



Decontamination

Health Technical Memorandum 01-05: Decontamination in primary care dental practices

Note:

Section 3 on engineering and standards has not been included in this downloadable version of HTM 01-05.

It will follow shortly to form the complete version of HTM 01-05, whereupon the document will be made available in hard copy as well as electronically.

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Executive summary

Preamble

This document forms part of the Health Technical Memorandum 01 Decontamination series. Other parts include:

- Health Technical Memorandum 01-01: Decontamination of reusable medical devices
- Health Technical Memorandum 01-02: Decontamination in laboratories
- Health Technical Memorandum 01-03: Decontamination in pharmacies
- Health Technical Memorandum 01-04: Decontamination of laundry and infected linen
- Health Technical Memorandum 01-06: Decontamination of flexible endoscopes
- Health Technical Memorandum 01-07: Decontamination in primary care NHS trusts

Structure

This document includes the following three sections:

- Section 1: Decontamination policy and foreword
- Section 2: Advice to dentists and practice staff (local decontamination)
- Section 3: Engineering, technology and standards

Aim of the guidance

Health Technical Memorandum 01-05 is intended to progressively raise the quality of decontamination work in primary care dental services by covering the decontamination of reusable instruments within dental facilities.

Who should use this guidance?

Health Technical Memorandum 01-05 will be of interest to all staff involved in decontamination in primary care dental services.

It is intended to be used, or referred to, by all members of a dental team providing primary care dental services (that is, dentists and support staff as well as engineering staff providing services in key areas). In addition, primary care trusts (PCTs) and strategic health authorities (SHAs) will find the contents of value.

Reference to other parts of the Health Technical Memorandum 01 series may be necessary (on a limited basis only)

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**Section 1:
Decontamination
policy and foreword**

1.0 Policy and foreword

Patients deserve to be treated in a safe and clean environment with consistent standards of care every time they receive treatment. It is essential that the risk of person-to-person transmission of infections be minimised as much as possible.

This document has been produced after wide consultation and reflects our commitment to improving standards in dental practices.

We believe that – by building on existing good practice – this guidance can help us to deliver the standard of decontamination that our patients have a right to expect.

The policy and guidance provided in this Health Technical Memorandum is supported by an essential aim directed towards a programme of continuously improving decontamination performance at a local level. The guidance suggests options to dental practices within which choices may be made and a simple progressive improvement programme established. It is envisaged that by the end of the first year of the implementation of this guidance, all primary care dental practices will be working at or above the essential quality requirements described in this guidance.

This guidance is intended to support and advance good practice throughout primary care dentistry including that delivered by general dental practices, salaried dental services and where primary care is delivered in acute settings.

Registration

Over the next two years, the registration of healthcare providers, including dental practices both working within the NHS and entirely privately, will be introduced. The Care Quality Commission (CQC) will oversee this process and have regulatory responsibility to ensure that the requirements for registration are met. This includes the provision of a safe, clean environment and appropriate decontamination of dental equipment.

Provisionally the registration scheme is expected to place strong emphasis on quality management and self-audit. These measures should be seen as part of clinical governance, which is likely to make clear reference to this Health Technical Memorandum.

Introduction

1.1 This document is a guide for those conducting decontamination at a local level – that is, within the dental practice itself. However, this policy statement respects the option to transfer instruments/medical devices to other organisations for reprocessing under the Medical Devices Regulations 2002.

1.2 To help dental practices to improve their decontamination procedures, this document introduces specific benchmarks by which compliance with

- essential quality requirements; and
- best practice

can be achieved and demonstrated.

1.3 The requirements described in this guidance are intended as a clear indication of good practice and designed to exert upward pressure on the performance of dental practices. They will help to demonstrate to patients and those observing quality standards in dentistry that the local provider of a dental service is capable of operating in a safe and responsible manner with respect to decontamination of instruments and dental equipment. **Where new practices are commissioned or new premises contemplated, it is advised that the full best practice provisions of this guidance be utilised wherever reasonably practicable.**

1.4 The guidance provided here follows the essential principles given in the 'Health Act 2006: Code of practice for the prevention and control of healthcare associated infections' (the HCAI Code of Practice). This requires that effective prevention and control of healthcare-associated infection be embedded in everyday practice. For this reason, the guidance is written with emphasis on practical and readily implemented measures.

The 2008 revisions to the HCAI Code of Practice will make specific reference to this Health Technical Memorandum. However, these Health Technical Memorandum criteria themselves do not form part of the Code at this time nor are they currently part of 'Standards for Better Health'.

1.5 Under provision 4, the HCAI Code of Practice establishes a duty to provide and maintain a clean and appropriate environment for healthcare within which a specific requirement for effective arrangements for the appropriate decontamination of instruments and other equipment is given. This guidance is designed to assist all primary care dental providers (including salaried dental services) in meeting these requirements, and will extend to independent contractors in due course.

The need for guidance

1.6 As our knowledge of disease transmission has improved – particularly in relation to the transmission of variant Creutzfeldt-Jakob disease (vCJD) – it has become timely to review decontamination processes in dental practices.

1.7 A survey of decontamination in general practices in Scotland (NHSScotland, 2004) identified how important it is to follow procedures correctly in order to achieve safe standards of infection control. This report found that – even where the correct equipment was available – decontamination standards were not always being met satisfactorily. A survey of dental practices in England is planned for 2008/9 and will form part of the evidence base for further development in this guidance in future years.

1.8 'Clean, safe care – reducing infections and saving lives' refers to the need for high-quality environmental cleaning and decontamination as vital components in reducing rates of infection.

“Essential quality requirements” and “best practice”

1.9 Every practice should be capable of meeting the essential quality requirements, that is:

Regardless of the technology used, the cleaned instruments, prior to sterilization, should be free of visible contaminants when inspected. Instruments should be reprocessed using a validated decontamination cycle including: cleaning/washing; a validated steam sterilizer, and at the end of the reprocessing cycle they should be in a sterilized state.

1.10 To demonstrate best practice, further improvements are required in three main areas:

- **A cleaning process that should be carried out using a validated automated washer-disinfector.**
- **The environment in which decontamination is carried out should be such as to minimise the risk of recontamination of instruments and the possibility of generating aerosols, which may reach patients or unprotected staff. For best practice, the decontamination facilities should be clearly separate from clinical facilities. This implies the use of a separate room or rooms for the accommodation of clean (output) and dirty (input) work. In these facilities, the room(s) should be used for this purpose only and access should be restricted to those staff performing decontamination duties.**
- **The storage of reprocessed surgical instruments in such a way as to ensure restraint of microbiological recolonisation. These measures should be backed by careful controls on the storage times to which instruments that are less frequently used are subject.**

1.11 The overall aim is to achieve a reprocessed medical device (dental instrument) that is fully compliant with the Essential Requirements of the Medical Devices Regulations 2002. This implies that the instrument should be:

- clean and sterile at the end of the decontamination process; and
- maintained in a clinically satisfactory condition up to the point of use.

1.12 Following the guidance in this document will help to achieve a satisfactory level of risk control together with equivalent compliance with the Essential Requirements of the Medical Devices Regulations 2002.

“Sterile” and “sterilized”

As the environment in which dental instruments are used is not sterile, it follows that dental instruments will not be sterile at the point of use (They should, however, be in a sterile state at the end of the decontamination process when the sterilizer door is opened.)

Accordingly, this guidance accepts that dental instruments may be defined as “sterilized” rather than “sterile” at the point and time of use (a somewhat different approach from that in invasive surgical procedures).

In some instances, the decontamination process may not generate full sterilization, for example in the reprocessing of dental handpieces; however, the guidance will nevertheless seek to raise standards and minimise infection risk.

Progression towards best practice

1.13 We recognise that not all practices will, at present, be in a position to adopt best practice recommendations. However, every practice will need to assess the improvements they need to undertake to move towards these and prepare a plan to implement the changes.

1.14 While a period of 12 months is seen as appropriate for the attainment of essential quality requirements, no schedule for attainment of best practice is provided in this guidance for the present. Findings from the 2008/9 National Survey of Decontamination in Dental Practice will be used to guide DH and the dental community in terms of reasonable timescales. It is recognised that not only are improvements in premises and equipment required to achieve higher standards, but also changes in practice management and the culture in which patients are treated by the dental team are also necessary.

