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*Richard Mason MD Safety Priorities Ltd*

## **Cross Infection Control**

There have been many articles, in this and other publications over the years, regarding cross-infection control. With an apparently perpetual media focus on the subject, the pressures on dental practices are unlikely to dissipate. It may be useful to all readers to have a clear summary of current best practice and minimum acceptable standards in some of the key areas. This should also provide information on the latest developments reducing the risk of cross-infection.

The NHS has launched an initiative under the *Infection Control Framework Agreement 2004* to set guidelines, and hopefully provide suitable funding, for adequate systems to be maintained. Each PCT has been required to carry out full decontamination and infection control process audits within their responsible areas. Some PCT's have already issued clinical governance guidelines linked to the recommendations of the MHRA.

The following guidelines include many extracts from the current BDA advice sheet (Infection Control in Dentistry – A I2) and "Sterilisation disinfection and cleaning of medical equipment": guidance on decontamination from the Microbiology Advisory Committee to Department of Health Medical Devices Directorate.

- Topics covered:
- Practice policy
  - Instrument processing
  - Surface treatment

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## Practice Policy

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.

- Infection Control Policy - 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 describe the practice policy for all aspects of infection control and provide a useful training guide for each member of staff to be competent and confident in its implementation. It should be kept readily available so that staff can refer to it when necessary. Displaying an infection control statement may be appropriate in your practice to help allay patient anxiety and gain their confidence. Never be too busy to answer their questions. Ensure all the members of your practice staff are competent to answer patients' queries or know who to refer to when necessary.

Although a policy will describe the procedure for the practice as a whole, it is useful for each member of staff to receive a copy and to sign a declaration to confirm that the policy has been received and training provided - for example, "I confirm that I have read the practice Infection Control Policy and have received training in all its aspects". A copy of the policy should be displayed in each surgery

- Duty of Care - All dentists have a duty of care to their patients and staff to ensure adequate infection control procedures are followed. It is important that all staff understand the principles of personal protection and that compliance is part of their contracts of employment.

***"Failure to employ adequate methods of cross-infection control would almost certainly render a dentist liable to a charge of serious professional misconduct"***

*(GDC - Maintaining standards. November 1997, as amended May 2001)*

- Incident reporting - All members of the dental team must know who is responsible for ensuring certain activities are carried out and to whom to report any accidents or incidents. Accidents and incidents should always be recorded in the accident book.

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Some accidents and incidents must be reported to the Health and Safety Executive. Accidents and incidents involving the failure of dental instruments or equipment should be reported to the MHRA (MDA).

### **Instrument processing**

Pre-sterilisation Instruments should be thoroughly cleaned after use and prior to sterilization. The instruments should be dry before sterilisation to ensure suitable processing. Washer/disinfectors are most efficient at pre-sterilisation cleaning and several choices of product are now on the market. They can be more expensive but provide an automatic, guaranteed cleaning and disinfection process. Their specification is thoroughly defined in European standards (EN15883). Cycle times vary, but in general it is around 20min's Washer/disinfectors *cannot be used as a substitute for sterilisation procedures*.

Hand-cleaning is the least efficient method and carries additional risk of sharps injury, splashing and cross infection from equipment used, sadly this method is still widely used within most dental practices prior to instruments being placed into the Ultrasonic cleaner.

Ultrasonic cleaners are effective for most instruments, although they can damage the more delicate equipment. They do provide effective cleaning although maintenance and procedure control is critical. For handpieces, (if recommended by the manufacturer), lubricate immediately after cleaning.

Traditionally this has been a manual process but new equipment is currently available to automate and improve this situation. Used correctly, these units can greatly improve the effectiveness of instrument cleaning. Many handpiece manufacturers now strongly recommend this type of equipment.

### **Sterilisation**

- The method of choice for the sterilisation of all dental instruments is autoclaving. Sterilisation 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 134-137°C for three minutes.

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- New autoclaves should have a printer to allow the parameters reached during the sterilisation cycle to be recorded for routine monitoring. TST strips are still currently widely used to monitor the temperatures reached by colour change.
- Hot air ovens, ultra violet light, boiling water and chemical sterilisers **are not** recommended for sterilising dental instruments and equipment.
- The sterilisation process is impaired or prevented by air remaining in the chamber or trapped in the load items.
- Processing wrapped instruments in a conventional downward displacement autoclave may result in inadequate air removal and failure to sterilise. Wrapped instruments and instruments in pouches must be sterilised using a vacuum-phase autoclave.
- If a simple non-vacuum (downward displacement) autoclave is used, it must be preceded by fully effective cleaning.
- If recommended by the manufacturer, lubricate the handpiece after sterilisation and run it briefly before use to clear excess lubricant. Equipment is available to do this automatically.
- Steam sterilizing autoclaves are defined in a European standard (EN13060)
- Successful sterilisation depends upon the consistent reproducibility of sterilising conditions.
  - ✓ autoclaves must be validated before use and their performance monitored by periodic testing, including daily and weekly user tests
  - ✓ the equipment must be properly maintained according to the manufacturer's instructions
- Autoclave logs and printouts should be retained for inspection and monitoring to demonstrate that the autoclave is performing within the recommended parameters.
- The design and use of steam sterilisers have to meet the Pressure Equipment Regulations (1999) and the Pressure Systems Safety Regulations (2000) (PSSR). The PSSR require the pressure system to be inspected periodically to ensure its safety.

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## Water

- 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 sterilisation cycle, it should be free of pathogens and endotoxin (pyrogen free).
- The most effective steam sterilisers do not recycle the contaminated water. It is preferable to have single-use water with associated draining systems.

## Surface cleaning and disinfection

- 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
  
- 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" assists and simplifies the decontamination process. In practice, this means defining the areas that will become contaminated during operative procedures; only these areas need to be cleaned and disinfected between patients. A surgery can therefore be cleaned rapidly. 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

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- 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 minimise inhalation.

There are new surface treatments available that can greatly assist this zoning system. They provide residual disinfection on a surface that reduces the risk of cross-infection

For further help or advice **Call : Richard Mason at:**



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