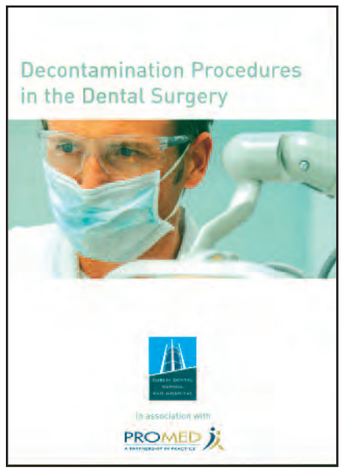
guidelines for best practice in cross-infection control

a reference guide for all dental professionals

PROMED
A PARTNERSHIP IN PRACTICE

introduction

With all the information currently available on the topic of Infection Control in Dentistry, there has never been a better time to ensure that you are providing a service that promotes best practice.



Relevant publications include:

The HSE paper (5B) which covers recommended practices for decontamination of reusable instruments used in dentistry for local decontamination areas (LDA).

The Dental Council also issued their code of practice relating to infection control in dentistry

Promed, in conjunction with Dublin Dental School and Hospital has released an educational DVD which was created specifically for dental professionals in a practice setting with particular focus on the following areas: Personal Protective Equipment and Handwashing, Decontamination of Patient Treatment Area, Waste Management, Cleaning and Decontamination of dental instruments, Manual Cleaning, Ultrasonic Cleaning, Use of the Washer/ Disinfector. This DVD is endorsed by the Dental Council and the Irish Dental Nurses Association.

As practice sizes grow and the number of patients increase, it is important that cross infection control standards are not compromised between patients for both the benefit of the patient and the dental team in the surgery. Enough time should be allocated between patients in order to implement standards precautions to reduce the risk of micro organisms from know and unknown sources of infection (blood, body fluids excretions, secretions etc.) These precautions apply to the care of all patients regardless of their diagnosis or presumed infection status.

The principle of standard precautions between patients include:

- Hand washing, using an appropriate hand disinfectant
- Change of protective barriers i.e. protective shields and disposable tips
- Correct disposal of all healthcare waste including needles or sharps
- Wipe down of all surgery equipment and surfaces
- Effective cleaning and sterilisation of all equipment and instruments used in the previous treatment

Current evidence indicates that, if recommended infection control procedures are followed and accidental inoculation by sharps is avoided, there is minimum risk of transmission of serious infectious diseases during dental treatment.

Every practice should have an infection control policy and standard operating procedure based on a thorough knowledge of the risks and practical measures that can be taken, using best practice guidelines and recommendations.

Ultimately dentists have a duty to take appropriate precautions to protect their patients and their staff from risk of cross infection as well as ensuring staff understand and implement the infection control policy and procedures of the practice.

areas of focus:

general surgery cleaning

Surfaces of dental units may be contaminated with potentially infective material. Therefore a complete change of barriers and disinfection of contaminated zone surfaces must be carried out between each patient.

Effective surface decontamination is a two-stage process involving first pre-cleaning and then disinfection. The aim of this process is to reduce the microbial load below the minimum infective dose.

Pre-cleaning: Spray and surface with a detergent and wipe thoroughly with a strong gauze sponge or strong tissue towel. It is essential to remove as much of the protinaceous material such as blood, saliva and microorganisms as possible.

(i) Cleaning should be done with disposable cloths or disinfectant wipes

(ii) Cloths and mops should not be steeped as this can lead to breeding of gram negative bacilli. Ideally cloths should be disposed of straight away and a mop with a disposable floor wipe should be used

(iii) For dry cleaning floors a brush should not be used as this raises the dust. Instead a dust attracting dry mop or vacuum cleaner is recommended. There should not be any carpets in clinical areas

(iv) Multi-touch equipment (e.g. phones, light switches, keyboards) should be cleaned thoroughly by damp dusting with a detergent solution

(v) Surgery toys should be cleaned daily with a detergent solution. It is advisable to have toys that can easily be cleaned. Soft toys are not recommended

(vi) Ensure patient seating and other furniture within the waiting room is damp dusted with a detergent solution daily. It would be advisable to invest in furniture that can withstand daily cleaning

Disinfection: This stage can be carried out by using 70% denatured alcohol spray or wipes. The alcohol solution should be allowed evaporate from the surfaces - its contact time for effective disinfection is approximately 3 minutes. (Check manufacturers details for contact time and efficacy.) Surgery surfaces should be dry for the next patient.

(i) Wear appropriate protective clothing, as many solutions are potentially toxic or irritant.

(ii) The surgery should be well ventilated.

(iii) Where the work surface is penetrable it should be covered with impervious disposables coverings, which are changed between patients and the underlying surfaces cleaned.