1.15 This guidance is based upon a principle of continuous improvement in the quality of decontamination practices and the environment used. Where dental practices use the same room for patient treatment and decontamination (essential quality requirements), they need to develop a plan that facilitates a move towards a separate and controlled decontamination room. This plan will normally also contain statements on staff training and development to suit work in a dedicated decontamination room or suite.

1.16 In addition, the plan should realistically outline the way forward in relation to best practice requirements, for example:

- measures to purchase and incorporate a washer-disinfector;
- the separation of decontamination processes from the patient treatment area.

Prion decontamination

1.17 Recent research has indicated that a low level of prion contamination may theoretically be present on some instruments following contact with dental tissues. Where this risk is most pronounced, the Chief Dental Officer for England has

published requirements for endodontic files and reamers to be single-use instruments (“Dear Colleague” Letter, 2007). Other instrument types for which a reliable cleaning regime is not available should also be considered single-use.

1.18 For all other instruments used in dentistry, the risk of prion transmission will be usefully reduced by compliance with the decontamination procedures described in this Health Technical Memorandum.

1.19 Currently there is no recognised process that can fully deactivate prion protein. In this Health Technical Memorandum, the cleaning process and its ability to remove protein in tandem with validated steam sterilization is emphasised.

Infection control policy

1.20 All dental practices should have an infection control policy in place and available for external inspection.

1.21 The infection control policy statement for each practice should indicate full compliance with the essential quality requirements. In addition, a written assessment of the improvements the practice needs to make in order to progress towards meeting the requirements for best practice should be available together with an implementation plan (as outlined in paragraphs 2.6–2.7).

Note

This statement is subject to staged implementation and to local constraints (for example, the physical inability to provide a separate room).

1.22 Infection control needs to include all aspects of the running of a dental practice: from attention to personal hygiene – handwashing, masks, protective clothing – to the cleaning and sterilization of instruments and the maintenance of the equipment.

1.23 Selective record-keeping on decontamination for infrequently used instruments is required as a key means of avoiding excessively long periods of storage for sterilized instruments, during which pathogen recolonisation may occur. While local implementation may vary, this will ordinarily involve creating a written or computer-based record, which clearly identifies the instruments concerned either directly or by association with their container. The record should show the date of decontamination and also an expiry date (a maximum of 21 days) after which the process should be repeated before the instrument is used.

1.24 For instruments that are wrapped prior to sterilization in a vacuum sterilizer, the storage period may be extended to 30 days.

Note

The Department of Health recognises that recolonisation of instruments – particularly those that are wrapped following sterilization – is likely. Accordingly, while recommendations are made in respect of maximum storage times, dental staff should visually check all instruments prior to use.

The Department will review the evidence with regard to recolonisation rates and amend this guidance if necessary.

Training and education

1.25 Training and education in the processes of pathogen control, decontamination, hygiene and infection risk reduction, including waste disposal, are key aspects of patient safety and service quality. Accordingly the provision of training and competency records are key requirements. As part of verifiable continuous professional development (CPD), professionals working in this area will receive not less than five hours' training in this area over a period of five years

Scope, status and structure of Health Technical Memorandum 01-05

1.26 Health Technical Memorandum 01-05 relates to locally conducted decontamination procedures, which are the most common method of decontamination in primary dental care. As such, this includes all work where the end-user and the persons conducting decontamination are employees of the same organisation working in the same or related premises. Ordinarily this will be a general dental practice or salaried primary care dental services functioning as part of a PCT.

1.27 Where practices choose to make use of an external service – such as a central sterile services department – which is fully compliant with the Medical Devices Regulations 2002 and is registered with the Medicines and Healthcare products Regulatory Agency (MHRA), the guidance contained in Health Technical Memorandum 01-01 will be appropriate to that service.

1.28 The recent policy clarification from the Department of Health ('Decontamination of reusable medical devices in the primary, secondary and tertiary care sectors (NHS and Independent providers) – 2007 clarification and policy summary') states that local decontamination should meet with the appropriate Essential Requirements of the Medical Device Regulations 2002. This implies that dental practices ensure that their local policies give rise to the production and use of sterilized instruments for use with patients.

1.29 This document is divided into three sections:

- **Section 1: Decontamination policy and foreword.**
This section outlines the policy and principles of decontamination in dental practices, and explains the essential quality requirements and best practice requirements.
- **Section 2: Advice to dentists and practice staff.**
This section gives plain advice to dentists and practice staff on how to meet essential quality requirements and achieve best practice; how to clean and sterilize instruments; and how to set up a decontamination area within the practice.

- **Section 3: Engineering, technology and standards.**
This section gives technical advice to engineering and technical staff, including Authorised Persons (Decontamination) and Competent Persons (Decontamination).

1.30 Reference to guidance and standards provided by the Healthcare Commission (HCC) and Medicines and Healthcare products Regulatory Agency (MHRA) is provided and explained throughout this document.

1.31 Where engineering and technical information is provided (Section 3), references to source standards and evidence are given. However, such references are omitted in Section 2 to aid clarity of presentation and explanation.

1.32 It is important to remember that this is a working document; changes to it may be necessary as new evidence around the methodology of decontamination becomes available.

Exclusions

1.33 This Health Technical Memorandum does not cover the following:

- Decontamination in sterile services departments (SSDs). This is covered in Health Building Note 13.
- Decontamination in laboratories (covered in the forthcoming Health Technical Memorandum 01-02).
- Decontamination in pharmacies (covered in the forthcoming Health Technical Memorandum 01-03).
- Decontamination of laundry and infected linen (covered in the forthcoming Health Technical Memorandum 01-04).
- Decontamination of flexible endoscopes (covered in the forthcoming Health Technical Memorandum 01-06).

Further guidance

1.34 Professional advice has previously been available within 'A12: Infection control in dentistry'. As with the content of the earlier Health Technical Memoranda 2010, 2030 and 2031, A12 has been superseded in part by this document, which also takes full account of recently published EN/ISO Standards.

1.35 The improvement of decontamination services for reusable medical devices also forms an important part of the Chief Medical Officer's strategy to combat healthcare-associated infection (HCAI) as described in "Winning ways" (Department of Health, 2003) and "Getting ahead of the curve" (Department of Health, 2002).

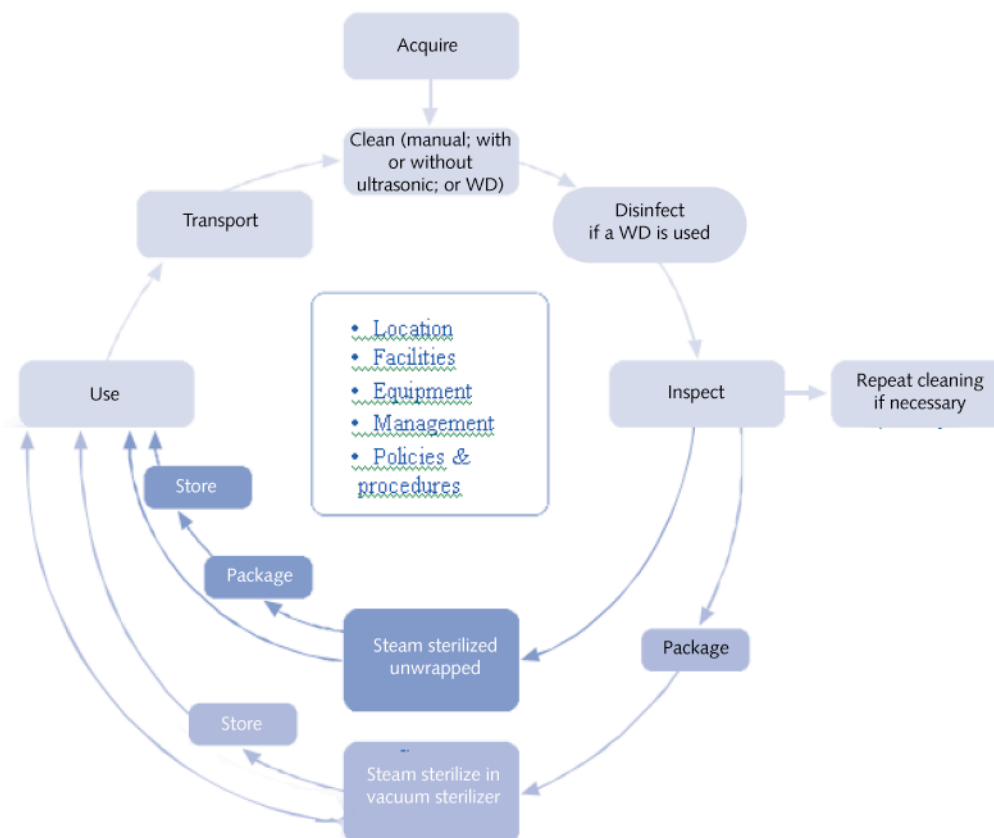
**Section 2:
Advice to dentists
and practice staff**

2.0 Essential quality requirements and best practice

Decontamination of instruments – an overview

2.1 Decontamination is the process by which reusable items are rendered safe for further use and for staff to handle. Decontamination is required to minimise the risk of cross-infection between patients and between patients and staff.

