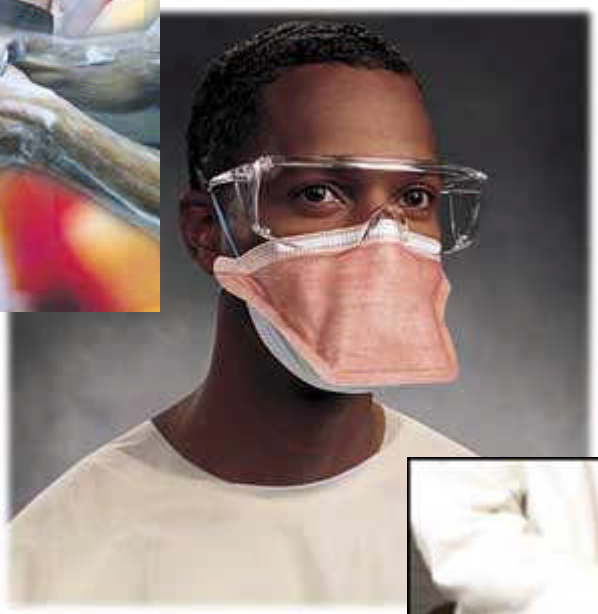
infection**control**indentistry



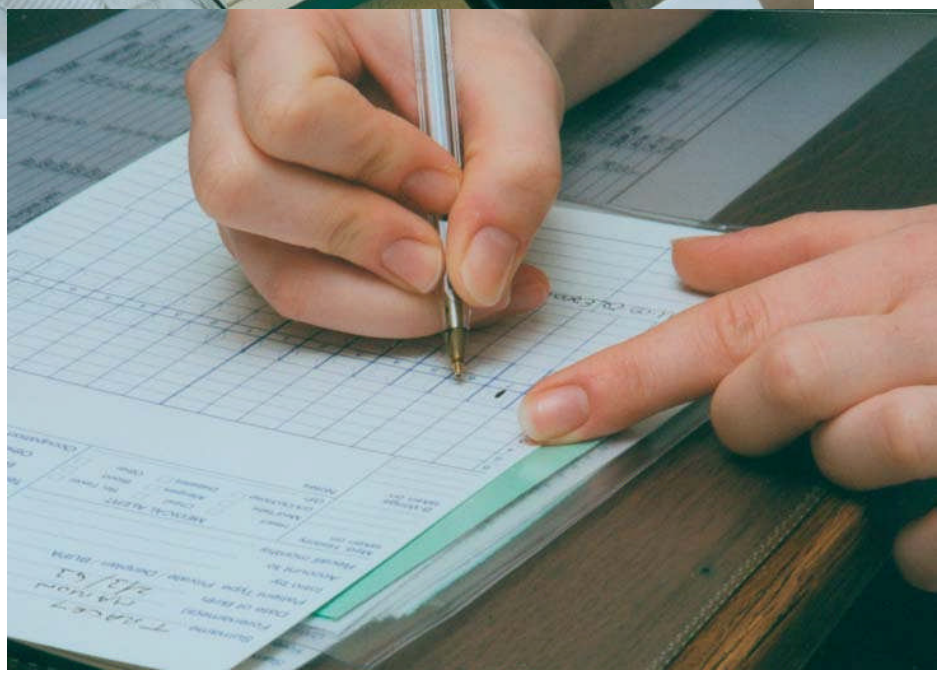
Contents

Infection control checklist

Sources

Useful website addresses for information

Introduction



Infection control in health care continues to be the subject of intensive research and debate.

Implementing safe and realistic infection control procedures requires the full compliance of the whole dental team. These procedures should be regularly monitored during clinical sessions and discussed at practice meetings. The individual practitioner must ensure that all members of the dental team understand and practice these procedures routinely.

Every practice must have a written infection control policy, which is tailored to the routines of the individual practice and regularly updated. The policy should be kept readily available so that staff can refer to it when necessary.

Routine procedures

A thorough medical history should be obtained for all patients at the first visit and updated regularly. Medical history questionnaires alongside direct questioning and discussion between the dentist and
the patient are recommended. Discussions should be conducted in an environment that permits the disclosure of sensitive personal information. The medical history information should be retained as part of the patient's dental records.

The medical history and examination may not identify asymptomatic carriers of infectious disease and universal precautions must be adopted. This means that the same infection control procedures must be used for all patients.

All dentists have a duty of care to their patients to ensure adequate infection control procedures are followed.
Failure to employ adequate methods of cross-infection control would almost certainly render a dentist liable to a charge of serious professional misconduct.

Patient perception

As a result of frequent media coverage, the public is now far more aware of the need for dentists to practice good infection control. Displaying an infection control statement may be appropriate in your practice to help allay patient anxiety and gain their confidence. It may encourage them to ask questions, so never be too busy to give an answer. Ensure all the

members of your practice staff are confident and competent to answer patients' queries or know who to refer to when necessary.

Acceptance of patients

Whilst a health professional has the right to accept or refuse to treat a patient, it is important that the dental profession accepts the responsibility of providing dental treatment to all members of the community. Dental clinicians have a general obligation to provide care to those in need and this should extend to infected patients who should be offered the same high standard of care available to any other patient.

Those with human immunodeficiency viruses (HIV), who are otherwise well, and carriers of the hepatitis viruses may be treated routinely in a primary care setting (general dental practice, community dental service, for example). The evidence indicates that, in the absence of an inoculation injury, the risk of infection to a dental health care worker during the dental treatment of HIV-infected individuals is negligible. HIV infected individuals need a high standard of dental care when they are asymptomatic to minimize dental problems. If they subsequently develop Acquired Immune Deficiency Syndrome (AIDS) it may be appropriate for them to be referred for specialist advice and care.

It is unethical to refuse dental care to those patients with a potentially infectious disease on the grounds that it could expose the dental clinician to personal risk. It is also illogical as many undiagnosed carriers of infectious diseases pass undetected through practices and clinics every day. If patients are refused treatment because they are known carriers of an infectious disease, they may not report their conditions honestly or abandon seeking treatment; both results are unacceptable. Those who reveal that they are infected are providing privileged information.

The infected dental health care worker

All health care workers have an overriding ethical and legal duty to protect the health and safety of their patients and those who carry out exposure-prone procedures should be immune to or non-infectious for hepatitis B. A dental clinician who believes he or she may be infected with a blood borne virus or other infection has an ethical responsibility to obtain medical advice, including any necessary testing. If a clinician is found to be infected, further medical advice and counseling must be sought. Changes to clinical practice may be required and may include ceasing or restricting practice, the exclusion of exposure-prone

procedures or other modifications. An infected clinician must not rely on his/her own assessment of the possible risks to their patients. Failure to obtain appropriate advice or act upon the advice given would almost certainly lead to a charge of serious professional misconduct.

Exposure-prone procedures are those invasive procedures where there is a risk that injury to the worker may result in exposure of the patient's open tissues to the blood of the worker. These include procedures where the worker's gloved hands may be in contact with sharp instruments, needle tips and sharp tissues (spicules of bone or teeth) inside a patient's open body cavity, wound or confined anatomical space where the hands or fingertips may not be completely visible at all times.