(iv) Due to infection control consideration, it is recommended that each patient has his/her treatment completed in one single sitting in the dental surgery, i.e. do not give local anaesthetic, send the patient to the waiting room and treat another patient.

(v) Contaminated zone surfaces refer to those surfaces that are at risk of clinical contamination during a clinical session. They include the working zone, the bracket table and the handle of overhead light.

(vi) Clinical surfaces and trolleys should be disinfected thoroughly at the start and end of each procedure

(vii) All recently cleaned surfaces and equipment should be allowed to dry thoroughly before being used again as drying helps in the elimination of bacteria. If the area or equipment is required before fully dry then paper towels can be used to complete drying

For further information on the Promed educational DVD entitled "Decontamination Procedures in the Dental Surgery" call Promed on freephone 1800 619 619

recommended hand washing technique

PREPARATION

Remove hand and wrist jewellery (wedding band allowed.)
N.B. Keep nails short.

Wet hands thoroughly under running water.

Apply 5ml of soap/antiseptic soap to cupped hand by pressing dispenser with heel of hand. (Do not use finger tips on the dispenser)

HANDWASHING - process takes at least 15 seconds

Wash hands and rub palm to palm 5 times

Rub right palm over the back of the left hand up to wrist level 5 times. Do the same with the other hand.

With right hand over back of left hand rub fingers 5 times. Do same with other hand.

Rub palm to palm with fingers interlaced.

Wash thumbs of each hand separately using a rotating movement

Rub the tips of the fingers against the opposite palm using a circular motion. Also ensure nail beds are washed.

Rinse hands thoroughly under running water to remove all traces of soap.

Turn off taps using elbows.

Dry hands completely using a disposable paper towel.

Discard paper towel in waste bin. Open bin using foot pedal only to avoid contaminating clean hands.

achieving optimum hand hygiene

Hand hygiene is now recognised as the single most important procedure undertaken by healthcare professionals to counter the spread of infection. Looking at NICE and SARI recommendations we have put together a quick reference for correct hand hygiene technique.

It is accepted that hands should be decontaminated

(i) Before and after every episode of direct patient contact

(ii) Between different activities for the same patient

(iii) After any other contact that could contaminate the hands

Patient treatment areas should always have adequate hand washing facilities. Ideally there should be a hand basin with lever operated mixer taps, liquid soap from a dispenser, a good supply of paper towels and a foot pedal bin for disposal of paper towels.
Prior to hand washing/decontamination all hand jewellery should be removed, cuts should be covered with a waterproof dressing and nails should be short, clean and nail varnish free.

If hands are visibly clean they may be decontaminated immediately using an alcohol based hand gel or rub. The user must ensure that the gel/rub is applied for the correct length of time and must come into contact with all surfaces of the hand. Prior to commencing patient care or other activity the hands must be completely dry. **(Please see page 4 for correct alcohol gel/rub technique)**

Prior to hand decontamination, if hands are visibly soiled or grossly contaminated (e.g. post using the lavatory) they must be washed with warm water and liquid soap. **(Please see page 2 for recommended hand wash chart)**

A good quality liquid soap should be used and hands must be dried thoroughly with paper towels. (Please note that Terry Towels and warm hand dryers are not recommended for health care facilities) If hands are left slightly moist they become an excellent vector for bacteria and microorganisms.

Once hands have been washed correctly it is now possible for them to be decontaminated effectively using the alcohol gel/rub technique.

Finally as a result of rigorous hand hygiene the hands may suffer drying and chapping. It is recommended that an emollient hand cream is used regularly to prevent these conditions.

recommended alcohol hand rub technique

1st step:
Palm to palm.
Attention: including wrists

2nd step:
Palm of right hand over back of left hand and palm of left hand over back of right hand.

3rd step:
Palm to palm with fingers interlaced.

4th step:
Back of fingers to opposing palms with fingers interlocked

5th step:
Rotational rubbing of right thumb clasped in left palm and vice versa

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

- Apply the disinfectant to the dry hands
- Following the procedure shown above, vigorously rub the product into the hands up to the wrist for 30 seconds
- Carry out the movements of each step five times
- After the end of step six, individual steps are repeated for the duration of the contact time
- Ensure that the hands remain moist with product throughout the rub-in time. If necessary, add more hand disinfectant

Standard rub method according to EN 1500

dental nurses uniforms and personal protective equipment

Hospitals throughout Ireland have a standard uniform policy. This is usually written up by a policy team to reflect the practices within that particular hospital. However there appears to be a general consensus between most hospitals and the principles can also work within a general practice setting.

Uniforms can often become contaminated by disease- causing bacteria and research shows that the areas on a uniform where maximum contamination occurs is where greatest hand contact occurs e.g. pockets, cuffs and apron areas. Contact with these areas allows washed hands to become re-contaminated.

The general minimum standards for uniform care are:

The nurse should change out of the uniform at the end of each shift.