2.2 Decontamination of instruments (also known as reprocessing) is a complex process that involves several stages, including cleaning, disinfection, inspection and sterilization. The diagram below summarises how the individual stages ideally link together to complete the process of instrument decontamination.



2.3 As an alternative to storing instruments immediately after sterilization, instruments that are anticipated to have a rapid turnover may be put out on sets of individual covered trays. The number of trays should correspond to the expected number of treatment sessions for that particular working day. This will negate the need to keep packing and unpacking instruments throughout the day. Each tray should be for use on a single patient.

2.4 Any instruments on unused trays at the end of the clinical session – even though they have not been used – should be reprocessed before further use.

Compliance

Compliance definitions

Compliance – Essential quality requirements

This terminology is used within this Health Technical Memorandum to define a level of compliance expected as a result of its implementation. Guidance contained within this document will assist dental practices in maintaining these requirements and developing towards higher levels of achievement in this area over time.

In order to demonstrate compliance with essential quality requirements to external bodies (for example, the Healthcare Commission, PCTs and SHAs), practices will be expected to provide a statement on plans for future improvement. The duties of the Healthcare Commission will, with appropriate revision, transfer to the new Care Quality Commission during the current year. Details on this change and associated registration requirements are given in Section 3.

Compliance – Best practice

Best practice refers to the full level of compliance that may be achieved immediately or via a documented improvement from essential quality requirements.

Essential quality requirements

2.5 Instruments should be reprocessed using a validated decontamination process including a validated steam sterilizer, and at the end of the reprocessing cycle they should be sterile.

2.6 In maintaining and developing dental decontamination practices, the following should also be included:

- a. A local infection control policy subject to update as necessary.
- b. The above policy should have detailed requirements/procedures for the decontamination of instruments.
- c. The practice should have a nominated lead member of staff responsible for infection control and decontamination.
- d. The storage, preparation and use of materials should take full account of the requirements of the Control of Substances Hazardous to Health (COSHH) Regulations 2002. Particular care should be taken in the storage and preparation for use of decontamination chemical products. Manufacturers' instruction sheets should be consulted for further information. Guidance on COSHH is available from the Health & Safety Executive (<http://www.hse.gov.uk/coshh>).

- e. Practices should have a clear procedure for ensuring appropriate management of single-use and reusable instruments, which safeguards their status. (Section 3 contains detailed guidance on instrument purchase and disposal.)
- f. Reprocessing of dental instruments should be undertaken using dedicated equipment (see Section 3).
- g. Dedicated handwashing facilities should be provided.
- h. Cleaning and inspection are key parts of satisfactory surgical instrument reprocessing. Instruments may be cleaned using an ultrasonic bath but this should be covered during use to restrict the release of aerosols. Manual cleaning may also be used. Practices should plan for the introduction of washer-disinfectors. Inspection processes should ensure that the standards of cleaning achieved are visually satisfactory – that is, that instruments be free from particulate contamination, salt deposits or marked discoloration. The use of a simple magnifying device with task lighting will improve the value of this part of the process.
- i. The separation of instrument reprocessing procedures from other activities, including clinical work, should be maintained by physical or temporal means. Decontamination equipment including sterilizers should accordingly be located in a designated area. The layout within this area should reflect the progression from the receipt of dirty, used instruments towards clean instruments sterilized in a specific controlled clean area. In the first instance, where practices are meeting the essential quality requirements defined by this guidance, the designated area for decontamination may be in, or adjacent to, a clinical room. At a later stage of development, more complete separation involving the use of a designated room or rooms will become appropriate (see Figures 1–3 in Chapter 5).
- j. Equipment used to decontaminate dental instruments should be fit for purpose and validated. This means that the device should be commissioned, maintained and periodically tested by a Competent Person (Decontamination), that records of maintenance should be kept and that correct functioning should be monitored and recorded (see Section 3).
- k. The appropriate and controlled disposal of waste is a key aspect of risk control in local dental practices (see Section 3).
- l. A documented training scheme should be in operation with individual training records for all staff engaged in decontamination. (see Section 3 for details.)
- m. The practice should carry out an assessment of the changes needed to move from compliance with essential quality requirements to compliance with best practice requirements.

- n. Staff involved in decontamination should demonstrate current immunisation for hepatitis B and, subject to local policy, tetanus. Staff must be informed of the benefits (for example protection against serious illness, protection against spreading illness) and drawbacks (for example reactions to the vaccine) of vaccination.

Note

Vaccination is considered additional to, and not a substitute for, other control measures.

- o. It is recommended that a recognised audit tool and procedure aligned with the guidance provided here should be used routinely, with progressive improvement in outcome. The use of the Infection Prevention Society's audit tool (when available) is strongly recommended (www.ips.uk.net). See also paragraphs 2.22–2.24.
- p. Practices should plan to use washer-disinfectors to clean and disinfect the internal structure of handpieces. Additionally, dedicated cleaning equipment is available and may be of value. Validation in this area is difficult and the advice of manufacturers/suppliers should be sought.
- q. Separate wash-hand basins for use by staff conducting decontamination should be provided. In addition, two dedicated sinks should be available for decontamination work – including where an automated washer-disinfector is in use. These sinks should not be used for handwashing.

Essential infection-control policies

2.7 This guidance is primarily focused on medical devices and instruments used in dentistry. However, local policies must be broad-based and consider a comprehensive view of hygiene and cleanliness across all aspects of dental practice and associated facilities. All dental practices should have an infection control policy together with guidelines and procedures that contain the following information:

- A written policy with regard to minimising the risk of blood-borne virus transmission, with particular attention to the risk of needlestick injuries.
- A policy on decontamination and storage of dental instruments (decontamination guidelines).
- Procedures for cleaning, disinfection and sterilization of dental instruments. This should outline the approach used locally in sufficient detail as to allow the ready identification of areas and equipment used.
- A policy for disposal of clinical waste (waste disposal policy) (for further details, see Section 3).
- A policy for hand hygiene (see Section 3).

- A policy for decontamination of new reusable instruments (see Section 3).
- Procedures for the use of personal protective equipment (PPE).
- Procedures for the management of dental instruments and associated equipment in the context of infection control.
- The recommended disinfectants to be used within the practice, their application, storage and disposal (disinfectant guidelines).
- Spillage procedure as part of local COSHH arrangements.

2.8 Dental practices should consult with the PCT's infection control specialist adviser in order to obtain support in the writing of local policies, within the framework provided here, and the design of local procedures together with guidance implementation planning (see also Chapter 6, which gives general guidance on cleaning and disinfection protocols within the practice).

Use of dental instruments during and after treatment on a patient

2.9 The number of instruments provided for each treatment should be kept to a minimum – only those instruments that are needed should be put out on trays. Care over the process of putting out instruments into trays in relation to the procedures being performed will reduce decontamination workload (see also paragraph 2.3).

2.10 Regard all instruments set out for each patient as contaminated after the treatment whether or not they have been used.

Movement of instruments to and from adjacent decontamination areas

2.11 The object of the measures outlined below is to reduce the risk of cross-contamination between instruments.

2.12 The practice should have safe procedures for the transfer of contaminated items from the treatment to the decontamination area.

2.13 Sterilized instruments and single-use instruments should be clearly separated from those that have been used and are awaiting decontamination.

2.14 A clean sterilized instrument tray should be used to transfer sterilized instruments to the treatment area. These trays should be of a suitable size to enable them to be placed in the sterilizer. Alternatively, single-use disposable instrument trays may be used, provided these have been stored in a clean and dry environment.

