Contact with prisoners or staff with severely immunocompromised conditions such as Human Immunodeficency Virus (HIV) should be avoided.

Contacts

The EHPU or Public Health TB nurse will co-ordinate the notification and follow up of contacts whether inside or outside the prison in this district or elsewhere. This includes screening of contacts that could be prison staff.

Visitors

Visitors who have not had close contact with the prisoner prior to diagnosis should be dissuaded from visiting until the end of the infectious period. Those who visit should comply with the isolation precautions.

Management of Staff

For their own protection and that of the prisoners all newly appointed staff and long term voluntary workers should undergo an occupational health assessment which includes a symptom check and review of BCG status. Staff who missed pre-employment screening should also be screened.

Transfer of prisoners undergoing treatment for pulmonary TB

It is recommended that the prisoner remain in the Prison/YPI until treatment has been completed. However, if it becomes necessary that a prisoner undergoing treatment has to be transferred to another HM Prison, the Prison Medical Officer in consultation with the Physician in Chest Medicine and the CCDC must established that the prisoner is fit and safe for transfer. The receiving prison should be advised in advance of the prisoner's condition and continuing care.

Release of prisoner under treatment for TB

The prisoner due for release from their custodial sentence should not be released until they have been seen and an assessment made to establish that they are fit and non-infectious by the Prison Medical Officer. This should be done in consultation with the Physician in Chest Medicine and the CCDC. The Prison Medical Officer should keep records of prisoners with tuberculosis and the Principal Medical Officer informed of all cases.

Arrangements should be made for prisoners who are likely to be 'homeless' to be contactable. It may be necessary to arrange hostel accommodation until chemotherapy has been completed.

The following professionals in the proposed area of residence must be notified:

- General Practitioner (GP). To provide continuing care and prescriptions for anti- tuberculosis treatment;

- Consultant in Communicable Disease Control (CCDC);

- Physician in Chest Medicine at local hospital.

The prisoner should be supplied with a minimum of two weeks anti-tuberculosis treatment.

Released prisoners for deportation aboard should be treated and be non-infectious prior to departure. The International Division of the Department of Health should be notified.

SECTION K. CLINICAL PRACTICE

K1. Introduction

This section is aimed at healthcare practice that is performed within the healthcare unit. When clinical practice has to occur within the wings, healthcare staff should ensure that the guidelines in this section are followed as much as possible. The Clinical Practices included in the section are**:**

- Aseptic Technique
- Barrier Nursing
- Decontamination of Equipment
- Linen in clinical areas
- Management of Non Infectious and Infectious Deceased Prisoners
- Safe Handling of Specimens
- Vaccine Control
- Waste Management

K2. 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.

An aseptic technique should also be adopted when undertaking the following procedures:

- Dressing wounds;
- Insertion and Removal of sutures or clips.

Forceps have traditionally been used for the procedure. However, forceps are cumbersome to use and do not prevent the transfer of bacteria from the wound to the hands.

The procedure can be performed more easily holding sterile swabs in the latex 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 field will be created by the sterile towel contained within the dressing pack.

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.

Management of Chronic Wounds

If dressings are removed by soaking, a plastic impermeable liner/bag should be placed in the bucket/bowl before filling with water.

After the wound has been washed, the water should be disposed of in a sluice or a sink, which is separate from the handwash sink.

The plastic liner should be disposed of and the bath or bowl should be thoroughly cleaned with detergent solution and then dried to ensure that pathogens are removed.

This process should be undertaken after each separate patient episode.

K3. Care Of Patients With Known Infectious Diseases – Barrier Nursing

There are times when it is necessary for an infected prisoner to be cared for in a single occupancy room. Standard/universal precautions must be performed. Persons on entering and leaving the room must disinfect their hands. Wear the appropriate personal protective clothing when assisting the prisoner with personal care e.g. gloves, aprons and in some circumstances masks. All personal protective clothing to be disposed of as clinical waste.

DISEASES

More detailed information about diseases can be found in Section H of these guidelines.

DISEASE	HOW LONG THE DISEASE REMAINS INFECTIOUS
Beta-haemolytic streptococci Group A	The patient remains infectious until 48 hours after the of appropriate antibiotic therapy.
Chickenpox	The patient remains infectious until vesicles are dry (usually 5-7 days).
Clostridium difficile	The patient remains infectious until diarrhoea has ceased for 48 hours.
Erysipelas Bacterial infection of skin caused by *Streptococcus Pyogenes*	The patient remains infectious until 24hr after the start of appropriate treatment.
Gastro-enteritis	The patient remains infectious until symptom free for 48 hours.
Hepatitis A	The patient remains infectious until 7 days after the onset of jaundice.
Hepatitis B + C **IF** bleeding externally	The patient remains infectious **whilst** the increased risk of exposure to body fluids remains.
HIV **IF** bleeding externally	The patient remains infectious **whilst** the increased risk of exposure to body fluids remains.
Impetigo	The patient remains infectious until 24 hours after the start of appropriate antibiotic treatment.
Meningococcal Meningitis	The patient remains infectious for 24 hours after start of appropriate antibiotic therapy.
Mumps	The patient remains infectious for 9 days after onset of swelling.

Rubella	The patient remains infectious for 4 days from onset of rash. Non immune pregnant staff should not nurse these patients.
Scabies	The patient remains infectious until successful treatment has been completed.
Shigella	The patient remains infectious until diarrhoea has ceased for 48 hours.
Shingles	Infectious by direct contact with rash; those without a history of chickenpox should be kept away from patients with shingles.
Pulmonary Tuberculosis (Open)	The patient remains infectious for the first two weeks of appropriate antibiotic therapy.

Precautions should also be taken with patients suffering from the following symptoms, until a diagnosis is confirmed:

- Diarrhoea of unexplained origin;
- Pyrexia of unknown origin;
- Excessive bleeding;
- Rashes of unknown aetiology;
- Excessive vomiting.