A uniform should not be worn on consecutive days without being laundered.

Uniforms should be transported separately from other items.

The uniform should not be worn outside the place of work and not worn into any commercial premises.

Uniforms should be machine washed, separate from other items at 65-71 degrees. Hand washing of uniforms is ineffective

It is advisable to have a spare uniform available at work in case the one being worn becomes contaminated.

It should be noted that uniforms alone would not protect both the patient and the healthcare worker from the risk of cross infection. Staff should assess each procedure that they undertake to see if there is a requirement to wear protective barriers.

Such barriers would include:

(a) Gloves: Be sure to consider patient and healthcare worker allergies to latex when selecting glove. New gloves are worn for each patient and changed during procedures when necessary.

(b) Plastic Aprons: Should be worn when uniform is at risk of contamination with body fluids e.g. while manually washing instruments etc.

Aprons are disposable single use items and should be removed and disposed of once the specific task has been completed

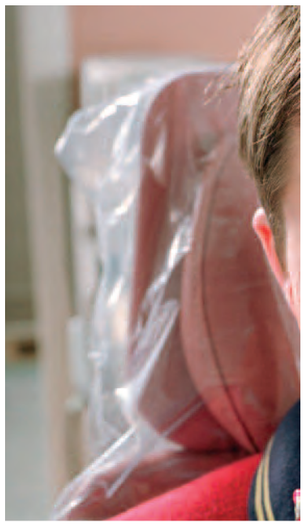
(c) Eye protection: Eyes should be protected with appropriate protective eyewear. Protective glasses with top and side shields are strongly recommended and should be disinfected between patients. Patients eyes must always be protected against possible injury.

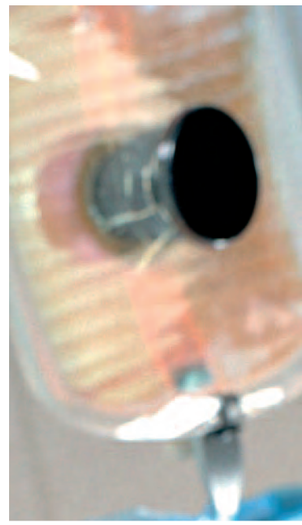
(d) Masks: A well-fitted, fluid resistant facemask with 95% BFE bacterial filter should be worn, particularly when using high speed rotating instruments, ultrasonic scalers, or any surgical procedure.

Masks should be:

- Worn close fitting
- Changed between patients
- Changed if wet
- One use only never re-use

use of protective barriers





Immunisation

Vaccination against hepatitis B virus is strongly recommended for all clinical dental personnel including dentists, dental nurses, dental hygienists and students.

Protection is also advised against diseases such as tuberculosis, varicella, poliomyelitis, measles, mumps, diphtheria and tetanus.

Barriers should be used in the following areas and changed between patients if potentially contaminated: Handles of dental cart, light, air/water syringe.

Handpieces, turbines and tubing

(including suction tubing). Handpiece should be covered with a barrier, such as Disposashield No. 2 or 3. This will cover the handpiece and tubing but not the bur.

Curing light

Disposashield or similar can be used to cover the fibre optic part of the curing light also covering in the handle. Do not cover the air inlet and exhaust, as the device will overheat.

X-ray equipment / film

The x-ray tube can be covered using either a ‘Disposa Shield’ or another product. The remote button control can also be covered. Most of the intra-oral x-ray films have a plastic barrier for enhanced cross infection control. Films without a pre-existing barrier can be covered with clingfilm.