A dentist who employs a dental nurse who is subsequently found to be infected with a blood borne virus must undertake a risk assessment to determine whether there is a risk to patients and whether the dental nurse should be redeployed within the practice. The risk assessment must take into account the duties performed by the dental nurse and the likelihood that the infection could be transmitted to a patient or another member of staff. An infected dental nurse must not undertake exposure prone procedures in order to remove, as far as is possible, the risk of transmitting infection.

Infection control in dentistry

Members of the dental team have a duty to ensure that infection control procedures are followed routinely. The mouth carries a large number of potentially infective microorganisms; saliva and blood are known vectors of infection. Most carriers of latent infection are unaware of their condition and it is important, therefore, that the same infection control routine is adopted for all patients.

Training in infection control

All dental staff must be aware of the procedures required to prevent the transmission of infection and should understand why these procedures are necessary. Regular monitoring of the procedures is essential and the infection control policy for the practice should be reviewed regularly and updated when necessary.

All new staff must be appropriately trained in infection control procedures prior to working in the practice. Training should equip staff to understand –

- how infections are transmitted
- the practice policy on decontamination and infection control
- what personal protection is required and when to use it
- what to do in the event of accidents or personal injury

Surgery design

The layout of the surgery, which should be simple and uncluttered, is an important aspect of infection control. There should be two distinct areas: one for the operator and one for the dental nurse, each with a washbasin, which should have elbow- or foot-operated taps, and liquid soap dispensers. The operator's area would have access to the turbines, three-in-one syringe, slow handpiece, bracket table and operating light. The dental nurse's area would contain the suction lines, perhaps the three-in-one syringe, curing light, all the cabinetry containing dental materials and a designated area for clinical waste disposal and the decontamination of instruments.

Clean and dirty areas within the surgery should be clearly defined. Where possible, instruments should be decontaminated away from the surgery in a room containing the autoclave(s), ultrasonic bath(s), instrument washer(s) and sinks and a separate hand wash basin. If instruments are cleaned manually before sterilization, the sink must be of sufficient depth to enable instruments to be fully covered with water during cleaning to minimize the risk of splashing.

Ventilation

- the surgery should be well ventilated; usually an open window will suffice but, in some cases, it might be appropriate to install an extraction fan.
- ventilation systems should exhaust to the outside of the building without risk to the public or re-circulation into any public building.
- the recommended fresh air supply rate of ventilation systems should not fall below 5-8 liters per second per occupant and should not create uncomfortable draughts.
- mechanical ventilation systems must be regularly cleaned, tested and maintained according to the manufacturer's recommendations to ensure they are free from anything that may contaminate the air.
- recycling air conditioning systems are not recommended.

Floor covering

- the floor covering should be impervious and non-slip. Carpeting must be avoided.
- the floor covering should be seam-free; where seams are present, they should be sealed.
- the junctions between the floor and wall and the floor and cabinetry should cove or be sealed to prevent inaccessible areas where cleaning might be difficult.

Work surfaces

- work surfaces should be impervious and easy to clean and disinfect – check with manufacturers on suitable products for decontamination.
- work surface joins should be sealed to prevent the accumulation of contaminated matter and aid cleaning.
- all work surface junctions should be rounded or coved to aid cleaning.

Choice of equipment

When selecting new equipment, you should think about –

- what you want the equipment to do – will the equipment selected be fit for this purpose? Is there any evidence? Is it compatible with other equipment in the surgery?
- how easy it will be to use and maintain?
- how easy it is to decontaminate what are the manufacturer's recommendations? When selecting new hand instruments avoid difficult to clean serrated handles and check that hinges are easy to clean.

- can the material covering the dental chair and work surfaces be cleaned and disinfected regularly without deterioration? Check with the manufacturer.
- selecting foot controlled equipment whenever possible
- training – is it required? Will the manufacturer provide it?

Water supplies

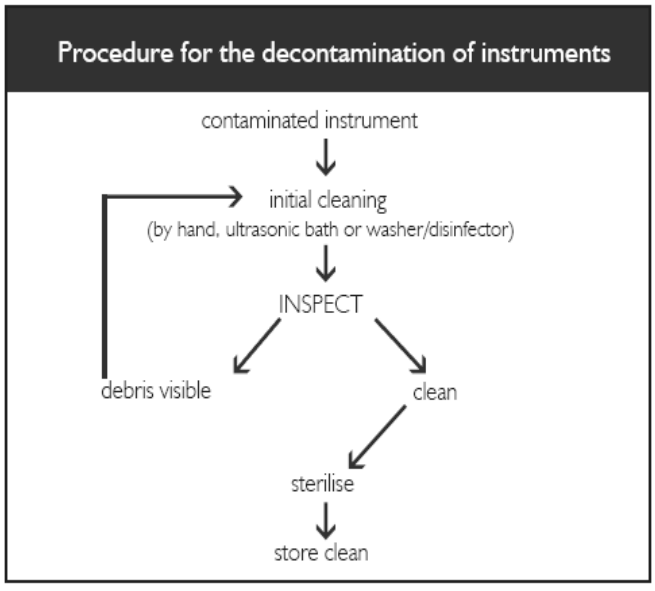
All water lines and air lines should be fitted with anti-retraction valves to help prevent contamination of the lines but these valves cannot be relied upon to prevent infected material being aspirated back into the tubing.

Most dental unit waterlines will harbor biofilm, which acts as a reservoir of microbial contamination and may be a source of known pathogens (Legionella spp, for example). A bottled water system can help to control microbial contamination – disinfectants can be introduced into the water supply to reduce the microbial load. The manufacturer's advice on the type and strength of disinfectant should be followed.

The design of some dental equipment requiring a water supply means that it is possible for contaminated water to be drawn back through the waterlines to the mains water supply (backflow/ backsiphonage). Interrupting the water supply to the surgery by a physical break (air gap) will prevent the possibility of backflow. Some equipment requiring a water supply is now manufactured to incorporate an air gap – check this with the manufacturer.

Decontamination of instruments and equipment

All instruments contaminated with oral and other body fluids must be thoroughly cleaned and sterilized after use. Instruments selected for a treatment session but not used must be regarded as contaminated. There are three stages to the decontamination process: pre-sterilization cleaning, sterilization and storage. Manufacturers are now required to provide instructions for the decontamination of their



equipment - these instructions should be followed. It is worth checking with the manufacturers prior to purchase that equipment can be used for the purpose intended and decontaminated by the methods used in the practice.

A systematic approach to the decontamination of instruments after use will ensure that dirty instruments are segregated from clean. The flow diagram (right) shows a possible approach.

Pre-sterilization cleaning

Used instruments are often heavily contaminated with blood and saliva and must be completely cleaned before sterilization. Instruments can be cleaned by hand, in an ultrasonic bath or using an instrument washer/disinfector – do check with the manufacturer that instruments can withstand ultrasonic cleaning and automated processing. Ultrasonic cleaners and washer/ disinfectors are preferred over hand cleaning instruments as they are more efficient and contact with contaminated instruments is kept to a minimum thereby reducing the likelihood of inoculation injuries.

After cleaning, all instruments must be examined thoroughly and, if there is residual debris, re-cleaned.