PROCEDURES

Standard Universal Precautions should be strictly adhered to at all times (See Section D).

Once a diagnosis has been made, the prisoner must have their infectious disease carefully explained, the mode of spread and its significance if any, for the prisoner's condition.

Hand Hygiene

Alcohol hand rub should be used after normal handwashing, or an antibacterial liquid soap should be used to wash hands.

Disposal of Potentially Infected Items

Contaminated dressings and all disposable items should be disposed of as clinical waste.

Urinals and Bedpans

To reduce the risk of transmission of infectious organisms urinals and bedpans with their contents should be cleaned mechanically in a bedpan washer or macerator. When this is not possible the contents should be emptied down the toilet and flushed away. Care should be taken when cleaning the urinal or bedpan to avoid splashing. A plastic apron, non-sterile latex or vinyl gloves and a plastic visor should be worn. The item should be cleaned with General Purpose Detergent and hot water prior to disinfection for 10 minutes with a 1 in 1000 parts per million available chlorine releasing solution that is 0.1% hypochlorite solution, 1 part household bleach in 10 parts of water or Sodium Dichloroisocyanurate (NaDCC) e.g. Precept, Haztabs diluted as per manufacturers guidance. The bedpan/urinal should be dried and stored inverted.

Linen

Infected and/or soiled linen should be placed in a soluble bag within another linen bag. The bag must be closed and transferred to the laundry room. The soluble bag is placed directly into the industrial washing machine and rinsed on a sluice cycle prior to washing. Should be washed on as hot a wash as the fabric will tolerate, as promptly as possible. Please refer to Linen in Clinical Areas.

Crockery and Cutlery

Disposable items are not required. General purpose detergent (GPD) and water as hot as can be tolerated is sufficient, to be washed in the usual kitchen sink or dishwasher.

Transporting Prisoners

Prisoners who require barrier nursing should only be sent to other department/premises (i.e. another prison, hospital Out-patient or In-patient departments) when it is essential. Staff involved in the direct care of the prisoner should be informed of the risk, so that relevant control measures can be implemented.

Deceased Prisoners

If the prisoner had, or was suspected of having, an infectious disease when they died, the body is likely to need to be placed in a “body bag”. Body bags are available from the stores centre from where all other care equipment is requested.

The mortuary/funeral director staff should be informed of the potential infectious risk.

K4. Decontamination Of Equipment

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

Certain items are classified as single-use only. These items must never be re-used. If in doubt, refer to the manufacturer's recommendations.

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 could 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 definitions are adapted from the Department of Health, 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. All items entering the vagina or cervix must be single use. The use of reusable items should only be considered when decontamination takes place in a Sterile Services Department.

Risk Assessment for Decontamination of Equipment

Risk	**Application of Item**	**Minimum Standard**
Low	• in contact with healthy skin or • not in contact with patient e.g. furniture, mattresses, surfaces, commodes	Clean
Intermediate	• in contact with intact 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. Items used in the vagina or cervix must be sterilised**	Clean and disinfect, or single use
High	• in contact with a break in the skin or mucous membrane or • for introduction into sterile body areas for example uterine sounds, instruments used for surgical/ operative procedures	Clean and sterilise, or single use

Adapted from Medical Devices Agency, Part 2 (1996) now MHRA

The decontamination of surgical instruments within the prison is not recommended. All surgical instruments that are required for general procedures such are clip insertion, forceps, scissors and vaginal speculum should be single use.

A-Z Of Equipment And The Decontamination Method

EQUIPMENT	CLEANING METHOD
Babies feeding bottles and teats	Disposables preferred. Non-disposables - dummies and feeding equipment (see below).
Baby changing mats	Cover with paper towel and change between each baby. Clean at end of session or when the mat is soiled, with General Purpose Detergent (GPD) and water.
Baths	To be cleaned between users. With gloved hand, clean bath surface, grab rails and taps with hot water, GPD and paper towels. Rinse.
Bath water additives	There are no antiseptic solutions that should be added to the bath. When antiseptic bathing is prescribed, the agent should be applied directly to the skin instead of soap.
Bedpans (non-disposable)	Wearing disposable plastic apron and gloves, flush away contents and clean thoroughly using paper towels, warm water and GPD. Rinse, dry and store inverted. Disinfection using sodium hypochlorite solution 100ppm (1 part bleach to 10 parts water) will be required if the patient has enteric symptoms.
Bedpan washers/ macerators	These should be used, cleaned and serviced according to manufacturer's guidance.
Beds, backrests, bed cradles and mattresses	To be cleaned between users with hot water and GPD. If soiling is evident then immediately clean as above and then wipe over with a 0.1% chlorine-releasing compound (1000 ppm sodium dichloroisocyanurate e.g. Precept, Haztabs or 1000 ppm sodium hypochlorite e.g. bleach).
Bidets	To be cleaned after each use. Clean surface of pan and taps with hot water and GPD, using disposable paper towels and gloved hand and then flush.
Bowls - patient washing	Clean between each use with hot water and GPD, using disposal paper towels. Rinse and store dry.