Instrument trays

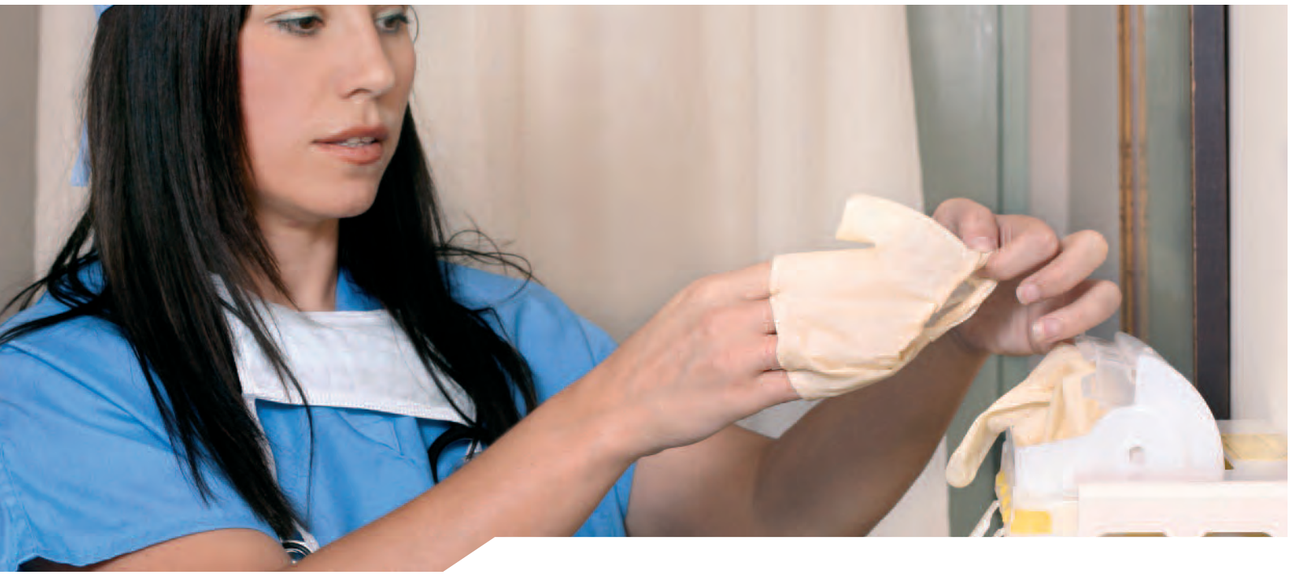
Trays should be covered with an impervious cover (Disposashield or similar) as well as a tray liner.

Headrest

The dental chair headrest should be covered, though this is not considered to be as important as covering the areas mentioned above.

When changing barriers, every effort should be made to avoid contaminating the surface that has been covered. If there is any chance that the surface has been contaminated either in use during removal of the barrier, it should be cleaned. All surfaces, which are covered with barriers, should be disinfected at the end of each session, at a minimum.

disposal of health care waste and sharps



Health Care Waste is defined as the solid or liquid waste arising from health care or health related facilities.

Categories include:

Health Care Non-Risk Waste: Waste not contaminated with body fluids

Health Care Risk Waste: Waste contaminated with body fluids and hazardous to others

All waste generated in medical practice must be segregated into one or other of these categories and disposed of appropriately. All producers of waste have a duty to ensure that the necessary precautions are taken when disposing of heath care waste.

(i) Waste should be carefully labelled, secured and stored safely

(ii) Protective clothing should always be worn when handling waste, e.g. apron, mask and gloves

(iii) Waste should be disposed of in appropriate coloured bags

(iv) Bags should not be overfilled as this can lead to spillage and bag splitting. It is recommended to fill bags to two thirds full

Black Bags are used for Health Care Non Risk waste and can be disposed of to a landfill site.

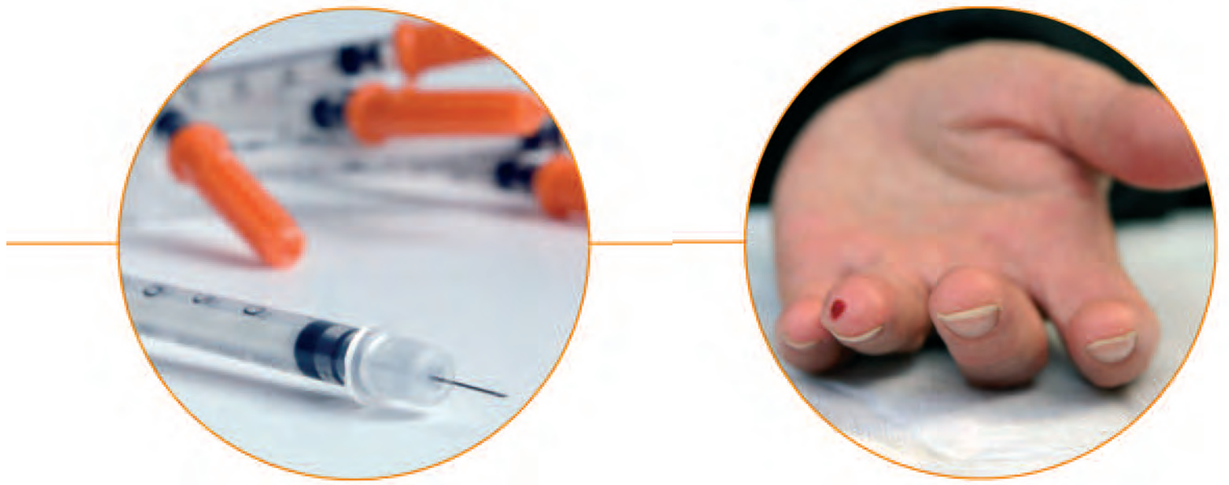
Yellow Bags are used for Health Care Risk Waste, and must be disposed of in compliance with the law and the regulation/polices of the Department of Health and Children and the Department of the Environment.