2.15 Instruments for decontamination should be transferred as soon as possible after use to the decontamination area in order to avoid the risk of drying. Prompt decontamination is appropriate. RO (reverse osmosis) water immersion or the use of commercial gels or sprays may be considered. These measures reduce the adsorption of proteins to the instrument surfaces and makes cleaning easier.

Segregating instruments

2.16 Prior to cleaning, segregate reusable instruments to be cleaned from items for disposal.

2.17 A single-use device should only be used during a single treatment episode and then disposed of. It is not intended to be reprocessed and used again – even on the same patient at a later session.

2.18 The MHRA advises against the reuse of single-use devices, as this practice can affect their safety, performance and effectiveness. Anyone who reprocesses or reuses a single-use device bears full responsibility for its safety and effectiveness.

2.19 Shown below is the symbol that identifies single-use items. This will appear on packaging but might not be present on individual items. If in doubt, seek further advice from the manufacturer.



2.20 Where instruments are difficult to clean, consideration should be given to replacing them with single-use instruments where possible. In dentistry, this will include, but is not limited to, instruments such as matrix bands, saliva ejectors, aspirator tips and three-in-one tips.

2.21 Dentists should ensure that endodontic reamers and files are treated as single-use in order to reduce the risk of prion transmission in dentistry.

Quality assurance system and audit

2.22 Dental practices are required to establish and operate a quality assurance system that covers the use of effective measures of decontamination and infection control. This may best be demonstrated by undertaking audits and assessments of their infection control and decontamination practices. These audits should be filed for inspection as part of their risk management system. Compliance with this Health Technical Memorandum will be seen as indicative of the presence of a valid quality assurance system. Audits should be carried out in compliance with local PCT policies. At a minimum, practices should audit their decontamination processes on an annual basis, with an appropriate review dependent on audit outcomes.

Note

An audit tool will be available shortly from the Infection Prevention Society, the content of which parallels the guidance provided in this document (<http://www.ips.uk.net>)

2.23 It is important that the audits are made available to the auditing body on request and should form part of the PCT's own risk assessment for inspection when required.

2.24 Audit documents should be stored for at least two years. They should not be removed from the premises or destroyed.

Best practice

2.25 Progress towards achieving best practice may include the following:

- Install a modern validated washer-disinfector of adequate capacity to remove the need for manual washing.
- Improve separation of decontamination processes from other activities and enhance the distinction between clean and dirty workflows.
- Provide suitable storage for instruments, which reduces exposure to air and a possible risk of pathogenic contamination.
- Develop a quality system approach so that the storage of instruments does not exceed 21 days for instruments sterilized in a non-vacuum (type N) sterilizer or 30 days if sterilized in a vacuum (type B or S) sterilizer (see paragraph 4.31):
 - a. For vacuum sterilizers (type B and S – see paragraph 4.5), pre-packing will extend storage life to 30 days.
 - b. Where non-vacuum sterilizers (type N – see paragraph 4.5) are used, post-sterilization drying using disposable non-linting cloths should be supplemented by the packaging of instruments – this will improve resistance to contamination and recolonisation in storage.
 - c. Where packaging is not applied, instruments should be stored on covered trays and used within that treatment session. Instruments will need to be reprocessed if not used within that treatment session.

2.26 Subject to local policy choice, these measures will help to ensure stock rotation and tend to limit recontamination of stored instruments. Simple but clear record-keeping will be required to make these measures effective.

Taking instruments to the decontamination area

2.27 The practice should have safe procedures for the transfer of contaminated items from the treatment to the decontamination facility.

2.28 Transport containers should be such as to protect both the product during transit and the handler from inadvertent contamination and therefore should be:

- leak-proof;
- easy to clean;
- rigid, to contain instruments, preventing them becoming a sharps hazard to anyone handling the goods and to protect them against accidental damage;
- capable of being closed securely;
- robust enough to prevent instruments being damaged in transit;
- subject to local policy, the containers may be labelled to identify the user and/or the contents.

2.29 Without exception after each use, transport containers should be cleaned, disinfected and dried, ideally using a washer-disinfector, or discarded (as appropriate). If this is not possible, containers should be cleaned with a fresh detergent solution, then rinsed and dried. Bleach including hypochlorite solutions should not be used, as residues may damage instruments.

2.30 Where contaminated instruments are to be transported outside of the healthcare premises on a public highway, those responsible for such transportation should refer to the requirements of the Carriage of Dangerous Goods and Use of Transportable Pressure Equipment Regulations 2004 and the Health and Safety at Work etc Act 1974.

2.31 A protocol for transportation that ensures the segregation of contaminated product from clean/sterile instruments should be followed.

2.32 Contaminated instruments will be regarded as low biohazard materials and must be part of a noted consignment. This means recording details of the group of items transported (that is, dental instruments), the time of dispatch and the intended recipient. Records should be such as to allow each movement to be traced and audited if necessary. The note should be positioned prominently within any vehicle used for transportation and carry a contact telephone number.

2.33 Where instruments travel in a vehicle with a dentist or other expert person, record-keeping may be simplified to cover the date and vehicle used only. This rule is applicable to, for example, school and domiciliary visits.

3.0 Cleaning instruments

Guidance on the installation, validation, maintenance and testing of ultrasonic cleaners and washer-disinfectors can be found in Section 3.

Introduction

3.1 The principal methods of cleaning reusable dental instruments currently available are:

- cleaning using a washer-disinfector;
- manual combined with ultrasonic cleaning;
- manual.

3.2 Effective cleaning of instruments is an essential prerequisite before sterilization and will reduce the risk of transmission of infectious agents. Wherever possible, cleaning should be undertaken using an automated and validated washer-disinfector in preference to manual cleaning, as a washer-disinfector includes a disinfection stage that renders instruments safe for handling and inspection.

3.3 Manual cleaning, governed by an appropriate protocol, is acceptable within the essential-quality-requirements framework. Within the best-practice framework, however, manual cleaning should be considered only where the manufacturer specifies that the device is not compatible with automated processes (including ultrasonic cleaning) or when the washer-disinfector is temporarily unavailable (for example, for repair or validation). Exceptionally, where local experience indicates that pre-washing may be helpful (for example, in the removal of tenacious dental materials), such action may be appropriate before automated cleaning.

3.4 New instruments should be cleaned and sterilized before using for the first time, unless supplied as sterile.

3.5 Instruments cleaned as soon as possible after use may be more easily cleaned than those left for a number of hours before reprocessing. Where this is not possible, water immersion or the use of a foam spray intended to maintain a moist or humid environment are thought useful in aiding subsequent decontamination. Long periods of wet storage should, however, be avoided.

3.6 When working with substances that can harden on instruments (for example cements), the instruments should be cleaned immediately. Instruments that cannot be cleaned should be discarded.

3.7 Where recommended by the manufacturer, instruments and equipment that consist of more than one component should be dismantled to allow each part to be adequately cleaned. Members of the dental team should be appropriately trained to ensure competence in dismantling, cleaning, sterilizing and reassembling of instruments. Amalgam carriers are an example of instrumentation requiring this approach.

General requirements for cleaning methods

3.8 Where possible, refer to manufacturers' instructions relating to instruments, dental equipment, cleaning devices and cleaning solutions.

3.9 Whenever possible, cleaning should be undertaken using an automated and validated process in preference to manual cleaning. Manual cleaning should be considered where manufacturer's instructions specify that the device is not compatible with automated processes.

3.10 Ensure that instruments can be cleaned using a method available to the practice.

3.11 Validation is the means by which an entire process is verified, tested and documented, with the ability to be consistently reproducible. Ensure ultrasonic and washer-disinfector cleaning procedures used in the practice are validated. This is to demonstrate that all instruments and equipment cleaned by these methods are reliably and consistently cleaned using predetermined and reproducible conditions.

3.12 Technical details for validation standards and procedures are provided in Section 3. The assistance of decontamination specialists will be necessary from time to time in order to ensure that equipment and procedures remain valid in engineering terms. These services may be available through the local PCT or as part of a commercial package.

Automated cleaning: washer-disinfectors

3.13 Each stage of the decontamination process should contribute to the reduction of bioburden on the device being reprocessed. Using a washer-disinfector is the preferred method for cleaning dental instruments because it offers the best option for the control and reproducibility of cleaning; in addition, the cleaning process can be validated.