Commode armrests and seats	If no soiling is evident, clean with hot water and GPD. Dry using paper disposable towels. If soiling is evident, or there is an outbreak of diarrhoea, or the previous user had a loose stool, clean with hot water and GPD. Wipe over with a 0.1% chlorine-releasing compound (1000 ppm sodium dichloroisocyanurate e.g. Precept, Haztabs or 1000 ppm sodium hypochlorite e.g. bleach). **Use separate wipes for armrests and seats.**
Dummies and Feeding Equipment	Single use preferred. Communal sterilising tanks must <u>not</u> be used. Single person use sterilising tanks should be cleaned thoroughly with hot water and GPD, and rinsed before use. Ensure total immersion of equipment in Milton (or similar) solution. Tank must be cleaned daily and fresh solution prepared. Electric steam autoclave should be used as per manufacturer's guidance.
Ear pieces from auroscopes	Clean thoroughly with GPD and hot water, using thin brushes to clean inside. Rinse and dry thoroughly before storage.
Ear syringe 'Propulse'	Before first use of the day and after each patient use – clean ear pieces in GPD and warm water solution. Fill tank with sodium hypochlorite solution (Milton) 125ppm. Run this solution through the tubing ensuring the absence of any air bubbles. Allow at least 10 minutes in order for disinfection to take place. Empty tank and tubing, rinse with sterile water for irrigation, dry with disposable, non-shredding paper towel and try to ensure that tubing is as dry as possible. New purchases of ear pieces are now single use.
ECG Equipment - Electrodes - Straps - Machine	 - Use disposable. - Wash well with hot water. - Wipe over with damp cloth, keep covered when not in us.
Examination couches	Surface must be in good repair, clean with hot water and GPD at start and finish of each session or if becomes soiled. Cover with disposable paper roll and change between each patient use.
Gynaecological examinations Vaginal specula	**All reusable items entering the vagina must be adequately decontaminated between use. This can only be achieved by a heat method of sterilisation, not by disinfectant or boiling water.** Use single-use wherever possible. For re-usable, either return to CSSD, or pre-clean and sterilise in a downward replacement autoclave.

Trial size caps and IUCD instruments	Use single-use wherever possible. Following Department of Health instructions, all articles inserted into the vagina should be sterilised.
Hoists and slings	After each patient use, clean thoroughly using hot water and GPD and store dry. Single patient use slings are also available.
Nail brushes	Single use only.
Nebulisers	Use disposable where possible. Patients should have their own nebuliser, which should be washed with hot water and GPD between use. Store dry. On completion of treatment, dispose of nebuliser. Nebulisers which are used in the surgery or loaned to patients must be thoroughly decontaminated between patient uses. All tubing, mask, and filters should be disposed of after use, and replaced with new, disposable components before the item is used by another patient. Staff must maintain a register of use (giving patient details and date of use) for each nebuliser including a record of the decontamination process detailing the date, time, cleaning method used, items replaced, and the signature and name of the member of staff responsible.
Suction equipment	Disposable suction units are recommended. After each use (or 24 hours if in frequent use) the disposable components should be disposed of as clinical waste. Non-disposable bottles - ensuring appropriate staff protection, empty the contents into the toilet, rinse with cold water. Clean using hot water and GPD, store dry. Tubing should be disposable. Filters - These should be replaced when wet and at appropriate intervals in keeping with the Manufacturer's instructions.
Thermometers	Use disposable sheaths on wards for single patient use: <u>After **each** use, wash with GPD and water and store dry</u>. In clinics use disposable sheaths. Clean with GPD and cold water and store dry.

Trolleys (dressing trolleys)	Clean top and all surfaces with hot water and GPD daily. Dry thoroughly. If trolley becomes contaminated between patient use, wash with GPD and hot water again.
Urinals (non-disposable)	The use of disposable urinals is advised, as manual cleaning is both difficult and unsatisfactory. Non-disposable urinals - wearing disposable plastic apron and gloves, empty urine into the toilet, clean thoroughly using paper towels, hot water and GPD. Rinse, dry and store inverted. Ideally each patient should have a designated urinal.
Urine jugs (non disposable)	The use of disposable jugs is advised. Wearing gloves and apron, a separate clean jug should be used for each urine collection. Empty the contents into the toilet and rinse. Clean thoroughly with hot water and GPD using disposable paper towels. Rinse and dry. Store inverted.
Weighing scales	Line with disposable paper towel. Wash bowl of scales with GPD and hot water if they become soiled before next baby is weighed and at the end of each clinic session.
Work surfaces	**General Cleaning -** Use GPD and hot water. **Contaminated Surfaces -** Clean with GPD and hot water and then wipe with 0.1% chlorine-releasing compound (1000 ppm sodium dichloroisocyanurate e.g. Precept, Haztabs or 1000 ppm sodium hypochlorite e.g. bleach).

Environmental Cleaning

This section is applicable to all areas, residential and healthcare within the prison. 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 and by good design features in buildings, fittings and fixtures.

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:

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

- Carpets are not recommended in treatment rooms or areas where clinical 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;
- Keep mops and buckets clean, dry and store inverted;
- Mop head should be removable for frequent laundering, or single use if this is not possible;
- Provide single use, non-shedding cloths or paper roll for cleaning;
- Keep equipment and materials used for general cleaning separate from those used for cleaning up body fluids;
- Colour coded cleaning equipment, such as mop heads, gloves and cloths for toilets, kitchens and clinical areas. Use different colours for each area;
- Use general purpose detergent for all environmental cleaning - follow the manufacturer's instructions.

DOMESTIC	**CLEANING**
Bucket (plastic)	Empty contents down toilet or slop hopper. Rinse with 0.1% chlorine-releasing compound (1000 ppm sodium dichloroisocyanurate e.g. Precept, Haztabs or 1000 ppm sodium hypochlorite e.g. bleach) and dry.
Mop (wet)	Rinse, dry and store head up after use; heat disinfect in washing machine and dry thoroughly weekly.
Mop (dry)	Vacuum after each use.
Lavatory brushes	Rinse in flushing water and store dry.
Suggested colour coding of cleaning equipment	Red: toilet bathroom/ sluice. Blue: kitchen/ pantry. Yellow: all other areas.
Floors	Dust control - dry mop. Wet cleaning - wet mop, wash with hot water and GPD. If known contamination - follow with 0.1% chlorine-releasing compound (1000 ppm sodium dichloroisocyanurate e.g. Precept, Haztabs or 1000 ppm sodium hypochlorite e.g. bleach).
Furniture and fittings	Damp dust with hot water and detergent. If known contamination - follow with 0.1% chlorine-releasing compound (1000 ppm sodium dichloroisocyanurate e.g. Precept, Haztabs or 1000 ppm sodium hypochlorite e.g. bleach).