Hand cleaning of dental instruments is the least efficient cleaning method. If this method is used, however, the instruments should be fully immersed in a sink pre-filled with warm water and detergent and a long-handled kitchen-type brush used to remove debris. Instruments should be washed under water with the sharp end of the instrument held away from the body; extra care must be taken when cleaning instruments that are sharp at both ends. Thick waterproof household gloves must be worn to protect against accidental injury and protective eyewear to shield against splashing. The brush used to remove debris from the instruments should be cleaned and autoclaved at regular intervals – at the end of each clinical session, for example. Cleaned brushes should be stored dry.

Ultrasonic cleaners should be used and serviced according to the manufacturer's instructions and should contain a detergent not a disinfectant – disinfectant solutions alone can precipitate proteins and make them resistant to removal. Do check the manufacturer's recommendations. The liquid in the ultrasonic cleaners should be disposed of at the end of each clinical session and more often if it appears heavily contaminated. Ultrasonic cleaners with baskets are preferred. The cleaning cycle should not be interrupted to add further instruments. At the end of each day, the ultrasonic cleaner must be emptied, cleaned and left dry.

Washer/disinfectors designed for cleaning instruments are now available and, if used, the manufacturer's instructions should be followed. Washer/disinfectors are more efficient at pre-sterilization cleaning than ultrasonic cleaners and hand cleaning but must not be used as a substitute for sterilization procedures.

Sterilization

The method of choice for the sterilization of all dental instruments is **autoclaving**. Sterilization should be performed at the highest temperature compatible with the instruments in the load. For dental instruments and equipment, autoclaves should reach a temperature of 134-137oC for three minutes. New autoclaves should have an integral printer to allow the parameters reached during the sterilization cycle to be recorded for routine monitoring. Hot air ovens, ultra violet light, boiling water and chemiclaves are not recommended for sterilizing dental instruments and equipment.

Effective sterilization depends on steam condensing on all surfaces of the instruments in the load to be autoclaved, so it is essential that instruments be placed to allow free circulation of steam; the autoclave chamber must not be overloaded. The sterilization process is impaired or prevented by air remaining in the chamber or trapped in the load items. Air is removed from the autoclave chamber by either being displaced downwards by steam or by evacuating the air to create a vacuum before steam is introduced into the chamber. For many years, downward displacement autoclaves were the only autoclaves used in a dental surgery; they are still considered an acceptable means of sterilizing dental instruments and equipment.

More recently, however, vacuum phase autoclaves have become available to dentists in general practice. Dentists considering purchasing a vacuum-phase autoclave should ensure that it is capable of sterilizing the intended load items (various types are available and not all are suitable for processing dental equipment). The autoclave should be equipped only with cycles providing a presterilization vacuum stage to minimize the possibility of an incorrect cycle being selected – and a consequent failure to sterilize the load.

Processing wrapped instruments in a conventional downward contaminated instrument initial cleaning (by hand, ultrasonic bath or washer/disinfector) INSPECT debris visible clean sterilize store clean displacement autoclave may result in inadequate air removal and failure

to sterilize. Wrapped instruments and instruments in pouches must be sterilized using a vacuum-phase autoclave.

There continues to be some debate about the effective decontamination of handpieces. In theory, a vacuum phase autoclave will remove the air from the lumen of a dental handpiece, allowing steam to penetrate. The presence of lubricating oil, however, may compromise the sterilization process. Current opinion is that effective presterilization cleaning of dental handpieces and subsequent processing in a properly functioning downward displacement autoclave is acceptable.

All autoclaves must be regularly serviced and maintained according to the manufacturer's recommendations and periodically inspected (usually annually) to ensure the integrity of the associated pipe work. Vacuum-phase autoclaves are more complicated than conventional steam sterilizers and require more rigorous testing by the user to demonstrate that they function correctly. If you are considering purchasing a vacuum-phase autoclave, you must be aware of all the user tests that you will be required to perform and record on a regular basis. Your service and maintenance agreement should cover the anticipated response time in the event that the autoclave breaks down or malfunctions.

At the end of each day, the residual water should be drained from the autoclave chamber and reservoir, which should then be cleaned and left open to dry overnight. Many autoclaves now incorporate a facility for draining residual water. A drain valve can be retro-fitted to many autoclaves that do not have an integral drainage device. As a last resort, the high volume suction unit may be used (if it is conveniently placed). If this is necessary, the autoclave should not be moved or lifted unless it can be done safely and without risk of injury.

It is important that the water used in the autoclave should contain no minerals that may cause damage and, to ensure the integrity of the sterilization cycle, it should be free of pathogens and endotoxins (pyrogen free).

Successful sterilization depends upon the consistent reproducibility of sterilizing conditions –

- autoclaves must be validated before use and their performance monitored routinely (by periodic testing, including daily and weekly user tests)
- the equipment must be properly maintained according to the manufacturer's instructions

- correct operation of the autoclave must be checked whenever the autoclave is used by recording the readings (physical parameters) on the autoclave's instruments or printout at the beginning of each clinical session
- the readings should be compared with the recommended values – if any reading is outside its specified limits, the sterilization cycle must be regarded as unsatisfactory, irrespective of the results obtained from chemical indicators, and the autoclave cycle checked again. If the second cycle is unsatisfactory, the autoclave should not be used until the problem has been rectified by an engineer
- autoclave logs and printouts should be retained for inspection and monitoring – to demonstrate that the autoclave is performing within the recommended parameters.

Chemical and biological indicators do not demonstrate sterility of the load. Chemical indicators serve only to distinguish loads that have been processed in an autoclave from those that have not. Biological indicators are of limited value in moist heat sterilization and can only be regarded as additional to the measurement of physical parameters.

Handpieces must be cleaned and autoclaved after each patient. Presterilization cleaning machines are recommended. Those using an alcohol/disinfectant combination or a washing cycle must only be used to disinfect handpieces on the manufacturer's advice. These machines do not replace the sterilization process.

Decontamination of handpieces

If a cleaning machine is not used, the following protocol should be adopted for the pre-sterilization cleaning of handpieces:

- leave the bur in place during cleaning to prevent contamination of the handpiece earing
- clean the outside of the handpiece with detergent and water – never clean or immerse the handpiece in disinfectant
- remove the bur
- if recommended by the manufacturer, lubricate the handpiece with pressurized oil until clean oil appears out of the chuck and clean off excess oil
- sterilize in an autoclave
- if recommended by the manufacturer, lubricate the handpiece after sterilization and run it briefly before use to clear excess lubricant
- the oil used for pre-sterilization cleaning/lubrication should not be the same as used for poststerilization lubrication; either two

canisters should be used or the nozzle changed between applications.

Instrument storage
Sterilized instruments should be stored in dry, covered conditions – trays with lids are now available for this purpose. Sterilized instruments should not be stored in a disinfectant or antiseptic solution. Pouches can be useful for storing infrequently used instruments such as extraction forceps and elevators. Pouches with a clear side allow instruments to be easily identified before opening.

The instruments necessary for treatment should be selected prior to the treatment session. If additional instruments are needed during treatment, care must be taken to avoid the cross contamination of other instruments. Tray systems can help with this.

Single use (disposable) items

Equipment that is described by the manufacturer as 'single use' should be used whenever possible and discarded after use, never reused. 'Single use' means that a device can be used on a patient during one treatment session and then discarded. These items include, but are not limited to, local anaesthetic needles and cartridges, scalpel blades, saliva ejectors, matrix bands, impression trays and beakers. Disposable towels are recommended. Items such as three-in-one tips are difficult to decontaminate effectively and can now be bought as disposable items.