3.14 Washer-disinfectors are used to carry out the processes of cleaning and disinfection consecutively in an automated cycle. A typical washer-disinfector cycle for instruments includes the following five stages:

- **Flush** – Removes “difficult” gross contamination, including blood, tissue debris, bone fragments and other fluid and solid debris. Latest standards indicate that a water temperature of less than 45°C is used to prevent protein coagulation and fixing of soil to the instrument.
- **Wash** – Removes any remaining soil. Mechanical and chemical processes loosen and break up contamination adhering to the instrument surface. Detergents used in this process must be specified by the manufacturer as suitable for use in a washer-disinfector. They should also be compatible with the instruments being processed and supplied so as to perform correctly and avoid instrument degradation including discoloration, staining, corrosion and pitting.
- **Rinse** – Removes detergent used during the cleaning process. This stage can contain several sub-stages.

- **Thermal disinfection** – The temperature of the load is raised and held at the pre-set disinfection temperature for the required disinfection holding time: for example, 80°C for 10 minutes; or 90°C for 1 minute.
- **Drying** – Purges the load and chamber with heated air to remove residual moisture.

Using a washer-disinfector

3.15 For details of all operational aspects of using a washer-disinfector, follow the manufacturer's instructions. This will include details of both the water quality/type to be used and directions on the detergents and/or disinfectants recommended for use with the device. These instructions form part of the EN requirements for CE marking and are considered to be part of the regulated product.

3.16 Ensure that staff are trained in the correct operation of a washer-disinfector, including how to perform daily tests and housekeeping tasks. Records of training and the achievements of staff should be maintained (see Section 3).

3.17 It is crucial to load a washer-disinfector correctly as incorrectly loaded instruments will not be cleaned effectively. Therefore, follow an instrument-loading procedure that has been shown to achieve effective cleaning in the washer-disinfector used in the practice. To do this:

- do not overload instrument carriers or overlap instruments;
- open instrument hinges and joints fully;
- attach instruments that require irrigation to the irrigation system correctly, ensuring filters are in place if required (for example, for handpieces, if specified by the manufacturer).

3.18 After cleaning, inspect instruments for cleanliness and check for any wear or damage before sterilization. (The use of a simple magnifying device with task lighting will improve the value of this part of the process.) The satisfactory completion of this step means that these instruments may be clearly designated as ready for sterilization.

Records

3.19 Washer-disinfector logbooks and records should be kept by the designated "user" – an identified member of the practice staff. Record cycle parameters together with details of routine testing and maintenance of the equipment used. The use of automated data-loggers or interfaced small computer-based recording systems is acceptable, provided the records are kept securely and replicated. It is recommended that records be maintained for not less than two years.

Considerations for cleaning handpieces

3.20 Check with the handpiece manufacturer that a washer-disinfector can be used to clean the handpieces.

3.21 Certain types of washer-disinfector can be adapted to clean handpieces and these can be validated independently as being effective.

3.22 Where a handpiece manufacturer does not recommend a washer-disinfector for cleaning the handpiece, use of a dedicated handpiece-cleaning machine may be considered. This uses a pressurised system to clean and lubricate handpieces. However, unlike a washer-disinfector, it does not disinfect.

3.23 Always consult the washer-disinfector manufacturer for operating details (for example, whether filters are required) and running costs before purchase.

3.24 Washer-disinfectors might remove all lubricants during the cleaning cycle; therefore, handpieces might require further lubrication after cleaning. Follow the handpiece manufacturer's recommendations for lubrication (see also paragraphs 3.55–3.58).

Notes

1. Some washer-disinfectors that have a handpiece irrigation system require that a special filter be fitted to protect the internal mechanism of the handpiece from extraneous debris during the operating cycle. These filters need to be replaced at regular intervals in accordance with the manufacturer's instructions.

2. There are certain commercial products that claim to be able to sterilize as well as wash and disinfect dental handpieces. Where these can be demonstrated to be compliant with the validation requirements of this guidance or may be shown to reduce the risk of infection transmission, the use of these products may be advantageous.

Automated cleaning: ultrasonic cleaning

3.25 Evidence on the effectiveness of ultrasonic cleaning gives support to its use in dentistry. However, it is important to ensure that the water/fluid is maintained, cleaned and changed at suitable intervals. The bath should also be kept free of dirt released in the cleaning process. Good maintenance is also essential. The appearance of instruments following ultrasonic cleaning should be checked to ensure that the process is operating effectively (see also Section 3).

3.26 Ultrasonic cleaning in a well-maintained machine enhances removal of debris. Thus, although a washer-disinfector is preferred and should be incorporated into new plans or upgrades, an ultrasonic cleaner can be used as a cleaning method – including being used as an extra cleaning stage prior to an automated washer-disinfector process. This may be particularly helpful for instruments with hinges and/or intricate parts.

3.27 To enable consistent cleaning of instruments, follow the manufacturer's operating instructions and ensure all staff use a specified and documented operating procedure (see below). Details on validating ultrasonic cleaners are supplied in Section 3.

3.28 The use of ultrasonic cleaners to clean dental handpieces should not be undertaken without confirmation from the manufacturer that the devices are compatible.

3.29 The ultrasonic cleaner should be tested quarterly to ensure that it is fully functional (see Section 3).

Ultrasonic cleaning procedure

- Instruments should be briefly immersed in cold water (with detergent) to remove some of the blood and other visible soil before ultrasonic cleaning. Care should be taken to minimise aerosol production in this process and to safeguard against inoculation injury. The use of a purpose-designed container with sealing lid is recommended.
- Follow the manufacturer's recommendations for the safe operating procedure of the ultrasonic cleaner and follow the points outlined below regarding loading and unloading the cleaner.
- Ensure that joints or hinges are opened fully and **instruments that need taking apart are fully disassembled before they are immersed in the solution.**
- Place instruments in a suspended basket and fully immerse in the cleaning solution, ensuring that all surfaces are in contact with the solution. The solution should be made up in accordance with the manufacturers' instructions.
- Do not overload the basket or overlap instruments because this results in poor cleaning and can cause wear to the instruments.
- Do not place instruments on the floor of the ultrasonic cleaner because this results in poor cleaning and excessive instrument movement, which can damage the instruments.
- To avoid damage to delicate instruments, a modified basket or tray system might also be necessary depending on operational requirements.
- Set the timer to the correct setting as per the ultrasonic cleaner manufacturer's instructions. Close the lid and do not open until the cycle is complete.
- After the cycle is complete, drain the basket of instruments before rinsing.
- Change the solution when it becomes heavily contaminated or otherwise at the end of every clinical session, because the build-up of debris will reduce the effectiveness of cleaning. Ensure staff are aware of the need to assess when a change of solution is necessary as advised in the operational requirements.

- After ultrasonic cleaning, rinse and inspect instruments for cleanliness, and where possible check for any wear or damage (as described later) before sterilization.

3.30 Instruments cleaned in an ultrasonic cleaner (or by hand) should be rinsed thoroughly to remove residual soil and detergents. A dedicated sink or bowl (separate from the one used for the original wash) should be used and the instruments immersed in clean fresh RO or distilled water. Wash-hand basins should not be used. (This step may be omitted if the local procedure involves the use of a washer-disinfector as the next stage in the decontamination process.)

3.31 Instruments should be sterilized as soon as possible after cleaning to avoid air-drying (which can result in corrosion and/or microbial growth). For instruments processed in a vacuum sterilizer, before being wrapped, instruments should be dried using a disposable non-linting cloth.

3.32 Hard water contamination of wet instruments, which then go on to sterilization, can compromise the proper function of a small steam sterilizer. Rinsing in RO or freshly distilled water will be necessary as a precaution.

Manual cleaning

3.33 In principle, manual cleaning is the simplest method to set up but it is difficult to validate because it is difficult to ensure that it is carried out effectively on each occasion.

3.34 Compared with other cleaning methods, manual cleaning presents a greater risk of inoculation injury to staff. However, despite the limitations of manual cleaning, it is important for each practice to have the facilities, documented procedures and trained staff to carry out manual cleaning as a backup for when other methods are not appropriate.

3.35 For dental services that are working to the best practice requirements outlined in this document, manual cleaning (acceptable under the essential quality requirements) should only be used for equipment that cannot be cleaned by automated methods.