Pharmaceutical waste should be returned to the nearest pharmacy. Disposal of controlled drugs should be recorded in the controlled drugs book by 2 medical or nursing staff also listing method of disposal.

Disposal of Sharps
It is always the responsibility of the person using the sharp to dispose of it correctly Sharps within medical practice include anything that has the ability to puncture the skin e.g. needles, surgical instruments.

All sharps should be disposed of in a rigid safe container specifically designed for the purpose and conforming to EU standards.
It is important that the containers are assembled correctly and are fully sealed once two thirds full.

measures to prevent needle stick injuries



Measures to prevent needlestick injury

(i) Resheathing needles represents a significant hazard and should be avoided if possible by using safety needle systems, e.g. 'Safety Plus' needles.

(ii) If resheathing is used, single-hand resheathing of needles (Bayonette Technique) should be practiced.

(iii) Never handle sharp instruments by the working end.

(iv) Safe disposal of sharps is essential and they should be disposed of at point of use.

(v) Consider use of a proprietary system to minimise the handling of sharps.

(vi) Ensure you take responsibility for your own sharps.

(vii) Needles should never be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal.

Management of needlestick injury

The staff member affected should:

(i) Report the incident immediately.

(ii) Wash the area immediately under running water or use an eye-washing bottle as appropriate.

(iii) Make the wound bleed for three to four minutes whilst continuing to wash the area. Dry area with paper towel.

(iv) Cover the wound with water-impermeable sticking plaster and consider double gloving any hand injury if continuing to work.

(v) Seek appropriate medical advice.

(vi) The source patients should be identified and arrangements made for blood samples to be obtained, with informed consent. This should be tested for presence of blood borne viruses hepatitis B, hepatitis C and HIV.

(vii) Arrangements must be made for blood samples to be taken from staff member with informed consent. One sample is marked for storage and is retained in the relevant laboratory. The other is analysed to determine the staff member's hepatitis B antibody level.

(viii) Further assessment, treatment and follow up of the staff member are performed in accordance with current best practice. Arrangements should be in place for speedy assessment and treatment.

(ix) Counselling, reassurance and information may be required and arrangement for accessing this should be in place as appropriate.

(x) Appropriate records must be kept.

Decontamination of impressions and prosthetic appliances

Decontamination of impression and prosthetic appliances

(i) All impression should be rinsed in running water to remove all visible signs of contamination.

(ii) They must be disinfected with an appropriate disinfecting agent before being sent to the dental laboratory.

(iii) The single use of disposable impression trays is recommended.

(iv) Impressions and prosthetic appliances should be suitably packaged when sending by post to the laboratory.

(v) Technicians should wear gloves when handling impressions and pouring models.

(vi) Prosthetics appliances received from a laboratory should be disinfected prior to insertion into the patient's mouth.

care of aspirators and tubing

Effective high-speed aspiration is essential

(i) Aspirators and tubing (suction hose) should be cleaned regularly in accordance with manufacturers instructions.

(ii) The system should be flushed through twice daily with the recommend non-foaming disinfecting agent.

(iii) Filters should be removed and disinfected at the end of each day as per manufactures instructions.

(iv) All removable components of the suction hoses should also be removed, washed and disinfected, or sterilised, if possible.

Portable Aspirator

(i) If a portable aspirator is used, at the end of each clinical session the contents of the container, which collects the waste liquid, should be emptied directly into a sluice or toilet and never into the surgery sink.

(ii) Care should be taken to avoid splashing the surrounding surfaces, which should be washed down and disinfected afterwards.

(iii) At the end of each day, the container should be scrubbed down and disinfected with a suitable non-foaming disinfectant.

(iv) A disinfectant solution recommended by the manufactures should be sucked through the tubes to clean them, left overnight in a bottle and emptied the next morning.

(v) Many new dental units have cleansing programmes to disinfect the tubing and help remove biofilm. Manufacturer's recommendations should be followed.

care of air and water lines

Care of air and water lines

The development of biofilms in air and water tubes is a considerable health risk both for the patient and the dental staff. Regular cleaning of these tubes reduces this hazard.

Only sterile, distilled or other high quality water should be used in the dental cart. After each patient, a combination of air and water should be discharged through the 3-in-1 syringe. The same should be done for any handpiece used and the ultrasonic scaler if used.

The following process is recommended for all dental units fitted with an independent water bottle, including Belmont, ADEC and DCI.

To ensure your water quality meets the current EU standard as detailed in the Directive EU98/83 we recommend you use a system (such as the Alpron system) that includes a biofilm removal protocol.

(This system should be used even for NEW surgery installations.)

Stage 1
Complete the biofilm removal initial purge by following the instructions supplied with the Alpron Starter Pack. This will ensure you reach the standard of less than 100 c.f.u per ml (Colony Forming Units)

Stage 2
Mix the Alpron in the supplied 5 litre container to a 1% concentration, fill the bottle on the unit and express water from each outlet for 30 seconds

At this stage you are ready to treat patients.