Surface cleaning and disinfection

Surfaces of dental units must be impervious as they may become contaminated with potentially infective material. When selecting equipment, consider the ease with which the surfaces can be cleaned and disinfected. Check with the manufacturer that the surfaces are resistant to common disinfectants. The manufacturer may recommend the use of a particular disinfectant; ensure that it will destroy or deactivate all viruses, bacteria and fungi.

Protect light and chair hand controls with disposable impervious coverings and change between patients. If these are not used, the controls must be effectively decontaminated between patients as described below.

A strict system of zoning aids and simplifies the decontamination process. In practice, this means defining the areas, which will become

contaminated during operative procedures; only these areas need to be cleaned and disinfected between patients. A surgery can, as a result, be cleaned rapidly. In addition, between clinical sessions, all work surfaces, including those apparently uncontaminated, should be thoroughly cleaned and disinfected.

Effective surface decontamination is a two-stage process of cleaning and disinfection to reduce the microbial load to a minimum –

- clear the work surface of instruments, materials, patients' notes etc,
- cleaning is achieved by applying a detergent liquid to the surface and physically wiping the area with a generous application of elbow grease
- the surface can then be disinfected with a disinfectant that will destroy or deactivate all microbes. Disinfectant solutions must be made up and used according to the manufacturer's instructions
- disinfectants containing alcohol may be flammable and should not be used near a naked flame
- protective gloves must be worn and eyes must be protected
- good general ventilation will help to minimize inhalation.

All aspirators, drains and spittoons should be cleaned after every session with a surfactant/detergent (to break down the biofilm) and a nonfoaming disinfectant. Portable aspirators with reservoir bottles are not recommended; they are not fitted with filters and pose a considerable hazard when disposing of the contents.

Decontamination of instruments and equipment prior to service or repair

There is a statutory duty to ensure instruments and equipment are safe for repair. In practice, this means that handpieces and other instruments must be cleaned and sterilized before being sent for repair and a statement confirming this must accompany the equipment.
Equipment that cannot be sterilized must be thoroughly cleaned and disinfected in accordance with the manufacturer's instructions.

Decontamination of impression materials and prosthetic and orthodontic appliances

The responsibility for ensuring impressions and appliances have been cleaned and disinfected prior to dispatch to the laboratory lies solely with the dentist –

- immediately on removal from the mouth, the impression or appliance should be rinsed under running water to remove saliva, blood and debris
- continue the process until it is visibly clean. If an appliance is grossly contaminated, it should be cleaned in an ultrasonic bath containing detergent and then rinsed
- the impression or appliance should be disinfected according to the manufacturer's recommendations. Generic materials such as sodium hypochlorite (household bleach) may no longer be suitable for disinfecting impressions unless specifically recommended by the manufacturer
- disinfectants should not be sprayed onto the surface of the impression; it lessens the effectiveness and creates an inhalation risk. Immersion of the impression is recommended
- the impression or appliance should be rinsed again in water before sending to the laboratory accompanied by a confirmation that it has been disinfected.

Products that are suitable for the disinfection of impressions or appliances are CE marked to demonstrate conformity to European Directives. The manufacturer's recommendations for the dilution of the disinfectant and immersion time must be followed.

Disposal of clinical waste

All waste in the practice should be segregated into clinical and nonclinical waste –

- clinical waste is waste that is contaminated with blood, saliva or other body fluids and may prove hazardous to any person coming into contact with it.
- clinical waste sacks must be no more than three-quarters full, have the air gently squeezed out to avoid bursting when handled by others, labeled and tied at the neck, not knotted.
- sharps waste (needles and scalpel blades) must be sealed in UN type approved puncture-proof containers, which must be labeled before disposal.

- local anaesthetic cartridges, whether partially discharged (hazardous) or fully discharged must always be disposed of via the sharps container.
- sharps containers should be disposed of when no more than two-thirds full.
- clinical waste and sharps waste must be stored securely before collection for final disposal - usually by high temperature incineration.
- clinical waste must only be collected for disposal by a registered waste carrier who holds a certificate of registration.
- when waste is collected for disposal, a transfer note must be completed and signed by both parties. The transfer note provides the dentist with evidence that the waste will be disposed of in the correct manner.
- repeated transfers of the same kind of waste between the same parties can be covered by one transfer note for up to one year but a copy must be kept for two years.

Some primary care trusts have local arrangements for the collection and disposal of clinical waste; otherwise arrangements for the collection of clinical waste should be made with a private contractor.

Partially used local anaesthetic cartridges
are regarded as hazardous waste and are subject to additional disposal controls; when the waste is collected, consignment notes must be completed and kept for three years. If a local anaesthetic cartridge is fully discharged, however, it is not regarded as hazardous waste and can be disposed of as clinical waste via the sharps container. If partially discharged local anaesthetic cartridges are disposed of via the sharps container, the container must be disposed of as hazardous waste.

Amalgam filled extracted teeth
cannot be discarded via the sharps container, as amalgam must not be incinerated. These teeth should be disposed of with waste amalgam but care should be taken as the teeth will be contaminated with blood. Waste collection agencies often produce special containers for the disposal of amalgam filled teeth. It is possible to send amalgam filled teeth (and non filled teeth) through the post to universities for teaching and research purposes but the patient's consent must be obtained first (and recorded in the clinical records). It is important to ensure that extracted teeth that are sent through the post are first decontaminated and packaged securely to avoid the package being split open during transit. Some dental schools provide a container and disinfectant suitable for decontamination, storage and transport.

A dentist who fails to dispose of waste in a safe manner will face prosecution by the authorities (Environmental Health Departments, Health and Safety Executive etc) and may be liable to proceedings for serious professional misconduct before the General Dental Council. Clinical waste and hazardous waste must never be disposed of at local refuse tips or landfill sites.

Blood spillages

If blood is spilled – either from a container or as a result of an operative procedure – the spillage should be dealt with as soon as possible. The spilled blood should be completely covered either by disposable towels, which are then treated with 10,000 ppm sodium hypochlorite solution or by sodium dichloroisocyanurate granules. At least 5 minutes must elapse before the towels etc are cleared and disposed of as clinical waste. The dental health care worker who deals with the spillage must wear appropriate protective clothing, which will include household gloves, protective eyewear and a disposable apron and, in the case of an extensive floor spillage, protective footwear. Good ventilation is essential.

