

Decontamination guidelines (England)

The Department of Health in England has published advice for the dental team on local decontamination: *Health Technical Memorandum 01-05: Decontamination in primary dental care practices*. Accompanying technical guidance will be available soon and copies of the complete advice will be sent to all practices with a NHS contract. Private practices will be sent copies on request.

This advice note provides a summary of the requirements contained in the guidance. The full guidance is available for download at:

http://www.dh.gov.uk/en/Publicationsandstatistics/Publications/PublicationsPolicyAndGuidance/DH_089245

With publication of the full and final guidance from the Department of Health, the BDA will update Advice sheet A12 *Infection control in dentistry* to reflect the new requirements.

The guidance introduces benchmarks for compliance: 'essential quality requirements' and 'best practice'. Essential requirements should be in place within 12 months. There is no timescale for implementing best practice into existing practices, but practices should plan to progress towards it where they can.

All practices need to demonstrate that they have assessed and, where possible, planned for the improvements necessary to implement best practice. Not all practices will be able to fully adopt best practice requirements. Where existing practices are newly commissioned by the PCT or new premises contemplated, best practice should be implemented as far as possible.

Essential requirements

Within 12 months of publication every practice should meet the essential quality requirements, which requires instruments to be reprocessed using a validated decontamination process including a validated steam sterilizer. At the end of the reprocessing cycle instruments should be sterile. In achieving this, practices will need to have certain processes and procedures in place.

- A local infection control policy, which includes requirements for decontamination of instruments.
- A lead member of staff for infection control and decontamination within the practice.
- Ensure safe storage, preparation and use of decontamination materials and chemicals inline with COSHH requirements.
- Procedures for managing single-use and reusable instruments (segregation, disposal and reprocessing).
- Dedicated equipment for reprocessing reusable instruments.
- A dedicated sink for handwashing and two dedicated sinks for decontamination (not used for handwashing).
- Instruments are cleaned using an ultrasonic bath (covered during use to restrict aerosols) or manual cleaning.
- Inspect instruments to ensure they are free from contamination, salt deposits or marked discolouration. A magnifying glass with task lighting is recommended.
- The practice needs to develop systems to ensure that sterilised instruments are used within
 - non vacuum autoclaves – sterilized instruments are either

- stored on covered trays and used within that treatment session, or dried and packaged and used within 21 days
 - vacuum autoclaves – pre-packaged sterilised instruments are used within 30 days
- Decontamination procedures should be separated from clinical procedures by using either a designated room or a designated area within the surgery with a dirty to clean workflow.
- Decontamination equipment should be fit for purpose and validated. It should be commissioned, maintained and periodically tested by a competent person.
- Instruments should be stored in an area dedicated for the purpose. Where this is in the surgery, the storage area should be as far from the dental chair as reasonably practicable.
- Waste must be segregated and disposed of appropriately.
- Staff involved with decontamination, should be training and immunisation against hepatitis B (and tetanus, if local policy demands)
- Annual infection control audits. The audit tool being developed by the Infection Prevention Society is recommended (www.ips.uk.net)

Practices are encouraged to plan to introduce washer-disinfectors, which will also improve the cleaning and disinfection of handpieces. Dedicated handpiece cleaners, although difficult to validate, may also be of value.

Essential infection control policies

Local policies must reflect a comprehensive view of decontamination within the practice. All practices should have an infection control policy together with the following policies and procedures:

- minimising the risk of blood-borne virus transmission, including needlestick injuries (policy)
- hand hygiene (policy)
- personal protective equipment use (procedures)
- decontamination and storage of dental instruments (policy)
- cleaning, disinfection and sterilization of dental instruments (procedures)
- clinical waste disposal (policy)
- decontamination of new reusable instruments (policy)
- management of dental instruments and equipment in infection control (procedures).
- the use, storage and disposal of disinfectants within the practice (procedures).
- spillage procedures.
- transfer of contaminated items from the treatment to decontamination area (procedures)
- a documented training scheme with individual training records for all staff engaged in decontamination.

The guidance states that PCTs will support local practices in writing and designing local policies and procedures for decontamination. Models will also be available from the BDA.