Lavatory seat and handle	If soiling is evident, or there is an outbreak of diarrhoea, or the previous user had a loose stool, clean with hot water and GPD followed by 0.1% chlorine-releasing compound (1000 ppm sodium dichloroisocyanurate e.g. Precept, Haztabs or 1000 ppm sodium hypochlorite e.g. bleach).
Showers	Should be clean and maintained. Launder curtains 3 monthly. Shower heads should be de-scaled when necessary.
Walls and ceilings	Not an infection problem. When visibly soiled use hot water and detergent. Splashes of blood, urine or known contaminated material should be cleaned promptly with 0.1% chlorine-releasing compound (1000 ppm sodium dichloroisocyanurate e.g. Precept, Haztabs or 1000 ppm sodium hypochlorite e.g. bleach).

Decontamination 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 biohazard label to the item. Complete the clearance certificate and advise staff on protective measures.

Documentation

A completed clearance certificate must be attached to the equipment prior to work being carried out. A suggested letter is:

From: _____

To: _____

Make and description of equipment item: _____

_____

Model/Serial/Batch Number: _____

_____

Other distinguishing marks: _____

_____

- This equipment/item has not been in contact with blood or other body fluids. It has been cleaned in preparation for inspection, servicing or repair.

- This equipment has been decontaminated. The method used was

_____

- This equipment could not be decontaminated. The nature of risk, and safety precautions to be adopted are

  _____

Signed: _____ Date: _____

Position: _____ Address: _____

K5. Linen In Clinical Area

IN THE HEALTHCARE UNIT

It is strongly recommended that linen is kept to a minimum.

Couches

- The surface of all couches must be of a washable impermeable fabric;
- The condition of the surface of all couches should be regularly checked (minimum once monthly) to ensure the fabric remains intact;
- The couch should be covered with disposable paper towel, which must be changed between patients;
- If the paper towel becomes soiled and the soiling seeps through to the surface of the couch, the couch must be decontaminated before use by another patient. If contaminated with blood use a sodium dichloroisocyanurate compound (e.g. Presept, Sanichlor);
- If the contaminate is another body fluid, general purpose detergent and warm water is sufficient to decontaminate the surface of the couch;
- Pillows are not considered essential as all couches should have head-tilts. However, if pillows are used, they should be sealed within a plastic impermeable cover. Disposable pillow cases should then be used. These should be discarded once weekly or more frequently if they become soiled. If standard pillow cases are used, they must be washed weekly or more frequently if they become soiled;
- Blankets/sheets are not considered essential. For modesty, a length of disposable paper towel should be used to cover exposed parts of the body.

Curtains

- At windows, it is recommended that washable blinds are used;
- Around couches, curtains should only be used if required to protect patient's modesty;
- There should be an environmental cleaning schedule, which should include blinds and bed curtains to be washed twice yearly**.**

Terry Towels

- There is no place for terry towels in healthcare. Hands should be dried on paper towels;

- If used to protect the patient whilst performing ear syringing (instead of the correctly designed receptacle), each patient should be provided with a clean towel (or disposable paper towel) that is placed in the laundry immediately after use**.**

When Linen is Used

- All linen must be changed at least weekly, or more frequently if soiled;
- Place linen soiled with body fluids in a leak-proof, water soluble bag and arrange prompt laundering;
- Used linen must be laundered at 71^0C for 3 minutes or 65^0C for 10 minutes.

SENDING LAUNDRY TO A COMMERCIAL LAUNDRY

If a prisoner's laundry is sent to a commercial laundry, by collection or delivery, it should be checked whether they have any special instructions, e.g. a colour coding system.

Usually laundry bags are colour coded in the following way:

- Used linen - a white bag
- Foul linen - a sealed clear soluble bag within a white or blue bag
- Infected linen - a sealed clear soluble bag within a red bag.

Note:

If the foul or infected linen is excessively wet it may be necessary to place the soluble bag within a clear polythene/plastic bag within a blue or red bag.

STAFF UNIFORMS OR WORK CLOTHES

Staff who are at risk of contaminating their clothes by 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. Cardigans/jumpers should be washed at least weekly.

Uniforms should not be washed with new-born baby, elderly persons or immuno-compromised persons clothing.

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 - disposable gloves should be worn.

K6. Management Of Non Infectious And Infectious Deceased Prisoners

This guideline sets out the procedures for staff to follow for the management of non infectious and infectious deceased patients.

MANAGEMENT OF DECEASED PATIENTS

The deceased should be treated with the due respect and dignity appropriate to their religious and cultural background. Last Offices, which vary according to religious and cultural practices, may be compromised by the need for specific measures if an infectious disease was associated with the death, or co-existed at the time of death. Any problems should be discussed with the Consultant in Communicable Disease Control who may wish to consult the appropriate priest or religious authority.

Most bodies are not infectious, however through the natural process of decomposition the body may become a source of potential infection whether previously infected or not, therefore sensible precautions should be taken routinely.

- Disposable gloves and aprons should be worn when washing and preparing the body.
- Washing the body with soap and water is adequate.
- Dressings, drainage tubes, etc. should be removed unless the death occurred within 24 hours of an operation or was unexpected in which cases a post-mortem is likely.
- Clean dressings should be applied to any wounds.
- Profusely leaking orifices may be packed with gauze or cotton wool.

ADDITIONAL LAST OFFICES FOR A KNOWN INFECTED BODY

The body of a person who has been suffering from an infectious disease may remain infectious to those who handle it.

Body bags are available from either the undertaker or the stores centre where all other care equipment is requested from.

The mortuary/funeral director staff should be informed of the potential infectious risk.

If the deceased has died from one of the following infectious diseases listed below, the body will need to be placed in a cadaver bag.