Biopsy specimens sent through the post

Dentists using Royal Mail to send patients' **non-fixed specimens** to pathology laboratories for diagnostic opinion or tests must comply with the UN 602 packaging requirements. The 602 packaging requirements ensure that strict performance tests (including drop and puncture tests) have been met. In practice this means –

- the outer shipping package must bear the UN packaging specification marking. Only first class letter post, special delivery or data post services must be used. The parcel post must not be used
- every pathological specimen must be enclosed in a primary container that is watertight and leak proof
- the primary container must be wrapped in sufficient absorbent material to absorb all fluid in case of breakage
- the primary container should then be protected by placing it in a second durable watertight, leak proof container
- several wrapped primary containers may be placed in one secondary container provided sufficient additional absorbent material is used to cushion the primary containers

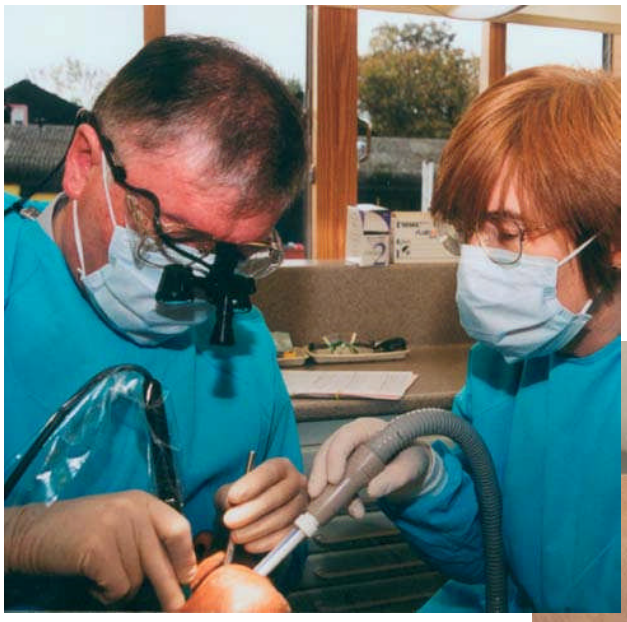
- finally the secondary container should be placed in an outer shipping package which protects it and its contents from physical damage and water whilst in transit
- the shipping package must be conspicuously *'PACKED IN COMPLIANCE WITH THE POST OFFICE INLAND LETTER POST SCHEME'*
- the sender must also sign and date the package in the space provided
- information concerning the sample, such as data forms, letters and descriptive information should be taped to the outside of the secondary container.

A dentist sending a pathological specimen through the post without complying with the above requirements may be liable to prosecution.

Specimens that are **'fixed'** are not covered by these requirements. This means that –

- specimens should be enclosed in a primary container and sealed securely
- the container must be wrapped in sufficient absorbent material to absorb all leakage if it is damaged, and then sealed in a leak proof plastic bag
- the specimen should then be placed in a padded bag and labeled *'PATHOLOGICAL SPECIMEN – FRAGILE WITH CARE'*
- the bag must show the name and address of the sender to be contacted in case of damage or leakage

Personal Protection



The employing dentist has a duty of care towards employees to provide a safe place of work. It is not sufficient simply to provide personal protective equipment such as gloves and glasses; the employer must ensure that it is being used in the correct manner. It is important that all staff understand the principles of personal protection and that compliance is part of their contracts of employment.

Immunization

All clinical staff should be vaccinated against the common illnesses. All those involved in clinical procedures must be vaccinated against hepatitis B. If an inoculation injury is sustained before completion of the course, follow up action, including boosters and tests for hepatitis B markers, is essential. The hepatitis B vaccine is effective in preventing infection in individuals who produce specific antibodies to the hepatitis B surface antigen (anti-HBs).UK experts recommend that anti-HBs level of >100 mIU/ml will provide protection against hepatitis B infection. It is now clear that immunological memory is produced in those who respond to the primary course of the vaccine (>100mIU/ml). Protection against infection is maintained even if antibody concentrations at the time of exposure have declined.

Anti-HBs levels must be measured 2-4 months after completion of the immunization course.

A single booster dose five years after completion of the primary course is recommended for all health care workers who have contact with blood, blood stained fluids and patients' tissues. Pre- and post testing at the time of a booster is not required if the individual responded to the primary course of the vaccine.

Not everyone will respond to the vaccine, however, some because they are true non-responders, others because they carry the virus. Those who fail to respond should undergo further investigation to establish if test markers of hepatitis B infection are present. Investigation to establish infection should take place before booster doses of the vaccine are given in an attempt to achieve anti-HBs levels of at least 100 mIU/ml. True vaccine non responders may remain susceptible to infection and it is essential that inoculation injuries be followed up with tests for hepatitis B markers where appropriate.

Dental clinicians and their staff must have documentary evidence to demonstrate that they have been immunized and their response to the

vaccine checked. Where they have failed to respond they must undergo further investigation to exclude the possibility of being high risk carriers of the hepatitis B virus. The employing dentists must hold evidence of hepatitis B immunization; post vaccination blood test results will show whether an adequate level of immunity has been achieved. The letter (left) may be helpful, if you are requesting this information from your employee's general medical practitioner. Do remember that you must have the consent of your employee before you approach his/her GMP and that any information provided is confidential and should be stored appropriately.

Hepatitis B infection in pregnant women may result in severe disease for the mother and chronic infection in the new-born. Although infants can receive active/passive immunization at birth, vaccination should not be withheld from a pregnant woman if she is likely to be at risk from contracting hepatitis B infection. Many women have discovered at a later date that, at the time of receiving the vaccine, they were pregnant. In these instances, the vaccine caused no harm to themselves or their children. The vaccine also does not affect fertility and does not prevent breast-feeding.

Hand protection

The care of hands is vital to infection control; lacerated, abraded and cracked skin can offer a portal of entry for micro-organisms. Gloves must be worn for all clinical procedures and treated as single use items so a new pair of gloves must be used for each patient. Gloves should be donned immediately before contact with the patient and removed as soon as clinical treatment is complete. Used gloves must be disposed of as clinical waste.

Recommendations for hand care during clinical sessions include –

- removal of rings, jewellery and watches
- covering all cuts and abrasions with waterproof adhesive dressings
- methodical hand washing using a good quality liquid soap preferably containing a disinfectant – a full hand wash and thorough drying is recommended before donning gloves

- removing gloves and washing hands after each patient (gives the hands time to recover from being covered)
- regular use of an emollient hand cream to prevent the skin from drying, especially after every clinical session.

There is a variety of gloves available. Those selected should be –

- good quality non-sterile medical gloves, worn for all clinical procedures and changed after every patient
- well fitting and non-powdered. The powder from gloves can contaminate veneers and radiographs, disperse allergenic proteins into the surgery atmosphere and interfere with wound healing
- 'hypoallergenic' and 'low protein' to reduce the possibility of allergy.

Allergic contact dermatitis is rare but, if it develops, it may be serious enough to cause the person to cease practice. If it is suspected, the advice of a dermatologist should be sought. Irritant contact dermatitis is more common and can be avoided by careful choice of glove and hand disinfectant and meticulous hand care.

Increasingly, dentists are encountering patients who are allergic to latex or the chemicals used in glove manufacture. Nonlatex gloves are available but additional precautions will be needed to protect the allergic patient against contact with latex through other sources in the surgery – local anaesthetic cartridges, rubber dam and protective glasses, for example. A Fact File on Hand dermatitis and latex allergy is available from the BDA. The advice of a consultant immunologist may need to be sought on the treatment of the patient.

Eye protection and face masks

Operators and close support clinical staff must protect their eyes against foreign bodies, splatter and aerosols that may arise during operative dentistry, especially during scaling (manual and ultrasonic), the use of rotary instruments, cutting and use of wires and the cleaning of instruments. Ideally, protective glasses

should have side protection. Many modern prescription glasses have small lenses, which would make them unsuitable for use as eye protection. Patients' eyes must always be protected against possible injury; tinted glasses may also protect against glare from the operating light.