Best practice

Best practice aims to achieve higher standards in infection control through continuous improvements. There are no timescales for achieving best practice, recognising that it will take some practices longer than others and that some may never be able to comply fully. The requirements include:

- installing a modern validated washer-disinfector of adequate capacity to remove the need for manual washing
- improve separation of decontamination processes from other activities (through decontamination room(s), for example) enhancing the distinction between clean and dirty workflows
- suitable storage for instruments in an environment away from the surgery to reduce exposure to air and possible pathogenic contamination.
- robust systems to ensure sterilised instruments are used within the specified timescales outlined in essential requirements.

With the move to decontamination room(s), a protocol is needed for the safe transfer of contaminated items from the treatment room to the decontamination area, ensuring segregation of contaminated and clean/sterile instruments. Containers for transporting instruments should be leak proof, easy to clean, rigid to protect against sharps

injuries and capable of being closed. They should be cleaned and dried after each use (and if possible using a washer-disinfector), or discarded.

Cleaning methods

Effective pre-sterilisation cleaning of instruments will reduce the risk of transmission of infectious agents. Wherever possible it should be undertaken using an automated and validated washer-disinfector in preference to manual cleaning. The disinfection stage of a washer-disinfector renders instruments safe for handling and inspection. Under essential requirements, however, manual cleaning following an appropriate protocol is acceptable. Under best practice requirements, manual cleaning should only be considered when manufacturer's instructions specify the device is not compatible with automated processes or when the washer-disinfector is unavailable.

Instruments should be cleaned as soon as possible after use. Where this is not possible, instruments should be immersed in water to prevent drying. Dental materials that can harden on instrument must be removed as soon as possible.

Where recommended by the manufacturer, instruments and equipment consisting of more than one component should be dismantled to allow each part to be cleaned.

Washer-disinfectors

A washer-disinfector offers the best option for the control and reproducibility of cleaning with a process that can be validated. A typical washer-disinfector cycle includes five stages:

1. **Flush** - removes gross contamination using a water temperature <45°C
2. **Wash** – removes remaining soil using detergents
3. **Rinse(s)** – removes detergents
4. **Thermal disinfection** – temperature raised for required time: 80°C for 10 minutes or 90°C for 1 minute, for example
5. **Drying** – heated air removes residual moisture

The manufacturer's instructions for use should be followed, including recommendations for water quality/type, detergents and/or disinfectants and instrument loading. Staff must be trained how to use it and how to perform daily tests. Records of training must be maintained.

Washer-disinfectors must be loaded correctly to ensure effective cleaning. This involves

- not overloading instrument carriers or overlapping instruments
- opening instrument hinges and joints fully
- attaching instruments requiring irrigation to the irrigation system correctly, ensuring filters are in place if required (eg handpieces).

Washer-disinfector logbooks and records should include cycle parameters and details of routine testing and maintenance (more information on this will be available in the technical guidance). Automated data-loggers or interfaced small computer-based recording systems can be used, provided the records are kept securely and replicated. Records should be kept for at least two years.

Ultrasonic cleaning

Evidence supports the use of ultrasonic cleaners as an effective means of cleaning dental instruments. The cleaner must be maintained according to manufacturer's recommendations with quarterly testing to ensure that it is fully functional.

After use, instruments should be immersed briefly in cold water (with detergent) to remove visible soiling, taking care to avoid inoculation injuries. Joints and hinges should be fully opened and instruments disassembled as appropriate.

Place instruments in a suspended basket (avoid overloading and overlapping) and fully immerse in the cleaning solution (made according to manufacturer's instructions). Do not place instruments on the floor of the ultrasonic cleaner. Set the timer, close the lid and do not open until the cycle is complete. Drain the basket of instruments and rinse using clean fresh reverse osmosis (RO) or distilled water to remove residual soil and detergent.

Instruments to be wrapped and sterilised in a vacuum autoclave must be dried first.

The water/fluid must be changed at the end of the clinical session and more frequently if it becomes heavily contaminated.

Manual cleaning

Manual cleaning, although simple to set up, is difficult to validate as it is not possible to ensure that it is carried out effectively each time. It also carries a greater risk of inoculation injury. It is however, important for practices to have the facilities, documented procedures and trained staff to carry out manual cleaning when other methods are not appropriate or available.

Inspection

After cleaning, instruments should be inspected for cleanliness and checked for wear or damage before sterilisation. A magnifying glass with task lighting is recommended.