- Anthrax
- Brucellosis
- Chickenpox/shingles
- Cholera
- Diphtheria
- Food Poisoning (if faeces is present)
- Hepatitis B
- Hepatitis C
- HIV/AIDS
- Leprosy
- Meningococcal Septicaemia (with or without meningitis)
- Plague
- Acute poliomyelitis
- Psittacosis
- Pyrexia of unknown origin
- Q fever
- Rabies
- Tuberculosis (infective)
- Viral Haemorrhagic fever
- Yellow fever

or if there are large quantities of body fluids present.

A 'Notification of Death' label and a 'Danger of Infection' label should be attached discreetly to the outside of the bag. Neither label should state the diagnosis which is confidential information. It is the responsibility of the certifying clinician to ensure the funeral directors have sufficient information about the level of risk of infection and stating the type of precautions required.

Once the body is sealed in the body bag, protective clothing will no longer be necessary.

Relatives and friends who wish to view the body should do so as soon after death as possible. The bag can be opened by a member of staff wearing gloves and plastic apron, but relatives should be told that there is a risk of infection and should be advised to refrain from kissing or hugging the body. In some rare instances the bag could not be opened e.g. if the patient suffered from Anthrax, Plague, Rabies and Viral Haemorrhagic Fever.

Further advice on specific infectious diseases can be found in the Infection Control Guidelines for Funeral Directors, or advice can be sought from the Essex Health Protection Unit.

K7. 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 Universal Precautions** (i.e. wearing of appropriate gloves, disposable plastic apron and washing and drying of hands before and after the procedure);
- When a patient is asked to provide a specimen, they should be provided with the appropriate container and given instructions as to how to collect the specimen;
- 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 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 work load 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;
- If specimens have to be stored awaiting transport for more than 4 hours, specimens should be stored in an air tight container in a designated fridge - **not a food fridge;**
- Sputum specimens must be received by the laboratory within 24 hours.

NB. In the event of a suspected outbreak of infection it is important for specimens to be collected promptly and for the request form to be marked as 'Possible Outbreak'. Stool specimens should be sent as soon as an outbreak is suspected e.g. the second loose stool.

K8. Vaccine Control

Vaccines are biological products that need to be stored under controlled conditions to maintain their potency and efficacy.

STORAGE

- On arrival, vaccines should be checked to ensure the cold chain has not been broken and for signs of damage or leakage;
- A nominated person, who has received specific training in this practice, should make sure vaccines are correctly stored and handled by staff;
- Store vaccines in a fridge designed for this purpose;
- Ensure strict stock rotation with new vaccines being placed behind older stock;
- Discard expired vaccines safely;
- Prevent overstocking and allow air to circulate around all stock;
- Do not store in fridge door or in separate drawers in the bottom of the fridge as air cannot circulate;
- Ensure systems are in place to prevent accidental disconnection of the electricity;
- Do not store items other than vaccines in the same fridge;
- Defrost and clean regularly, storing vaccines in an alternative fridge during the procedure.

TEMPERATURE CONTROL

- Vaccines must be kept between 2^0C and 8^0C during transportation and delivery, and must not directly touch ice packs;
- Store vaccine between 2^0C and 8^0C and not below freezing. Monitor fridge temperature using a minimum/maximum thermometer, and record results daily.

ADMINISTRATION

- Use reconstituted vaccine according to the manufacturer's recommendations, usually within one to four hours;
- Remove vaccines from the fridge for the minimum length of time before administration - discard any opened in error;
- Do not allow oral polio vaccine (OPV) to remain at room temperature awaiting or following an immunisation as this may decrease the potency of the vaccine;

- Do not prepare vaccine in advance of immunisation as this increases the risk of administering the wrong vaccine and may affect the temperature. Prepare each vaccine for the individual who is to receive it;
- You do not have to routinely cleanse skin unless it is visibly dirty. If alcohol or other antiseptics are used, they must be completely dry otherwise the live vaccines may be inactivated;
- Multi-dose vials may be used for one session only - discard any remaining at the end of the session;
- Dispose by heat inactivation or incineration.

K9. Waste Management

RESPONSIBILITY

The Prison has a legal responsibility to dispose of waste safely, ensuring no harm is caused either to staff, members of the public or the environment. This 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).

DEFINITION OF CLINICAL WASTE

Clinical waste is:

> *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*
>
> *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)

Clinical waste is categorised by the Health and Safety Executive as follows:

Group A

- Soiled surgical dressings, swabs and all other contaminated waste from treatment areas;
- Materials other than re-usable linen from cases of infectious disease;
- All human tissue from hospitals or laboratories, and all related swabs and dressings.

Group B

- Discarded syringes, needles, cartridges, broken glass and any other contaminated disposable sharp instrument or items.

Group C

- Microbiological cultures and potentially infected waste from Pathology Department, Laboratories, post-mortem rooms and other Clinical or Research Laboratories.

Group D

- Certain pharmaceutical and chemical wastes (*those falling within the definition of clinical waste)*. Special care should be taken with any waste that contains mercury or its compounds. Mercury should be recovered whenever possible. In particular, laboratories should remove mercury from aqueous solutions, specimens and the like before these are discharged to sewers.

Group E

- Items used to dispose of urine, faeces and other bodily secretions or excretions not found in Group A. This is to include used disposable bedpans or bedpan liners, incontinence pads, stoma bags and urine containers.

SEGREGATION OF WASTE

The key to the safe disposal of waste is for all staff to conform to the system of segregation shown in the table below. This system enables clear identification of the different types of waste encountered and indicates the disposal procedures that apply to each category.

TYPE OF WASTE	RECEPTACLE
Clinical Waste	Yellow Plastic Bags (225 gauge)
Sharps - Needles, Blades etc	BS 7320/UN 3291 Approved Sharps Container
General (domestic type) Waste	Black Plastic Bags
Glass and Aerosol Cans	Plastic bag lined cardboard boxes that are clearly labelled *'***Glass and aerosol cans: not to be incinerated'**

HANDLING OF WASTE

- Waste should be segregated at the point of origin.
- Personal protective clothing should be worn when handling waste.
- Clinical waste should be:
  - correctly bagged in yellow bags 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 ¾ full;
  - securely sealed and labelled with coded tags at the point of use to identify their source.