Masks do not confer complete microbiological protection but they do stop splatter from contaminating the face. Masks or visors are recommended for all operative procedures and should be changed after every patient, not pulled down or re-used.

Surgery clothing

A wide variety of clothing is worn in dental surgeries and in many practices is used to reinforce the corporate image. There is no consensus view on whether surgery clothing should have short or long sleeves. Short sleeves will allow the forearms to be washed as part of the hand washing routine. Long sleeved coats or tunics will protect the skin of the arms against splatter. This is important if skin is cracked or abraded (as a result of eczema, for example). Long sleeves, however, are more likely to become contaminated during clinical sessions and could cause a breach in infection control. Surgery clothing should be made of a material that can be machine washed with a suitable detergent at a temperature of 65oC to eradicate any potential microbial contamination.

Aerosol and saliva/blood splatter

Good surgery ventilation and efficient high-volume aspirators, which exhaust externally from the premises, will reduce the risk of infection by dispersing and eliminating aerosols. External vents should discharge without risk to the public or re-circulation into any building. Aspirators and tubing should be cleaned and disinfected regularly in accordance with the manufacturer's instructions and the system should be flushed through at the end of each session with their recommended surfactant/detergent and/or non-foaming disinfecting agent.

Rubber dam isolation of teeth also offers substantial advantages and should be used whenever practicable. It enhances the quality of the operative environment and virtually abolishes saliva/blood splatter and aerosols. When working without rubber dam, the use of high-volume aspiration is essential.

Inoculation injuries

Inoculation injuries are the most likely route for transmission of blood borne viral infections in dentistry. The definition of an inoculation injury includes all incidents where a contaminated object or substance breaches the integrity of the skin or mucous membranes or comes into contact with the eyes. The following are typical examples –

- sticking or stabbing with a used needle or other instrument
- splashes with a contaminated substance to the eye or other open lesion
- cuts with contaminated equipment
- bites or scratches inflicted by patients.

Inoculation injuries must be dealt with promptly and correctly –

- the wound should be allowed to bleed and washed thoroughly with running water
- where there is reason to be concerned about the possible transmission of infection, the injured person should seek urgent advice according to the local arrangements in place on what follow up action, including serological surveillance, is necessary. Ideally all practices should have formal links with an occupational health service, so that management of sharps injuries is undertaken promptly and according to accepted national protocols
- every primary care trust will have at least one designated specialist, for example the Consultant in Communicable Disease Control or Consultant Medical Microbiologist, who can be contacted for advice on post exposure prophylaxis. Every practice should have details of the local contact displayed prominently

Blood borne Pathogens

Preventing Transmission of Blood borne Pathogens

Transmission of blood borne pathogens (e.g., HBV, HCV, and HIV) in dental health-care settings can have serious consequences, such transmission is rare.

Exposure to infected blood can result in transmission from patient to DENTAL HEALTH CARE PERSON, from DENTAL HEALTH CARE PERSON to patient, and from one patient to another.

The opportunity for transmission is greatest from patient to DENTAL HEALTH CARE PERSON, who frequently encounter patient blood and blood-contaminated saliva during dental procedures.
For DENTAL HEALTH CARE PERSON to pose a risk for blood borne virus transmission to patients, DENTAL HEALTH CARE PERSON must:

- be viremic (i.e., have infectious virus circulating in the bloodstream)
- be injured or have a condition (e.g., weeping dermatitis) that allows direct exposure to their blood or other infectious body fluids
- enable their blood or infectious body fluid to gain direct access to a patient's wound, traumatized tissue, mucous membranes, or similar portal of entry.

Although an infected DENTAL HEALTH CARE PERSON might be viremic, unless the second and third conditions are also met, transmission cannot occur.
The risk of occupational exposure to blood borne viruses is largely determined by their prevalence in the patient population and the nature and frequency of contact with blood and body fluids through percutaneous or permucosal routes of exposure. The risk of infection after exposure to a blood borne virus is influenced by inoculum size, route of exposure, and susceptibility of the exposed HCP. The majority of attention has been placed on the blood borne pathogens HBV, HCV, and HIV, and these pathogens present different levels of risk to DENTAL HEALTH CARE PERSON.

Hepatitis B Virus

HBV is transmitted by percutaneous or mucosal exposure to blood or body fluids of a person with either acute or chronic HBV infection. Persons infected with HBV can transmit the virus for as long as they are

HBsAg-positive. The risk of HBV transmission is highly related to the HBeAg status of the source person.
Blood contains the greatest proportion of HBV infectious particle titers of all body fluids and is the most critical vehicle of transmission in the health-care setting. HBsAg is also found in multiple other body fluids, including breast milk, bile, cerebrospinal fluid, feces, nasopharyngeal washings, saliva, semen, sweat, and synovial fluid. However, the majority of body fluids are not efficient vehicles for transmission because they contain low quantities of infectious HBV, despite the presence of HBsAg. The concentration of HBsAg in body fluids can be 100–1,000-fold greater than the concentration of infectious HBV particles. Although percutaneous injuries are among the most efficient modes of HBV transmission.

Hepatitis D Virus

An estimated 4% of persons with acute HBV infection are also infected with hepatitis Delta virus (HDV). Discovered in 1977, HDV is a defective blood borne virus requiring the presence of HBV to replicate. Patients co infected with HBV and HDV have substantially higher mortality rates than those infected with HBV alone. Because HDV infection is dependent on HBV for replication, immunization to prevent HBV infection, through either pre- or Postexposure prophylaxis, can also prevent HDV infection.

Hepatitis C Virus

Hepatitis C virus appears not to be transmitted efficiently through occupational exposures to blood. Follow-up studies of HCP exposed to HCV-infected blood through percutaneous or other sharps injuries have determined a low incidence of seroconversion (mean: 1.8%; range, 0%–7%). One study determined transmission occurred from hollow-bore needles but not other sharps. Although these studies have not documented seroconversion associated with mucous membrane or non-intact skin exposure, at least two cases of HCV transmission from a blood splash to the conjunctiva and one case of simultaneous transmission of HCV and HIV after non-intact skin exposure have been reported . Data are insufficient to estimate the occupational risk of HCV infection among HCP, but the majority of studies indicate the prevalence of HCV infection among dentists, surgeons, and hospital-based HCP is similar to that among the general population, approximately 1%–2% . In a study that evaluated risk factors for infection, a history of unintentional needle sticks was the only occupational risk factor independently associated with

HCV infection . No studies of transmission from HCV-infected DENTAL HEALTH CARE PERSON to patients have been reported, and the risk for such transmission appears limited. Multiple reports have been published describing transmission from HCV-infected surgeons, which apparently occurred during performance of invasive procedures; the overall risk for infection averaged 0.17%.

Human Immunodeficiency Virus

The risk of HIV transmission in dental settings is extremely low. Prospective studies worldwide indicate the average risk of HIV infection after a single percutaneous exposure to HIV-infected blood is 0.3% (range: 0.2%–0.5%). After an exposure of mucous membranes in the eye, nose, or mouth, the risk is approximately 0.1% . The precise risk of transmission after skin exposure remains unknown but is believed to be even smaller than that for mucous membrane exposure.
Certain factors affect the risk of HIV transmission after an occupational exposure. Laboratory studies have determined if needles that pass through latex gloves are solid rather than hollow-bore, or are of small gauge (e.g., anesthetic needles commonly used in dentistry), they transfer less blood. In a retrospective case-control study of HCP, an increased risk for HIV infection was associated with exposure to a relatively large volume of blood, as indicated by a deep injury with a device that was visibly contaminated with the patient's blood, or a procedure that involved a needle placed in a vein or artery. The risk was also increased if the exposure was to blood from patients with terminal illnesses, possibly reflecting the higher titer of HIV in late-stage AIDS.