- Working parts should move freely and joints should not stick. Occasional use of a non-oil-based lubricant may be necessary.
- The edges of clamping instruments should meet with no overlap or rough edges.
- The edges of scissors should meet to the tip and move freely across each other with no overlap or rough edges.
- All screws on jointed instruments should be tight.

Instruments found to be faulty or damaged should be taken out of use. If they are to be sent for repair, they should be decontaminated fully and labelled as decontaminated before being sent for repair.

Sterilization

All autoclaves must be installed, commissioned, validated and maintained as recommended by the manufacturer and periodically examined by a competent person. Validation demonstrates that the right conditions for sterilisation are achieved and is usually undertaken in consultation with an appropriately trained engineer.

Dentists can use vacuum and non-vacuum autoclaves:

- Type N: passive displacement of air with steam. Non-vacuum autoclaves, designed for unwrapped, non-hollow and non-air retentive instruments
- Type B (vacuum): designed for hollow, air retentive and packaged loads
- Type S: designed to reprocess specific loads (determined by the manufacturer).

Water reservoirs should be filled daily using fresh distilled or RO water. After the final use of the day, the chamber should be drained, cleaned and dried and left with the door open.

Before use each day, clean the rubber door seal with a clean, damp non-linting cloth, check the chamber and shelves for cleanliness and debris and fill the reservoir with fresh distilled or RO water. Daily tests and housekeeping tasks should then be carried out and the results recorded in the logbook. Daily tests include a steam penetration test (vacuum sterilizers only) and an automatic control test - Helix or Bowie-Dick tests (all small sterilizers).

A sterilizer that fails to meet any of the test requirements should be withdrawn from service and advice sought from the manufacturer and/or maintenance contractor.

Instrument storage

Instruments must be protected against recontamination by wrapping or storing in a covered container. The autoclave used affects the wrapping and storing options:

- With a type B autoclave (vacuum), dried instruments can be pre-wrapped. Once sterilised, the instruments may be stored for up to 30 days
- With a type N autoclave (displacement), dried instruments can only be wrapped after sterilisation using sealed view packs. If trays of instruments are to be stored, the entire tray should be placed in a sealed pack. Instruments can be stored for up to 21 days. Alternatively, instruments can be covered and used within the current session.

We await guidance for type S autoclaves, although post-sterilisation packing remains an option.

Disposable non-linting cloths should be used to dry instruments and disposed of after each sterilisation load.

Storage systems must ensure easy identification of instruments and monitoring of storage times to ensure recommended intervals are not exceeded. The area where sterilised instruments are packaged for storage should be free of clutter and wiped clean with detergent and alcohol wipes at the start of each session.

Instruments should be stored in an area dedicated for the purpose and away from direct sunlight and water in a secure, dry and cool environment. Where this is in the surgery, the storage area should be as far from the dental chair as reasonably practicable (essential requirements). Best practice requires instruments to be stored in a separate environment. Wherever possible, air flow should be from clean to dirty areas.

Before use, check that the packaging is intact or the instruments have remained covered, the sterilisation indicator confirms that the pack has been sterilised (if a type B autoclave has been used) and visible contamination is absent.

Decontamination areas

Decontamination areas should be separated from clinical activity as far as possible. Where it takes place within the surgery, the reprocessing area should be as far from the dental chair as possible. Procedures that may generate an aerosol or splashing (manual washing, ultrasonic cleaners, opening decontamination equipment) should not take place while the patient is present.

Wherever decontamination takes place, a dirty to clean workflow should be maintained so that the risk of used instruments coming into contact with decontaminated instruments is minimised. The decontamination area should be wiped down after each decontamination cycle or after each patient.

With the move towards best practice, reprocessing should take place in a

separate room or rooms. Example layouts for decontamination areas include single and two room designs. Pages 8 and 9 give example layouts for a single decontamination room system.

Contaminated instruments are received into the dirty zone. The washing and rinsing sinks or bowls should be installed adjacent to the receiving area. The ultrasonic cleaner (where used) should be adjacent to the rinsing sink/bowl. The washer-disinfector should be located near the ultrasonic cleaner and well away from the receiving area.

Instruments should be inspected after cleaning and disinfection, so a dedicated clean area of worksurface with task lighting is needed. The steriliser should be situated well away from other activities with a clean area furthest away for unloading, inspection and wrapping (where appropriate).