- Clinical waste should not be:
  - decanted into other bags, regardless of volume;
  - contaminated on the outside;
  - re-used;
  - Sharps must be disposed of into approved sharps containers that meet BS 7320/UN 3291;
  - Sharps container should **NEVER** be placed into a yellow clinical waste bag.

DISPOSAL OF WASTE

Clinical waste should be placed in a yellow bag (minimum gauge 225mm).

The bag should be removed and securely fastened at least once a day or when ¾ full, labelled with its place of origin (e.g. prison details) and placed in the designated clinical waste collection point.

Disposal of sharps

Fully discharged syringes, needles, razors, ampoules and other sharps should always be placed in a sharps container. 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.

Sharps containers must be sealed, labelled with the point of origin and placed in the designated clinical waste collection point when 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.

Diabetic Sharps

All diabetic sharps should go into a sharps container (this includes lancets).

Disposal of Aerosol Cans/Glass/Bottles/Broken Crockery/Dry Cell Batteries

These must never be placed in any waste bag, especially a yellow clinical waste bag 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.

Disposal of Pharmaceutical Waste - Special 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.

When ¾ full, the container must be sealed, labelled to identify its source with contact details and placed in the designated collection point.

It must be ensured the container is clearly labelled, and that all associated documentation is signed off at the time of collection.

STORAGE OF CLINICAL WASTE

Clinical waste should be removed from 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 washdown facilities;
- kept secure from unauthorised persons, entry by animals and free from infestations;
- accessible to collection vehicles.

MANAGEMENT OF CLINICAL WASTE IN PRISON

The above guidance should be followed in full.

The Prison is responsible for ensuring that contracts are in place to collect clinical waste from their premises. They are also responsible for monitoring the performance of their staff and waste contractors.

CURRENT LEGISLATION

- Health & Safety at Work etc Act 1974
- Control of Pollution Act 1974
- Collection and Disposal of Waste Regulations 1988
- Control of Pollution (Amendment) Act 1989
- Environmental Protection Act 1990
- Environmental Protection (Duty of Care) Regulations 1991
- Controlled Waste Regulations 1992
- The Special Waste Regulations 1996
- The Safe Disposal of Clinical Waste 1999
- Healthcare Waste Management and Minimisation 2000

DENTAL UNIT

SECTION L. DECONTAMINATION OF INSTRUMENTS AND EQUIPMENT USED IN THE DENTAL SURGERY

L1. Introduction

This section refers specifically to issues within the dental unit however dental healthcare workers should also refer to the whole of these guidelines in order to negate the risks of infection.

The aim of decontaminating equipment is to prevent potentially pathogenic organisms reaching a susceptible host in sufficient numbers to cause infection. The 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 Liabilty '*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.

Certain items are classified as single-use only. These items must never be re-used. If in doubt, refer to the manufacturer's recommendations.

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. When purchasing re-usable equipment obtain written instruction on the process of decontamination from the manufacturer.

The following definition of terms are adapted from the Department of Health, 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’.

L2. 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. For most routine procedures where the procedure is minimally invasive, items used in the mouth must be single use or sterilised between each use.

Risk Assessment for Decontamination of Equipment

Low Risk – Items that are in contact with healthy skin or not in contact with the patient, e.g. furniture, requires cleaning.

Intermediate Risk – Items as above but which have been contaminated with body fluids require cleaning followed by disinfection, e.g. bibs, contaminated work surfaces, or use disposable single use items.

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 items.

L3. 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 blooded stained body substances should be rinsed with cold water prior to thorough cleaning with detergent and warm water - maximum temperature 35^0C - 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 a designated washing sink, which is deep enough to completely immerse the items to be cleaned. Scrubbing can generate aerosols, which 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. After cleaning items must be rinsed in a designated rinse sink.

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-shredding cloths rather than re-usable cloths. Do **not** store brushes in disinfectant solutions.

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

Ultra sonic cleaning baths:

- use a detergent solution as recommended by the manufacturer;
- empty at least twice daily before the solution becomes heavily contaminated depending on work load;
- empty, clean and dry at the end of the session/day;
- staff must record the results of periodic testing in accordance with HTM2030 and manufacturer's instructions;
- service frequently - include checking the power output of the transducer;
- 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: Compatibility of all materials and items to be processed should be established by reference to the manufacturer's instructions. For example, plastics and other similar materials, which absorb the ultrasonic energy are not successfully cleaned by this method. Cannulated instruments must be flushed with the cleaning solution in addition to ultrasonication. Dental hand pieces require to be held by specific furniture in washer disinfectors

L4. Disinfection Methods

Disinfection methods apply to handwashing, skin preparation, equipment and specific items such as dental impressions. 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	• wide range of bacterial, virucidal, sporicidal and fungicidal activity • rapid action • non-toxic in low concentrations • can be used in food preparation • cheap	• 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	**can be used on surfaces and for body fluid spills**
Sodium Dichloroisocyanurates (NaDCC) e.g. Presept, Haz-Tab, Sanichlor	• slightly more resistant to inactivation by organic matter • slightly less corrosive • more convenient • long shelf-life	• as above	• as above

Alcohol 70% e.g. isopropanol	• good bactericidal, fungicidal and virucidal activity • rapid action • leaves surfaces dry • non-corrosive	• non-sporicidal • flammable • does not penetrate organic matter • requires evaporation time	• can be used on surfaces, or for skin and hand decontamination
Chlorhexidine e.g. hibiscrub, chlorhexidine wound cleaning sachets	• most useful as disinfectants for skin • good fungicidal activity • low toxicity and irritancy	• limited activity against viruses • no activity against bacterial spores • inactivated by organic matter	• For skin and hand decontamination

Dental impressions must be rinsed in cold water then left to soak in freshly made disinfecting solution that is recommended by the manufacturer of the impression material. Disinfectants should not be sprayed onto the surfaces of the impression. This practice poses an inhalation risk to the healthcare worker and does not ensure complete coverage of the surface of the impression. Once disinfection has been completed, the impression is ready to package for delivery to the dental laboratory.