Exposure Prevention Methods

Avoiding occupational exposures to blood is the primary way to prevent transmission of HBV, HCV, and HIV, to HCP in health-care settings.

Exposures occur through percutaneous injury (e.g., a needle stick or cut with a sharp object), as well as through contact between potentially infectious blood, tissues, or other body fluids and mucous membranes of the eye, nose, mouth, or non-intact skin (e.g., exposed skin that is chapped, abraded, or shows signs of dermatitis).

Percutaneous injuries among DENTAL HEALTH CARE PERSON usually

- occur outside the patient's mouth, thereby posing less risk for recontact with patient tissues

- involve limited amounts of blood
- are caused by burs, syringe needles, laboratory knives, and other sharp instruments.

Injuries among oral surgeons might occur more frequently during fracture reductions using wires.

Experience, as measured by years in practice, does not appear to affect the risk of injury among general dentists or oral surgeons .

The majority of exposures in dentistry are preventable, and methods to reduce the risk of blood contacts have included use of standard precautions, use of devices with features engineered to prevent sharp injuries, and modifications of work practices. However, needle sticks and other blood contacts continue to occur, which is a concern because percutaneous injuries pose the greatest risk of transmission.

Standard precautions include use of PPE (e.g., gloves, masks, protective eyewear or face shield, and gowns) intended to prevent skin and mucous membrane exposures. Other protective equipment (e.g., finger guards while suturing) might also reduce injuries during dental procedures.

Work-practice controls establish practices to protect DENTAL HEALTH CARE PERSON whose responsibilities include handling, using, assembling, or processing sharp devices (e.g., needles, scalers, laboratory utility knives, burs, explorers, and endodontic files) or sharps disposal containers. Work-practice controls can include removing burs before disassembling the handpiece from the dental unit, restricting use of fingers in tissue retraction or palpation during suturing and administration of anesthesia, and minimizing potentially uncontrolled movements of such instruments as scalers or laboratory knives.

Safer versions of sharp devices used in hospital settings have become available (e.g., blunt suture needles, phlebotomy devices, and butterfly needles), and their impact on reducing injuries has been documented.
Aspirating anesthetic syringes that incorporate safety features have been developed for dental procedures, but the low injury rates in dentistry limit assessment of their effect on reducing injuries among DENTAL HEALTH CARE PERSON.

Work-practice controls for needles and other sharps include placing used disposable syringes and needles, scalpel blades, and other sharp items in appropriate puncture-resistant containers located as close as feasible to

where the items were used. In addition, used needles should never be recapped or otherwise manipulated by using both hands, or any other technique that involves directing the point of a needle toward any part of the body. A one-handed scoop technique, a mechanical device designed for holding the needle cap to facilitate one-handed recapping, or an engineered sharps injury protection device (e.g., needles with reheating mechanisms) should be employed for recapping needles between uses and before disposal.

DENTAL HEALTH CARE PERSON should never bend or break needles before disposal because this practice requires unnecessary manipulation. Before attempting to remove needles from non-disposable aspirating syringes, DENTAL HEALTH CARE PERSON should recap them to prevent injuries.

For procedures involving multiple injections with a single needle, the practitioner should recap the needle between injections by using a one-handed technique or use a device with a needle-reheating mechanism. Passing a syringe with an unsheathed needle should be avoided because of the potential for injury.

Postexposure Management and Prophylaxis

Postexposure management is an integral component of a complete program to prevent infection after an occupational exposure to blood. During dental procedures, saliva is predictably contaminated with blood. Even when blood is not visible, it can still be present in limited quantities and therefore is considered a potentially infectious material.

A qualified health-care professional should evaluate any occupational exposure incident to blood or blood including saliva, regardless of whether blood is visible, in dental settings.

Dental practices and laboratories should establish written, comprehensive programs that include hepatitis B vaccination and post-exposure management protocols that:

- describe the types of contact with blood or oral fluids that can place DENTAL HEALTH CARE PERSON at risk for infection
- describe procedures for promptly reporting and evaluating such exposures
- identify a health care professional who is qualified to provide counseling and perform all medical evaluations and procedures.

DENTAL HEALTH CARE PERSON, including students, who might reasonably be considered at risk for occupational exposure to blood or oral fluids should be taught strategies to prevent contact with blood or oral fluids and the principles of post-exposure management as part of their job orientation and training.

Educational programs for DENTAL HEALTH CARE PERSON and students should emphasize reporting all exposures to blood or oral fluids as soon as possible, because certain interventions have to be initiated promptly to be effective.

After an occupational blood exposure, first aid should be administered as necessary. Puncture wounds and other injuries to the skin should be washed with soap and water; mucous membranes should be flushed with water. No evidence exists that using antiseptics for wound care or expressing fluid by squeezing the wound further reduces the risk of blood borne pathogen transmission; however, use of antiseptics is not contraindicated. The application of caustic agents (e.g., bleach) or the injection of antiseptics or disinfectants into the wound is not recommended.

Exposed DENTAL HEALTH CARE PERSON should immediately report the exposure to the infection-control coordinator or other designated person, who should initiate referral to the qualified health-care professional and complete necessary reports.

Because multiple factors contribute to the risk of infection after an occupational exposure to blood, the following information should be included in the exposure report, recorded in the exposed person's confidential medical record, and provided to the qualified health-care professional:

- Date and time of exposure.
- Details of the procedure being performed, including where and how the exposure occurred and whether the exposure involved a sharp device, the type and brand of device, and how and when during its handling the exposure occurred.
- Details of the exposure, including its severity and the type and amount of fluid or material. For a percutaneous injury, severity might be measured by the depth of the wound, gauge of the needle, and whether fluid was injected; for a skin or mucous membrane exposure, the estimated volume of material, duration of contact, and the condition of the skin (e.g., chapped, abraded, or intact) should be noted.

- Details regarding whether the source material was known to contain HIV or other blood borne pathogens, and, if the source was infected with HIV, the stage of disease, history of antiretroviral therapy, and viral load, if known.
- Details regarding the exposed person (e.g., hepatitis B vaccination and vaccine-response status).
- Details regarding counseling, post-exposure management, and follow-up.

Each occupational exposure should be evaluated individually for its potential to transmit HBV, HCV, and HIV, based on the following:

- The type and amount of body substance involved.
- The type of exposure (e.g., percutaneous injury, mucous membrane or non-intact skin exposure, or bites resulting in blood exposure to either person involved).
- The infection status of the source.
- The susceptibility of the exposed person.

All of these factors should be considered in assessing the risk for infection and the need for further follow-up.

Practice infection control policy

Infection control is of prime importance in this practice. It is essential to the safety of our patients, our families and us. Every member of staff will receive training in all aspects of infection control, including decontamination of dental instruments and equipment, and the following policy must be adhered to at all times. If there is any aspect that is not clear, please ask .....
You might not be the only person who is unclear and it is useful to discuss the policy frequently to ensure that we all understand its implications. Remember, any of our patients might ask you about the policy, so make sure you understand it.