General good practice principles

Hand hygiene

Training in hand hygiene should be part of staff induction and reviewed annually. There are three levels of hand hygiene, depending on the potential contamination of the hands. For decontamination processes, social hand hygiene is sufficient and will render the hands physically clean. Hand hygiene should be practised:

- after washing dental instruments
- before contact with sterilised instruments (wrapped and unwrapped)
- after cleaning decontamination equipment
- at completion of decontamination work.

Liquid soap should be applied to wet hands (to reduce the risk of irritation) and hand washing performed under running water for about 15 seconds. On completion, the hands should be visibly clean – if not, repeat the process. Use disposable paper towels to dry hands thoroughly.

To prevent skin becoming chapped or cracked, a water-based hand cream should be used. Wall-mounted dispensers with disposable cartridges should be used.

Staff who develop eczema or dermatitis should seek advice immediately from occupational health or their general practitioner.

Fingernails should be kept clean, short and smooth (no nail varnish). Rings, bracelets and wristwatches should be removed. If a wedding ring is worn, the skin beneath it should be washed and dried thoroughly.

The dedicated wash-hand basin should not have a plug or overflow and should not have the U-bend directly under the waste. A mixer tap should be sensor- or lever-operated and should not discharge directly into the drain opening. Wall-mounted liquid hand wash dispensers with disposable cartridges should be used; refillable containers allow bacteria to multiply, so can be a source of potential contamination. A poster depicting a six- or eight-step method should be displayed above every clinical wash-hand basin in the practice.

Personal protective equipment

The practice infection control policy should include guidance on when PPE should be worn and changed. PPE includes clinical disposable gloves, household gloves, plastic disposable aprons, facemasks, eye protection and adequate footwear.

Gloves

Gloves protect the hands from becoming contaminated, prevent contact with chemicals and minimise the risk of cross-infection. Clinical gloves are single use and should be discarded as clinical waste.

Gloves must fit properly and should be low in extractable proteins (<50µg/g), low in residual chemicals and powder free. Latex gloves are used frequently in dentistry although some users report long-term allergies. The use of vinyl or nitrile gloves may be a satisfactory substitute.

Domestic household gloves should be washed with detergent and hot water and left to dry after each use. These gloves should be replaced (at least) weekly.

Disposable plastic aprons

Disposable plastic aprons should be worn during all decontamination procedures. They should be used as single use items, changed at the end of each procedure and disposed of as clinical waste.

Face and eye protection

The face and eyes should be protected during all cleaning procedures. Face masks are single use and should be disposed of as clinical waste. Spectacles are unlikely to provide sufficient protection, so a visor or face shield is recommended (and cleaned according to manufacturer's recommendations).

Clothing, uniforms and laundry

Clothing worn to undertake decontamination should not be worn outside the practice. Neither should clinical clothing. Short sleeves are recommended but staff can protect their forearms by wearing long-cuffed gloves or disposable long-sleeved gowns.

Clothing/uniforms become easily contaminated with microorganisms, so freshly laundered uniforms should be worn each day. Machine washing with a suitable detergent at a minimum temperature of 65°C will reduce microbial contamination

Removing PPE

PPE should be removed in the following order:

- Gloves (ensuring they end up inside out). Wash hands thoroughly if they become visibly contaminated
- Plastic aprons by breaking the neck straps and gathering together touching the inside surfaces only
- Face mask by breaking straps or lifting over the ears, avoiding touching the outer surface
- Face and eye protection, avoiding touching the outer surfaces
- Wash hands again thoroughly.

Surface and equipment decontamination

All surfaces and equipment should be impervious and easily cleanable. Work surfaces and floor coverings should be continuous, non-slip and, where possible, without joints. If present, joints should be

sealed. Coving between the floor and wall will help prevent accumulation of dust and dirt. The manufacturer's advice should be sought on the compatibility of detergents and disinfectants with the surface or equipment.

The practice should have a protocol outlining cleaning schedules and maintain simple records. Cleaning staff should be briefed on cleaning patient care areas and decontamination rooms.