When using the Alpron system the DAILY Procedure is very simple

(i) In the morning activate each water line for 10-15 seconds (This removes the Alpron solution that has been in the lines overnight, so fresh is used on the first patient of the day)

(ii) The bottle on the unit is NOT removed over night, and is only removed for either refilling with the 1% Alpron solution or for cleaning

(iii) When mixed Alpron is active for 4 weeks

(iv) If Alpron is not used on a permanent basis within the water bottle at the 1% concentration, and only water (tap, sterile or distilled) is used, a biofilm can reoccur within as little as 72 hours

Alpron has been clinically tested at Glasgow Dental Hospital and the results published in the British Dental Journal in November 2002. It has also been peer reviewed by leading independent microbiologists.

The system is easy to use, economical (approx €0.50 per day per unit)

A simple audit tool is available to monitor the water quality on a quarterly basis using R2A Agar Dip Slides, the manufacturers will then issue a certificate to the practice showing compliance to the current EU Standard.

Remember do not use harsh chemicals in your dental unit, this can lead to expensive repairs or even a replacement. ALPRON WILL NOT damage your dental unit.

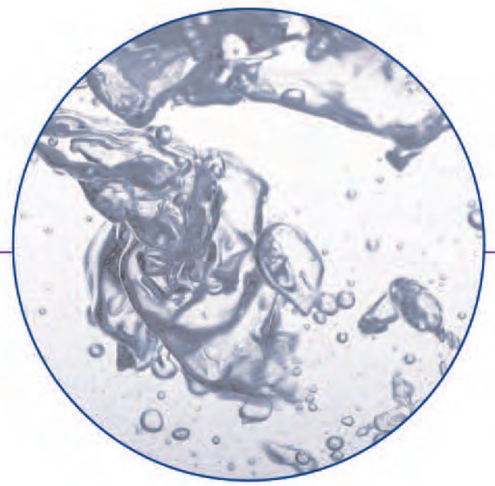
Care of the Air / Water Syringe

The following procedure is recommended for the air / water syringe:

- The syringe should be run for 20-30 seconds discharging air, water or a combination after each patient to flush out contaminants that may have entered the air / water line system.

For information on our Alpron water line treatment, an effective system to remove the biofilm that builds up on all dental units, plus an ongoing maintenance treatment to ensure that no further problems occur, contact Promed on freephone 1800 619 619

cleaning and washing of instruments



Prior to sterilising instruments in an autoclave it is important to clean them thoroughly to remove all blood, mucous and tissue deposits from the equipment. Cleaning removes only visible contamination. Failure to clean instruments correctly can mean that the steam is unable to penetrate to all surfaces of the instruments and therefore makes effective sterilisation impossible.

Ideally an ultrasonic cleaner and washer/disinfector should be used to wash instruments. These devices involve less handling of contaminated instruments and are more effective.

The ultrasonic cleaner uses high frequency radio waves to generate air bubbles in the detergent, which implode when the pressure changes from positive to negative. The process known as cavitation releases the debris. Once ultrasonic cleaning has taken place instruments should be washed in hot water and dried with a lint free cloth. On a daily basis the ultrasonic bath should be emptied, cleaned and left to dry.

Washer-disinfectors which are especially designed for cleaning instruments are now widely available. Featuring pre-programmed, reproducible cycles they offer the most comprehensive means of automatic instrument cleaning.

(i) They should be used with a suitable detergent

(ii) Most washer-disinfectors have a rinse cycle and drying cycle, if they don't then instruments must be thoroughly rinsed and dried by hand

(iii) Items should be checked for cleanliness and damage post washing

(iv) Machine should be emptied and cleaned after use

Washer-disinfectors must NOT be used as a substitute for instrument sterilisation. We would recommend that you buy a washer-disinfector with a printer to ensure traceability.

If hand washing of instruments is unavoidable then the following should be taken into consideration.

(i) There should be a designated area within the practice for this purpose with a deep sink for cleaning instruments and another sink for rinsing the instrument

(ii) The person responsible for the washing should wear gloves, a plastic apron and eye protection (in case of splashes). Masks should also be worn as there is a risk of inhalation of tiny water droplets created by using brushes on the instruments

(iii Instruments should be cleaned in warm water and detergent

(iv) Firstly the debris should be loosened with a nylon brush whilst keeping the instruments under water to minimise splashing

(v) After ensuring that the instruments have been washed thoroughly, they should be rinsed well in clean water and dried individually on a clean, lint free cloth

Further measures:

Following cleaning by any of the above methods all instruments should be checked to ensure that they are thoroughly dry and that any joints move freely but are not loose.

Instruments should be inspected prior to pouching and sterilisation. If dealing with a small or delicate item, a magnifying glass can be used to help in their examination.