- All staff must be immunized against hepatitis B and a record of their hepatitis B seroconversion held by the practice owner. For those who do not seroconvert or cannot be immunized medical advice and counselling will be sought. In these cases it may be necessary to restrict their clinical activities.
- The practice provides protective clothing, gloves, eyewear and masks that must be worn by dentists and assistants during all operative procedures. Protective clothing worn in the surgery should not be worn outside the practice premises.
- Before donning gloves, hands must be washed using .....……. Any glove that becomes damaged must be replaced and a new pair of gloves must be used for each patient.
- Before sterilization, re-usable instruments should be cleaned either by placing in the ultrasonic cleaner or washer/disinfector or washed in a designated area by hand under water using a long-handled brush. Inspect instruments for residual debris and re-clean if necessary. Instruments are then rinsed under running water before being sterilized using an autoclave. Heavy-duty gloves and eye protection must be worn when handling and cleaning used instruments. All instruments that have been potentially contaminated must be sterilized. Single-use items must not be decontaminated and re-used.
- Sterilized instruments should be stored in covered trays / pouches.
- Working areas that have instruments placed on them during treatment will be kept to a minimum, clearly identified and, after each patient, cleaned with ……..……. (detergent) and disinfected using .....
- Needles should be re-sheathed only using the re-sheathing device provided. Needles, scalpel blades, LA cartridges, burs, matrix bands etc shall be disposed of in the yellow sharps container. This must never be more than two-thirds full.
- All clinical waste must be placed in the appropriate sacks or bins provided in each surgery. The sack must be securely fastened when three quarters full and stored in the designated area.
- All dental impressions must be rinsed until visibly clean and disinfected using ……...…… (as recommended by the manufacturer) and labeled as 'disinfected' before being sent to the laboratory. Technical work being returned to the laboratory should also be disinfected and labeled.
- In the event of an inoculation injury, the wound should be allowed to bleed, washed thoroughly under running water and covered with a waterproof dressing. The incident should be immediately discussed with ……..... to assess whether further action is needed. Advice on post-exposure prophylaxis can be obtained from…….. Record the incident in the accident book.
- Any spillages involving blood or saliva or mercury will be reported to .....
- Anyone developing a reaction to protective gloves or a chemical must inform ..... immediately
- ALL STAFF WILL OBSERVE TOTAL CONFIDENTIALITY OF ALL INFORMATION RELATING TO PATIENTS OF THE PRACTICE

Date . . . . . Review date . . . . . .

Infection Control Checklist

Infection control checklist

At start of day/session

Fill the autoclave reservoir and run the autoclave for a complete cycle

Record the sterilization parameters reached in your autoclave logbook

Compare these with the manufacturer's recommended parameters

Before patient treatment

Ensure that all equipment has been sterilized or adequately disinfected (if it cannot be sterilized)

Put disposable coverings in place where necessary

Place only the

Wear gloves, masks and protective eyewear and protective clothing

Provide eye protection for patient

Wash hands before gloving; a new pair of gloves must be used for each patient

Change gloves immediately if they are torn, cut or punctured

Use rubber dam to isolate where appropriate

Use high-volume aspiration

Ensure good general ventilation of the treatment area

Handle sharps carefully and only re-sheath needles using a suitable device

After patient treatment

Sterilize cleaned instruments using an autoclave and store covered

Clean and disinfect all contaminated work suraces

Clean and disinfect impressions and other dental appliances before sending to laboratory

Prepare surgery for next patient

At the end of each session

Dispose of all clinical waste from the surgery area

Clean and disinfect all work surfaces thoroughly

Disinfect the aspirator, its tubing and the spittoon

Clean the chair and

appropriate instruments on bracket table

Set out all materials and other essential instruments

Update patient's medical history

During patient treatment

Treat all patients as potentially infectious

Dispose of sharps via the sharps container

Segregate and dispose of clinical waste

Clean and inspect all instruments to ensure visibly clean before placing in an ultrasonic cleaning machine or disinfector

the unit

Empty and clean ultrasonic cleaning machine and leave to dry.

At the end of the day

Drain autoclave chamber and water reservoir to remove all residual water and leave to dry

SOURCES

Web Sites and Electronic Articles Sources

http://www.hiv.bg/infectcontroldent.english.htm
Articles discussing Infection Control in Dentistry
I used the articles about "Blood borne Disease Transmission"
http://www.cdc.gov/mmwr/preview/mmwrhtml/00033634.htm
An article discussing Recommended Infection-Control Practices for Dentistry
http://www.dh.gov.uk/assetRoot/04/12/09/05/04120905.pdf
advice sheet infection control in dentistry. Found in the Department of Health's website.
http://www.ada.org/prof/resources/topics/cdc/guidelines_cdc_infection.pdf
Morbidity and Mortality Weekly Report
December 19, 2003 / Vol. 52 / No. RR-17
Guidelines for Infection Control in Dental Health-Care Settings 2003
http://www.cdc.gov/oralhealth/infectioncontrol/
National Center for Chronic Disease Prevention and Health Promotion
Oral Health Resources
Infection Control

Useful website addresses for information

http://www.bda-dentistry.org.uk/
The British Dental Association website

http://www.gdc-uk.org/
The General Dental Council website details the ethical obligations of UK dental practitioners

http://www.doh.gov.uk/
The Department of Health's website on which you will find information on health and social care guidance, Publications and policy

http://www.nhsestates.gov.uk/
NHS Estates website. NHS Estates is an executive agency of the Department of Health

www.decontamination.nhsestates.gov.uk/
Recently established site to develop the NHS Estates decontamination agenda

http://www.show.scot.nhs.uk/
On line health information from NHS Scotland

http://www.wales.gov.uk/subihealth/index.htm
The Health of Wales Information Service (HOWIS) on the National Assembly for Wales Internet site

www.dhsspsni.gov.uk/
The Northern Ireland Health Department Website

http://www.medical-devices.gov.uk/
The Medical Devices Agency Website. Essential reading for hazard notices and warnings

http://www.hse.gov.uk
The Health and Safety Executive website

http://www.ada.org/
American Dental Association Website, up-to-date and useful information

http://www.fdiworldental.org/
The FDI World Dental Federation has policy statements on infection control developed for a world audience

http://www.who.int/en/
The World Health Organization site

http://www.hepnet.com
The Hepatitis Information Network

http://www.fda.gov/
The FDA Website has information about regulated products and agency policies of interest to the medical community

http://www.cdc.gov/
The USA Centers for Disease Control and Prevention (CDC) is responsible for disease prevention and control, environmental health, and health promotion and education activities for the United States

http://www.osap.org/
Founded in 1984, OSAP is a group of dental practitioners, allied healthcare workers, industry representatives, and other interested persons with a collective mission to promote infection control and related science-based health and safety policies and practices

http://www.apic.org/
The USA based Association for Professionals in Infection Control and Epidemiology. Its purpose is to “influence, support and improve the quality of healthcare through the practice and management of infection control and the application of epidemiology in all health settings”

http://www.icna.co.uk/
New UK site for the Infection Control Nurses Association is now generating some useful information
about current concerns such as hepatitis C