L5. Sterilisation Methods

Sterile instruments can be obtained by:

- **Purchasing pre-sterilised single use items**

  This avoids the need for re-sterilisation and is a practical and safe method. The items must be stored using a stock rotation system.

- **Using a Sterile Services 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 Prison 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 autoclave/vacuum steam autoclave. The owner and user of the autoclave is responsible for the process. In the event of an investigation to establish that sterilisation of an instrument has occurred. The user and owner will be required to produce evidence of a robust method of sterilisation.

- It is important to use the correct autoclave for the task required. Displacement autoclaves are appropriate for unwrapped, solid instruments. Wrapped instruments and instruments with lumen e.g. hand pieces should be sterilised in a vacuum autoclave, check with manufacturer which model is correct for the instruments to be processed.

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

L6. Sterilisation of Instruments – Responsibilities

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 for 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 of 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 yearly, quarterly, weekly and daily 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 these units from service.

L7. Installation and Validation

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

Validation is a documented procedure for obtaining, recording and interpreting data required to show that a process will consistently comply with predetermined specifications. The process of validation consists of performance qualification. 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 autoclaves 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.

L8. Performance Testing

Daily Testing

The owner/user is responsible for daily testing. These tests are designed to show that the operating cycle functions are correctly shown by the values of the cycle variables indicated and recorded by the instruments fitted to the autoclave.

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.). In addition, vacuum autoclaves require a steam penetration indicator i.e. Bowie Dick Test. Check with the manufacturer the correct test for the autoclave.
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).

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

A suitably qualified person should conduct these tests 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 logbook pages and Daily/Weekly test sheets are available in MDA (2002) Benchtop Steam Sterilzers – Guidance on Purchase, Operation and Maintenance. MDA DB 2002(06).

In the event of a malfunction notify the engineer at once.

L9. Technical Aspects and Safety Considerations

1. Steam sterilisation is dependant 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 manufacturers may recommend purified) within the chamber to produce steam at the required pressure and temperature, with air being passively displaced (non vacuum) or actively displaced (vacuum) from the chamber by steam.

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.

L10. Use Of Bench-Top Steam Autoclaves

British Standard 3970

Autoclaves vary in sophistication, and it is essential that the displacement bench-top autoclave is to an acceptable standard, such as BS 3970/prEN 13060:2002.

Maintenance

Regular maintenance is advised to ensure the monitoring equipment is functioning correctly (refer to previous pages).

Temperatures and Pressures

Each autoclave should include temperature and pressure indicating equipment, a cycle stage indicator, and a fault and cycle complete indicator. Temperatures and pressures achieved should be observed each time it is used, and documented at least once for each day that it is used (refer to previous pages). Retain records for 11 years.

Solutions

Only use sterile, distilled, de-ionised water or water for irrigation in autoclaves per manufacturer’s guidance. Reservoir should be emptied and cleaned as per manufacturer’s guidance.

Protective Clothing

The use of protective clothing is recommended when handling or dealing with blood and/or body fluids. As these instruments will have been contaminated with blood and body fluids, and whilst the action of cleaning such instruments may give rise to splashing with these fluids, disposable latex gloves, disposable aprons and eye protection should be worn.

Pre-cleaning

The physical cleaning of instruments is a pre-requisite to sterilisation, as this will ensure all surfaces are free of debris and able to be completely sterilised. Hot soapy water is recognised as the most thorough and cost-effective means for physical cleaning. A better alternative is an ultrasonic cleaner or washer disinfector.

Scrubbing Brushes

Whilst the use of scrubbing brushes is generally not advocated, it may prove impossible to effectively clean instruments without them. Therefore if they are used it is suggested they are either single-use or they are themselves sterilised after use.

Inspection

Prior to 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.

Lubrication

Mechanical maintenance systems are recommended for the lubrication of handpiece prior to sterilisation. Some hinged instruments require lubrication. Check with the manufacturer that the lubricant is suitable for autoclave sterilisation.

Loading the Machine

When loading instruments into the autoclave, ensure they are dry and not touching. Leave hinged instruments open. Do not overload machine.

Use of vacuum autoclave

There are two types of benchtop vacuum autoclave, type B for porous loads and type S for loads specified by the manufacturer. Consult the manufacturer for the correct autoclave for the purpose required.

Vacuum autoclaves are required for the sterilisation of wrapped instruments and instruments with lumens such as trochars and dental handpieces. Unwrapped instruments can also be sterilised in Vacuum autoclaves.

Indicator strips show that an item has passed through a sterilisation process.

Unwrapped Instruments

It is advised to use a displacement steam autoclave, for use with <u>unwrapped</u> instruments.

It is essential that instruments to be sterilised are unwrapped (unless a specific porous load autoclave is used). If instruments are wrapped prior to sterilisation in the bench-top displacement steam autoclave, there is no guarantee that the instruments inside the wrapping will be sterilised (Hollow-lumen items will not be effectively sterilised in a displacement autoclave). It is equally important to ensure that the steam can reach all surfaces of the instruments, i.e. they do not overlap or touch when loaded into the autoclave.

Use of Instruments

Instruments that are required to be sterile at the point of use should be used immediately and taken directly from the autoclave after sterilisation (or up to 3 hours after the cycle is finished when the door remains shut), 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.

L11. Disinfection of Dental Unit Waterlines

The water supply within the unit must be fitted with anti-retraction valves. Water must be ran through the water lines for 2-3 minutes at the beginning of each session and for 20 -30 seconds between each patient.