3.36 This method should have systems in place to avoid recontamination of clean instruments.

3.37 An effective system for manual cleaning should be put in place, as outlined in Section 3, and all staff should follow an agreed written procedure. A visual inspection for cleanliness and wear and damage should be carried out.

3.38 Consider routinely using an automated method (for example, a washer-disinfector). Aim to phase in instruments that can be cleaned in a washer-disinfector.

Avoiding instrument damage

3.39 Most dental instruments are made of high-quality materials designed to minimise corrosion if reprocessed correctly. The corrosion resistance is based on their alloy composition and structure, which forms a protective passivation layer on the surface. The ability of the instruments to resist corrosion depends on the quality and thickness of this layer.

3.40 It is important to avoid damage to the passivation layer during cleaning. Accordingly, methods such as the use of wire brushes, which may give rise to surface abrasion, should be avoided.

3.41 Remove from use any instruments that have rust spots.

Cleaning procedure summary

3.42 Effective cleaning of dental instruments before sterilization is of the utmost importance to reduce the risk of transmission of infectious agents.

3.43 Research suggests that instruments cleaned as soon as possible after use are more easily cleaned than those left for a number of hours before reprocessing.

3.44 Instruments should be transferred from the point of use to the decontamination areas as soon as is practical to ensure processing takes place as soon as possible after use. Gathering evidence indicates that keeping instruments moist after use and prior to decontamination improves protein removal and overall decontamination outcomes.

3.45 It should be noted that certain solutions are corrosive to stainless steel instruments and will cause pitting and then rusting if allowed to remain on instruments for any length of time. Dental professionals should consult with the suppliers/manufacturers of decontamination agents to ensure that the products used are appropriate and unlikely to cause significant long-term corrosion (refer to COSHH for further advice).

3.46 Always check packaging for the single-use symbol before use and note that it might be difficult to see (see also paragraphs 2.16–2.21).

3.47 Use single-use instruments only on an individual patient during a single procedure and then discard. The reuse of a single-use device has implications under the Medical Devices Regulations. Anyone who reprocesses or reuses a device CE marked for use on a single occasion bears the responsibilities normally carried by the manufacturer for the safety and effectiveness of the instrument (see also paragraphs 2.17–2.21).

Rinsing of instruments after cleaning and or disinfection

3.48 Instruments cleaned in an ultrasonic cleaner (or in addition by hand) should be rinsed thoroughly in a dedicated sink or bowl (separate from the one used for the original wash) using freshly prepared RO or distilled water in order to remove residual soil and detergents with minimum risk of salt deposition.

Note:

This step may be omitted if a washer-disinfector is used as the next part of the decontamination process.

3.49 Instruments should be sterilized as soon as possible after cleaning to avoid air-drying (which can result in corrosion and/or microbial growth). However, where instruments are to be wrapped, prior to vacuum sterilization, the instruments should be dried.

Inspection and care of instruments before sterilizing

3.50 Inspect all instruments that have been through any cleaning procedure, including processing by a washer-disinfector, to ensure they are clean, functional and in good condition. Dispose of any instruments that are blunt, bent or damaged or show any signs of pitting or other corrosion. An illuminated magnifier is recommended because it makes it much easier to see residual contamination, debris or damage.

3.51 Ensure that:

- there is free movement of all parts and that joints do not stick;
- the edges of clamping instruments meet with no overlap and that teeth mesh together;
- scissor edges meet to the tip and move freely across each other with no overlap or burrs (rough edges);
- all screws on jointed instruments are tight and have not become loose during use.

3.52 Inspect instruments for any visible soiling such as blood or dental materials. It is especially important to check joints, hinges or the serrated surfaces of jaws, which are difficult to clean. If there is any residual contamination, reject the instrument and ensure it undergoes another cycle of the cleaning process.

3.53 Occasional use of a lubricant may be required where hinged instruments are found to be stiff. A non-oil-based lubricant should be used to avoid it interfering (that is, preventing the steam coming into contact with the instrument surface) with the sterilization process.

3.54 Instruments may become damaged during use or suffer from general wear and tear over their life span. If devices are found to be faulty or damaged during inspection and function-testing, or if users identify that they are faulty, they should be taken out of use and either repaired or replaced. Instruments for repair should be decontaminated, labelled to identify they have been through the decontamination process and then returned to either the manufacturer or a reputable repair company.

Handpiece care

3.55 Lubricate handpieces according to the manufacturer's instructions. Those that have been processed in a washer-disinfector might have had the lubricant removed and require lubrication again before going into the sterilizer.

3.56 Use a separate canister of lubricant for cleaned instruments. Label the canisters so that it is clear which canister is used for unclean instruments and which is used for instruments that have been cleaned in a washer-disinfector. Another canister for use with handpieces after sterilization might be required if the manufacturer recommends it.

3.57 Inadequate lubrication can lead to unnecessary damage to the internal mechanism.

3.58 The cleaning process is now complete and the instruments are ready for sterilization.

4.0 Sterilization

Guidance on the installation, validation, maintenance and testing of sterilizers can be found in Section 3.

4.1 This chapter should be read in conjunction with the policy foreword.

Types of sterilizer

4.2 Saturated steam under pressure delivered at the highest temperature compatible with the product is the preferred method for the sterilization of most instruments used in the clinical setting.

4.3 To facilitate sterilization, load items should first be thoroughly cleaned and disinfected (where a washer-disinfector has been used). This technique, when properly validated, is effective in reducing prion infectivity. In the case of newer machines, the parameters monitored for each cycle of use will be stored and/or available as a printout to provide a short-term record. The use of automated data-loggers or interfaced small computer-based recording systems is acceptable provided the records are kept securely and replicated. These records should be photocopied as the quality of the printout fades over time. Where machines are not so equipped, manual record-keeping will be required. The record should, at minimum, document the absence of a failure warning or the temperature/pressure achieved as appropriate to the indications provided. It is recommended that records be maintained for not less than two years

4.4 It is likely that steam sterilizers used in dental practices will have a chamber volume of less than 60 L and are thus considered to be small devices within the standards applied by national and international bodies.

4.5 Standards describe three types of small sterilizer used within the healthcare setting:

- Type N: Air removal in type N autoclaves is achieved by passive displacement with steam. They are non-vacuum sterilizers designed for unwrapped, non-hollow and non-air retentive instruments.
- Type B (vacuum): Type B sterilizers incorporate a vacuum stage and are designed to reprocess load types such as hollow, air-retentive and packaged loads, including handpieces. A number of different cycles may be provided. Each cycle should be fully validated and used in accordance with instructions provided by both the sterilizer manufacturer and the instrument manufacturer(s)
- Type S: These sterilizers are specially designed to reprocess specific load types, which may include handpieces. The manufacturer of the sterilizer will define exactly which load, or instrument, types are compatible. These sterilizers should be used strictly in accordance with these instructions.

Types B and N are most frequently used in dental practice.

4.6 In each case, practice staff should consult with the manufacturer/supplier of the sterilizer(s) to ascertain the status of the machine in respect of validation/verification and the recording of parameters achieved during sterilization cycles.

Dental handpieces

4.7 Dental handpieces are constructed with a number of internal channels and pathways. These features are often difficult to clean, although the use of a validated automated washer-disinfector may be successful provided that handpiece and washer-disinfector are of known compatibility. Where this is established, sterilization using a type-N displacement device is likely to be useful, although it should be accepted that sterility is unlikely to be obtained (partly in view of the presence of lubricating materials).

4.8 If no validated and compatible washer-disinfector is available, steam sterilization will still be of value in generating a reduction in contamination levels and bioburden. Accordingly, progress towards best practice may be seen as a further risk reduction measure in this context.

Note

This guidance document recognises the uncertainties regarding current decontamination techniques in terms of both reproducibly achieving sterility and also generating prion contamination reduction, should prions be present. Particularly within the essential-quality-requirements framework, the emphasis is on risk reduction rather than elimination. As new knowledge and technologies that are aimed at further risk reduction become available, so amendments will be made to this guidance (see Section 3).

Small sterilizers

4.9 Small sterilizers should be operated to ensure that:

- they are compliant with the safety requirements stated in this guidance and in the manufacturer's notes;
- they are installed, commissioned, validated and maintained appropriately in compliance with the manufacturer's instructions. In addition MHRA provides further information via their website (DB 2002(06)) – <http://www.mhra.gov.uk/Publications/Safetyguidance/DeviceBulletins/CON007326>;
- they are operated in accordance with the equipment manufacturer's instructions.