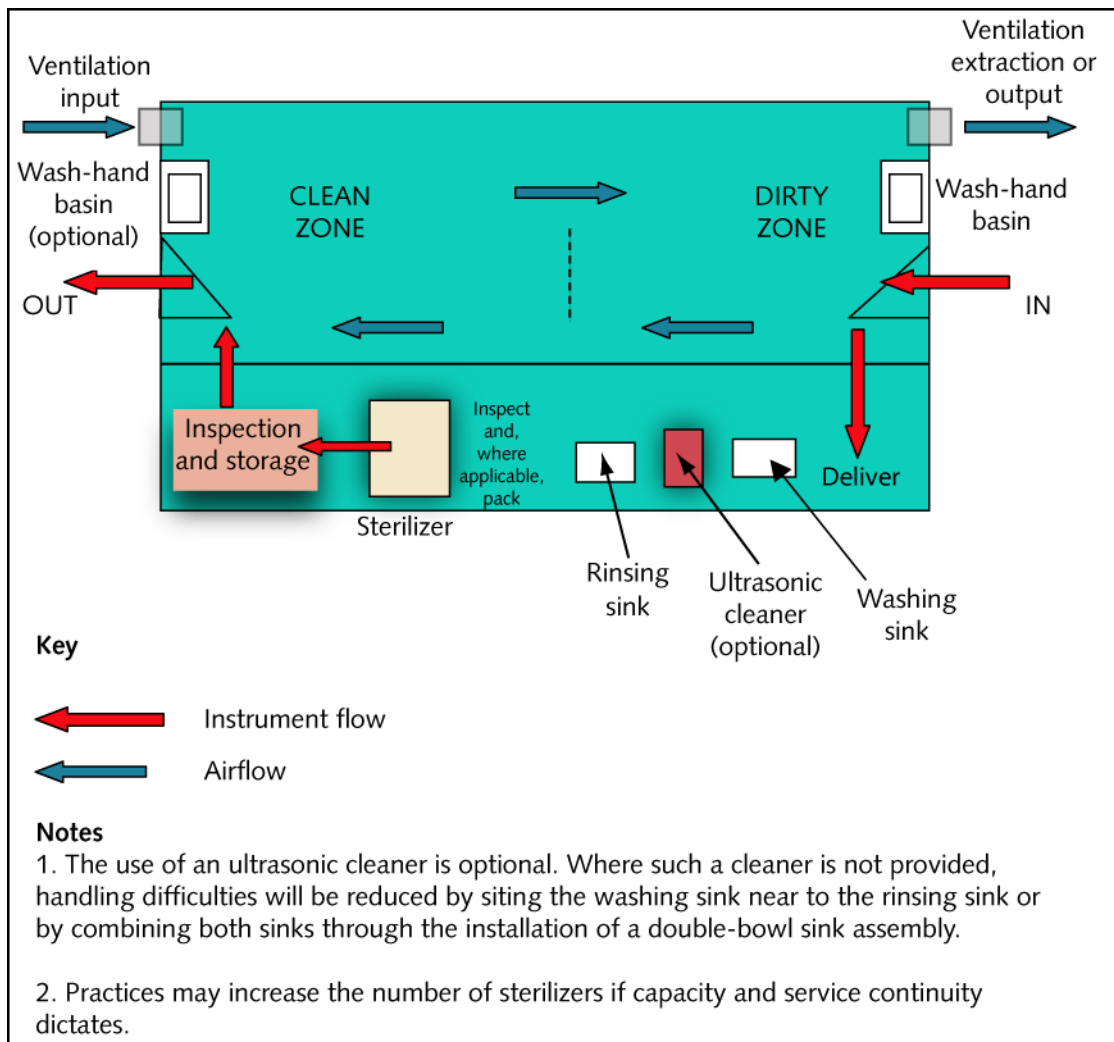
Surfaces can be effectively cleaned using commercial alcohol-based cleaning agents and wipes. Water with suitable detergents is also satisfactory, provided the surface is dried after cleaning. Following initial deep cleaning of a surface, subsequent use of a wet or dry microfibre cloth can achieve satisfactory removal of infectious agents. The microfibre can then be reprocessed as laundry

Between patients, the worksurfaces, dental chair, curing lamp, inspection light, hand controls, spittoons, and aspirator must be cleaned.

At the end of each session, the patient treatment area should be cleaned using disposable cloths or microfibre materials and should include the taps, drainage points, splashbacks, cupboard doors and sinks. Aspirators, drains and spittoons should be cleaned with a surfactant/detergent (to break down the biofilm) and a non-foaming disinfectant

Computer keyboards should be either washable or provided with covers that can be easily decontaminated.

Example layout for essential quality requirements



Example layout for single decontamination room (best practice)