The water bottle within the unit must be cleaned and then disinfected with a chlorine based disinfectant as recommended by the manufacturer. The water bottle must be filled at the beginning of each day/session with sterile water from an unopened bottle of sterile water. Open bottles of sterile water must be used within 24 hours if the contents are not used the water must be discarded. The ceramic filters to be changed as recommended by the manufacturer.

The decontamination of instruments prior to repair, please refer to Section K.

SECTION M. REFERENCES

Decontamination

Babb J., (1994) Methods of Cleaning and Disinfection. British Journal of Theatre Nursing 3(10) Jan 12-29.

Bassett WH (1992) Clay's Handbook of Environmental Health. 16th Edition. London.

BDA (2003) advice sheet Infection Control in Dentistry A12, London

DoH HSG(93)26 Decontamination of Equipment Prior to Inspection, Servicing or Repair. London:DoH 1993a

MDA (2002) Benchtop Steam Sterilzers – Guidance on Purchase, Operation and Maintenance. MDA DB 2002(06).

NHS Estates (1994) Health Technical Memorandum 2010. London

NHS Estates(2001) A protocol for the local decontamination of surgical instruments. London

PHLS (1993) Chemical Disinfection in Hospitals. London.

Food Hygiene

General Food Hygiene Regulations and The Food Safety (Temperature Control) Regulations including the Food Safety Act 1990, (1995),

Prison Service Order (PSO) 5000

Prison Service Circular Instruction 9/1992.

Handwashing

Gould et al 2000. *Improving hand hygiene in community health settings*. Journal of Clinical Nursing 9-95-102

ICNA (1999) Guidelines for Hand Hygiene. London.

Health and Safety

Health and Safety Commission (1974). Health and Safety at Work Act. HMSO. London.

Health and Safety Executive (1994). Control of Substances Hazardous to Health Regulations. HMSO. London.

Infection Control

Ayliffe G, Fraise A, Geddes A, Mitchell K, (2000) Control of Hospital Infection – A Practical Handbook. Fourth edition. London

British Dental Association (2003) Infection Control in Dentistry A12

Hawker J, Begg N, Blair I, Reintjes R, Weinberg J (2001) Communicable Disease Control Handbook. London.

Lawrence, J., May, D., (2003) Infection Control in the Community. Churchill Livingstone. London.

McCulloch, J. (2000) Infection Control - Science, management and practice. London.

MEERS P, McPherson M, SEDGWICK J (1997) Infection Control in Healthcare. 2nd edition. Thomes Cheltenham.

NATIONAL INSTITUTE FOR CLINICAL EXCELLENCE (2003) Infection Control – Prevention of healthcare-associated infection in primary and community care.

Pritchard, A.P., Mallet, J. (Eds) (1992). The Royal Marsden Hospital Manual and Clinical Nursing Procedures, Blackwell, London

Shorman HA, Nabaa LA, Coulter WA, Pankhurst CL, Lynch E, (2002) Management of Dental Unit Water Lines, Dental Update2002, 29: 292-298, July/August 2002.

Wilson J. (2000) Infection Control in Clinical Practice. Bailliere Tindall London

Infectious Diseases

British Society for Antimicrobial Chemotherapy (1995) Guidelines on the control of methicillin-resistant Staphylococcus aureus in the community. Journal of Hospital Infection, 31, 1-12.

BTS (2000) Control and prevention of tuberculosis in the United Kingdom. Code of Practice 2000. Thorax 2000; 55: 887-901.

Chin J., (2000) Control of Communicable Diseases Manual. 17th Edition. Washington

DoH (1998) Guidance for Clinical Healthcare Workers: Protection against infection with blood-borne viruses. London.

DoH (2000) HIV Post-Exposure Prophylaxis: Guidance from the UK Chief Medical Officers' Expert Advisory Group on AIDs. London

DoH (2000) Recommendations for the prevention and control of Tuberculosis at local level.

Greenwood D, Slack R, Peutherer J. (1992) Medical Microbiology a guide to Microbial Infections: Pathogenesis, Immunity, Laboratory Diagnosis and Control.14th edition. Churchill Livingstone, London

Healing TD, Hoffman PN, young SEJ, (1995). The Infection Hazards of Human Cadavers. Communicable Disease Report. Vol5:No5.

PHLS (1995) Control of meningococcal disease: guidance for consultants in communicable disease control. CDR Review Vol. 5, Number 13, 8 December 1995.

Ramsey, M.E. (1999) Guidance on the investigation and management of occupational exposure to hepatitis C. Communicable Disease and Public Health. Vol. 2. No. 4. 258-262.

RCN (2000) Methicillin Resistant Staphylococcus Aureus (MRSA) -Guidance for Nurses. London.

Laundry

NHS Executive (1995). Hospital Laundry Arrangements for Used and Infected Linen HSG(95)18.

Protective Clothing

ICNA (1999) Glove Usage Guidelines. London.

ICNA (2002) A Comprehensive Glove Choice. London

ICNA (2002) Protective Clothing – Principles and Guidance

Public Health

DoE (1990) Environmental Protection Act 1990. HMSO. London.

DoH(1961) Public Health Act 1961. HMSO. London.

DoH (1988) The Public Health (Infectious Diseases) Regulations 1988. HMSO. London

Sharps

ICNA (2003) Reducing Sharps Injury – Prevention and risk management. London

Single-use

MDA (2000) Single-use Medical Devices: Implications and Consequences of Reuse. London.

Waste

HSC (1999) Safe Disposal of Clinical Waste. London

IWM (2000) Healthcare Waste Management and Minimisation. London

Phillips G (1999) Microbiological Aspects of Clinical Waste. Journal of Hospital Infection 41:1-6.

Immunisation

Immunisation against Infectious Disease 1996:

http://www.doh.gov.uk/greenbook/index.htm

HM Prison service recommendation DDL (96)2.