4.10 Where sterilization equipment has been used for significant periods using tap water or other water not as specified here, then calcification build-up is likely to have occurred. Under these circumstances, the machine should be inspected by an engineer or returned to the supplier/manufacturer for refurbishment.

4.11 Users should be aware of this cautionary note relating to the improper use of small sterilizers:

Wrap instruments only where this is recommended by the manufacturer and where the sterilizer is vacuum-assisted. The sterilizer should be validated for the intended load and is likely to be of Type B or S. **The use of a type-N sterilizer is not appropriate for wrapped instruments.**

4.12 All steam sterilizers are subject to the Pressure Systems Safety Regulations 2000 and must be examined periodically by a Competent Person (Pressure Vessels). The Competent Person (Pressure Vessels) should be available through the insurance company (see Section 3).

Use and testing of small sterilizers

4.13 To ensure the safety of this device, the following points should be adhered to:

1. Each sterilizer will have a reservoir chamber from which the water is delivered for steam generation; this should be filled daily using fresh distilled or RO water. At the end of the day or following final use, the chamber should be drained after the water has cooled. The device should then be cleaned, dried, and left empty with the door kept open. For single-shot types, which do not store water between cycles of use, these rules still apply in terms of the water quality to be used.
2. Validation is necessary to demonstrate that the physical conditions required for sterilization (temperature, pressure, time) are achieved. Consultation with appropriately qualified engineers through a PCT or commercial arrangements will be necessary in this area. The engineer will be able to ensure that validation is achieved and that the instrumentation used for parametric release is functioning and calibrated appropriately. Full details on the standard can be found in BS EN 13060. An Authorising Engineer (Decontamination) will be needed to revalidate the equipment (see Section 3).

Parametric release is defined as the release of a batch of sterilized items based on data from the sterilization process. All parameters within the process have to be met before the batch can be released for use.

3. Testing is an integral part of ensuring a small sterilizer consistently performs to operating parameters set during the machine's commissioning. Failure to carry out routine periodic tests and maintenance tasks could compromise safety and have legal and insurance-related implications for the user or owner of the sterilizer.
4. A schedule for periodic testing should therefore be planned and performed in accordance with the content of BS EN 13060 (see Section 3). The schedule should provide details of daily, quarterly and yearly testing. Each sterilizer should have a logbook (file) in which details of the following are recorded:
 - maintenance;

- validation;
- faults;
- modifications;
- routine tests.

4.14 Health Service Circular (HSC) 1999/053 and the subsequent 'Records management: code of practice parts 1 and 2' (April 2006) provide guidance on the length of time for which records should be retained. Reference should be made to the time period of legal rights of patients, and all relevant documentation should be retained for the practice to meet any request within these rights. The code requires that these records be maintained for not less than two years, although longer periods may be applicable subject to local policy-making at PCT level.

4.15 Examples of logbook pages can be found in Section 3. The logbook should contain all information pertaining to the lifecycle of the equipment (from purchasing through to disposal).

4.16 If the sterilizer has an automatic printer, the printout should be retained. If the sterilizer does not have printer, the user will have to manually record the following information:

- date;
- satisfactory completion of the cycle;
- signature of the operator.

Daily testing and housekeeping tasks

4.17 Some small sterilizers require a warm-up cycle before instruments can be processed. The manufacturer's instruction manual should be consulted to find out whether this is the case.

4.18 The daily tests should be performed by the operator or user and will normally consist of:

- a steam penetration test (vacuum sterilizers only);
- an automatic control test – Helix or Bowie-Dick tests (all small sterilizers).

4.19 Record these outcomes with the date and signature of the operator in the logbook.

4.20 The tests may be carried out at the same time.

4.21 Sterilizers should not be used until the daily tests and housekeeping tasks have been carried out and the results found to be satisfactory.

4.22 Before carrying out the daily tests, the user should:

- clean the rubber door seal with a clean, damp non-linting cloth;
- check the chamber and shelves for cleanliness and debris;
- fill the reservoir with fresh distilled or RO water;
- turn the power source on.

4.23 If the sterilizer fails to meet any of the test requirements, it should be withdrawn from service and advice should be sought from the manufacturer and/or maintenance contractor.

Packaging and related decontamination strategy

4.24 There are three combinations of steam-sterilization and instrument-wrapping strategies that can be used within dental practices:

- a. With a vacuum steam sterilizer (types B and S), instruments will be pre-wrapped using purpose-designed materials that are compatible with the sterilizer. Wrapping should take place with a dry product shortly after washing and disinfection. Once the wrapped instruments have been sterilized satisfactorily, the product may be stored for up to 30 days (see paragraph 1.24). Note: instruments need to be dry before they are packaged.
- b. With a displacement steam sterilizer (type N), the instruments will not be wrapped prior to sterilization. Immediately after removal from the sterilizer, instruments may be wrapped using suitable sealed view-packs. In addition, the entire tray may be placed within a sealed pack for storage purposes. In both of these instances, storage for up to 21 days is recommended.
- c. Products from a type N sterilizer may also be transferred for use within the current session. In this instance, while covering the instruments is essential to protect against dust and aerosols, wrapping is not required. However, the instruments are not regarded as “stored” and should therefore be used or streamed for a further decontamination process within one session.

4.25 In (a), the instruments should be dry before they are placed in the purpose-designed packaging. In (b), again instruments should be dry before being packed. For (c), instruments will be dry before being transferred for clinical use. In all three cases, the instruments should be dried using disposable non-linting cloths and be appropriately handled. It is essential to ensure that the cloth is adequately dry and free from contamination. Accordingly, the cloth should be disposed of after each sterilizer load.

Note

Regardless of the packaging used, where instruments are to be stored, the date by which they should be used or by which they are subject to a further decontamination cycle should be clearly indicated on the packaging.

4.26 A systematic labelling standard is provided in BS EN 868. An example of the labels used is given in Section 3.

Storage of sterilized instruments/devices

4.27 Regardless of the approach described above, it is essential that stored instruments are protected against the possibility of recontamination by pathogens. A barrier(s) should therefore be maintained between the instruments and the general practice environment. This may be achieved by ensuring that instruments are stored in an environment where they are protected against excessive heat and where conditions remain dry.

4.28 With a view to minimising pathogenic recolonisation (infection risk), the storage of wrapped instruments requires thorough control. This implies the rigorous maintenance of records, clear identification of instrument packs in terms of their content, and controls (storage times) on when instruments are used. For the majority of commonly used instruments, a first-in first-out principle will be helpful.

4.29 As a general rule:

- The storage of reprocessed surgical instruments should ensure restraint of recolonisation. This will often mean protection against aerosols and sundry contact with other equipment. The area in which the packaging of sterilized instruments (that is, those reprocessed in a type N sterilizer) takes place should be an open bench area. It should be kept free of clutter and wiped clean by the use of detergent and alcohol wipes at sessional intervals.
- The storage area should be dedicated for the purpose. It is recognised that some practice arrangements will involve storage of instruments within rooms that are also used for clinical work. In meeting the essential quality requirements, this will require that the instruments be as far from the dental chair as reasonably practicable. Best practice requires that instruments not scheduled for use with the current patients be stored in a separate environment. Where instruments need to be stored within the clinical area, the use of a purpose-designed storage cabinet that can be easily cleaned will be useful.
- The storage area should be appropriately designed to prevent damage to instruments and to allow for the strict rotation of stocks.
- Cupboards should be capable of being easily cleaned and used in conjunction with sealed view-packs or covered/sealed trays.
- Products should be stored above floor level away from direct sunlight and water in a secure, dry and cool environment.
- Although air movement is often difficult to control in non-purpose-designed premises, whenever possible, airflow should be from the clean to dirty areas.

4.30 Before being used, the instruments should be checked to ensure that:

- if packed, including the use of view-packs, the packaging is intact;
- the sterilization indicator confirms the pack has been subjected to an appropriate sterilization process (if a type B sterilizer is used);
- if a covered container is used, the instruments have remained covered;
- visible contamination is absent.