When sterilising forceps they should be closed on the first ratchet and any sharp points should be protected from potential damage by other instruments in the same load.

Defective instruments should be discarded immediately and replaced.

packing and loading instruments for sterilisation

Packing Instruments for Sterilisation

If the instruments are to be used immediately after sterilisation they can be placed directly onto the appropriate autoclave tray without any form of packaging being necessary.

Note that these instruments must be used immediately and once the autoclave door has been opened it has become a non-sterile environment thus instruments stored within it are now not sterile!

It is not advisable to sterilise instruments and to then put them into pouches and re-sterilise them in a non-vacuum autoclave for the purpose of storing them. The moment you place a sterile instrument into a pouch which has a non-sterile interior you immediately contaminate the instrument. In a non-vacuum autoclave the steam cannot penetrate the pouch thus the interior of the pouch plus the instrument inside remain non-sterile and unfit for use.

If instruments are going to be stored for use at a future time the use of appropriate packaging will help to maintain the integrity of the sterilised items. **Please note that pouched instruments can only be processed in a vacuum autoclave.**

(i) Only sterilisation packaging such as pouches that are suitable for use within an autoclave should be used

(ii) These normally come with a process indicator, which advises the user that the instruments have been through a successful sterilisation process

(iii) Clear fronted pouches are available in a wide range of sizes or they can be purchased on a reel allowing the user to cut off appropriate lengths prior to use

(iv) Sterilisation pouches can be used utilising different closure methods such as plain and heat and self-seal. The packaging technique for both is the same

(v) The pouches being used should be folded around the contents as tightly as possible to remove any trapped air

(vi) Clear fronted pouches are available with heat-sealing bands and require a heat sealer to seal them

(vii) Self-seal pouches require no apparatus and are secured by pressing a coated flap at the top of the pouch to the opposite face of the pouch

(viii) Once sealed the pouch should be labelled appropriately listing the contents as well as the date it was packed

Loading Instruments for Sterilisation

Once instruments have been packed correctly it is simply a case of placing the prepared load into the autoclave.

(i) Individual wrapped loads should be placed on their own tray, not stacked directly onto other wrapped loads

(ii) Pouched instruments should be placed in the approved pouch rack

(iii) Unpacked instruments that are placed directly onto the instrument tray should be loaded in such a way so they not touch each other and the height of the load does not interfere with the tray or the chamber above

(iv) If instruments are stacked on top of each other or are touching steam cannot come into contact with all instrument surfaces and sterilisation could be impeded

(v) No items should be placed on the floor of the autoclave chamber

different autoclave types

All instruments likely to be contaminated must be sterilised after use

Sterilisation procedures must be effective against all known pathogens

The highest temperature compatible with the equipment to be sterilised should be used

Packs should be dry when removed from autoclave

Types of autoclave and suitable loads
Non-vacuum 'Type N' autoclaves: Are steam sterilisers without a vacuum phase. These autoclaves should only be used for solid instruments, which are placed directly onto the instrument tray (unwrapped and un-pouched). In no instance should hollow, pouched or wrapped items be sterilised in non-vacuum autoclaves. There is no guarantee that steam will penetrate to all instrument surfaces, to effect sterilisation of the instrument.

'Type S' vacuum autoclaves: Employ a single pulse pre-vacuum phase and are suitable for sterilising pouched solid or un-pouched hollow instruments (where the diameter to length ratio is no greater than 110:1)

A 'Type B' vacuum autoclave: Employs a triple pulse, pre-vacuum phase and is suitable for sterilising a wide variety of loads including complex hollow instruments, sets of instruments, porous items and loads which are pouched or wrapped in the appropriate materials.

Because microorganisms will not be destroyed unless they come into direct contact with steam, any air that remains trapped within the instrument or load will act as a barrier to the steam and prevent parts of the load from being sterilised. The triple pulse, pre-vacuum phase of a 'Type B' vacuum autoclave utilises a powerful vacuum pump to forcibly remove all the residual air from within the chamber and load, enabling steam to circulate freely and rapidly, and allowing good penetration of the steam into the load, thus ensuring fully effective sterilisation.

Vacuum autoclaves feature vacuum assisted drying at the end of the sterilisation phase. The rapid removal of steam and the creation of a vacuum within the chamber and load help to ensure all contents are thoroughly dry when removed from the autoclave.

This offers the user significant advantages that bring a practical benefit, as equipment such as single solid or hollow instruments, sets for surgical procedures and porous items can be wrapped in approved packing materials that will then maintain the contents in a sterile condition ready for use at a later time.

choosing the correct autoclave

Case Size
Before you buy establish where you intend to keep your autoclave. If you have a space restriction determine if the autoclave has a smaller case that will fit confined spaces, If space is severely restricted, it maybe worth considering the purchase of a smaller autoclave that is specifically designed for sterilising small instruments

Chamber Size
Choose an autoclave with the appropriate chamber diameter for your needs - the bigger the chamber the greater the capacity for instruments, although a smaller chamber will usually mean faster overall cycle times and may be more appropriate for your needs.

Cycle time
The quicker the cycle, the quicker the turnaround of instruments. Ensure the autoclave has the appropriate choice of cycles to meet your sterilising requirements.
Heater Design
Choose one that heats the water outside the chamber. This ensures that the load will be completely dry and minimises the amount of sterilised water lost between cycles - which costs you money.

Single Use Water
Autoclaves that use fresh sterile/distilled water for each cycle offer superior performance as there are no contaminates from previous cycles being used in the sterilising process. The reservoir and chamber of the autoclave should be drained at the end of every working day and left to dry

Aesthetic Design
Make your life easier. Choose an autoclave that looks good and one that can be easily maintained with minimum effort. Consider a plastic-bodied autoclave rather than metal. Plastic removes the risk of rust and upholds maximum good looks with minimum of effort. A good looking, modern autoclave will be in keeping with today's modern practices and, will present a good image to patients, reassuring them that they're in safe, caring hands.

Printer Facility
Printers make permanent recording easy but do cost extra. If you do not invest in a printer initially, ensure that you can refit one at a later date.

Guarantees/Warranties
Check the period of warranty offered with the autoclave. Ensure that your autoclave can be set up and demonstrated by an engineer from the company you buy from. It would be advisable to set up a service contract with your supplier to ensure proper upkeep with regular checks.

Quality Assurances
Quality standards are there for a reason. Check with the manufacturer whether their sterilisers conform to the Medical Devices Directive (93/42 EEC) and are CE marked.
It is the responsibility of the operator to ensure that daily checks are carried out on your autoclave.

Regular checks should include:

(i) The 'steam penetration test' using a Bowie Dick. If the Bowie Dick test should fail a second one should be done. If this should also fail then the autoclave should be put out of commission and serviced. The Bowie Dick packet should be placed on its own in the autoclave when the cycle is run.

(ii) The 'vacuum leak test' which is usually a pre-programmed cycle in the autoclave.

(iii) Examine the door sealing gaskets

(iv) Always ensure there is sufficient water in the reservoir.

Records
Details of every sterilisation cycle should be kept.
The printout and strip should be stored along with the list of specific instruments sterilised in that cycle.

waste amalgam disposal

Growing environmental concern over the accumulation of mercury in some fish has led state and local environmental authorities to pursue stricter regulation of mercury in wastewater, much of which is attributable to dental practices.

Increasing pressure on local authorities is leading to calls for the mandatory introduction of Waste Amalgam Separators, which can prevent over 95% of all heavy metals from entering the sewage water, which in turn enters our ecosystem.

Amalgam Separators are a low cost, efficient and easy to use solution for removing these heavy metals. They are also easy to install, which means little downtime is required, and are maintenance free, generally requiring annual replacement.

Ensure the amalgam separators are EN ISO 11143:2008 compliant.

For further information please call Promed on freephone 1800 619 619

training in Infection Control and the protection of staff

Training in infection control and the protection of staff

All dental staff engaged in any aspect of the care of patients should receive thorough training and understand the polices adopted in the practice for the prevention of cross infection and cross-contamination. Adequate training should be given to new staff taking into account the different levels of training required for those who are qualified and those who are unqualified (training details should be documented). Training should be updated annually and appropriate records kept. The dentist should ensure that the immunisation status of all staff is up-to-date at the commencement of employment and is maintained during employment.

The following aspects of infection control should be included:

• Risk assessment on transmission of infection.

Staff should be trained to assess the level of risks to allow them to recognise situations where exposure might be likely and to know how to avoid or minimise risks to patients, staff and others.
Practices should have documented standard operation procedures. These should cover accidental spillage, personal injury or exposure of body fluids or tissues, particularly inoculation injuries. Appropriate reporting procedures should be in place as well as details of how to obtain information on the recommended medical management.

All procedures should be reviewed twice yearly in light of best practice and new evidence to ensure that they are being carried out correctly.

Protection of staff

Vaccination against hepatitis B virus is strongly recommended for all clinical dental personnel including dentist, dental nurses, dental hygienists and students. Protection is also advised against disease such as tuberculosis, varicella, poliomyelitis, measles, mumps, diphtheria and tetanus. Non-pregnant women of childbearing age should be also immunised against rubella if they are not immune. (Vaccination against rubella should be avoided during pregnancy).

It is the ethical responsibility of health care workers who believe that they themselves may have been infected with a blood - borne virus to obtain medical advice, including any necessary testing and if found to be infected, to place themselves under specialist medical care.

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