4.31 As part of essential quality requirements, instruments that have remained unused for more than 21 days and are not in a validated sterile pack (processed by a vacuum sterilizer) should be subjected to a further cycle of decontamination before being used. Where vacuum sterilizer packs are in use, the limitation on storage may be extended to 30 days. These rules are based upon expectations and some published evidence on recontamination rates. However, the user's attention is drawn to the need for rigorous quality control in packaging and storage of instruments.

5.0 Setting up a decontamination area

5.1 There is a clear need to maximise the separation of decontamination work from clinical activity within the constraints of space and room availability. Where instruments are reprocessed in the same room as the patient treatment area, the reprocessing area should be as far from the dental chair as practicality allows. As dental practices progress towards higher standards, removing the decontamination process from the treatment room should be a priority. For example layouts, see Figures 1–3.

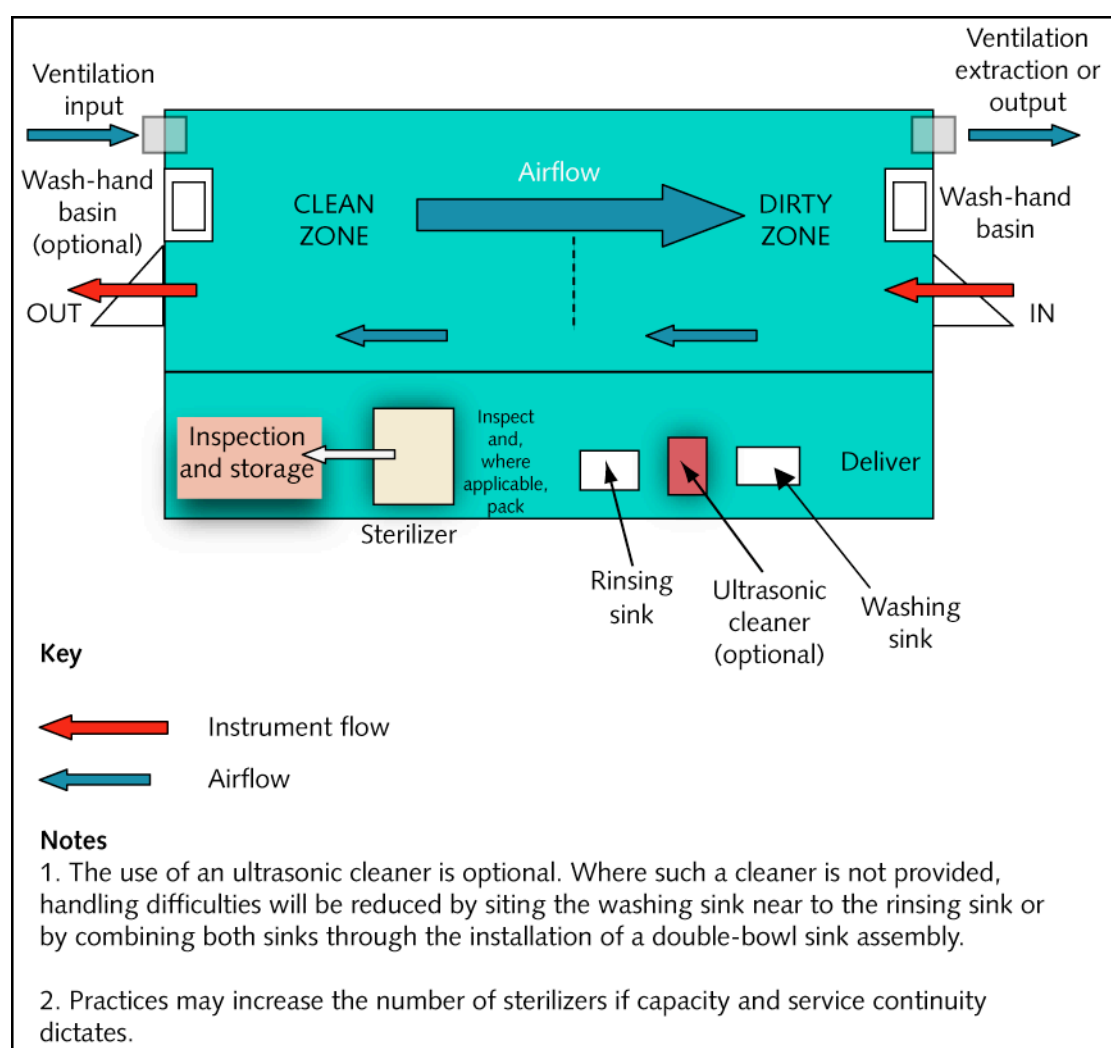


Figure 1: Example layout for essential quality requirements

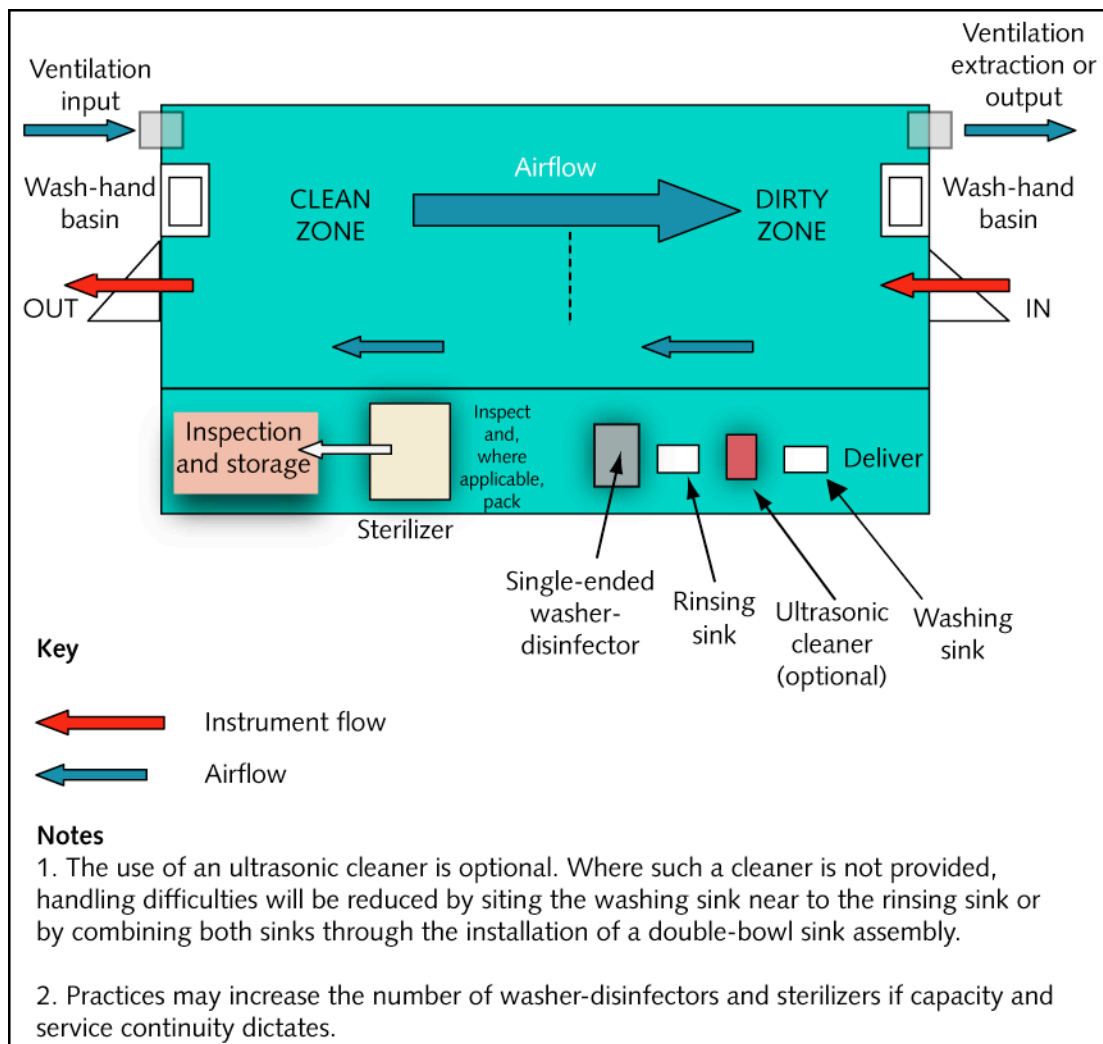


Figure 2: Example layout for single decontamination room

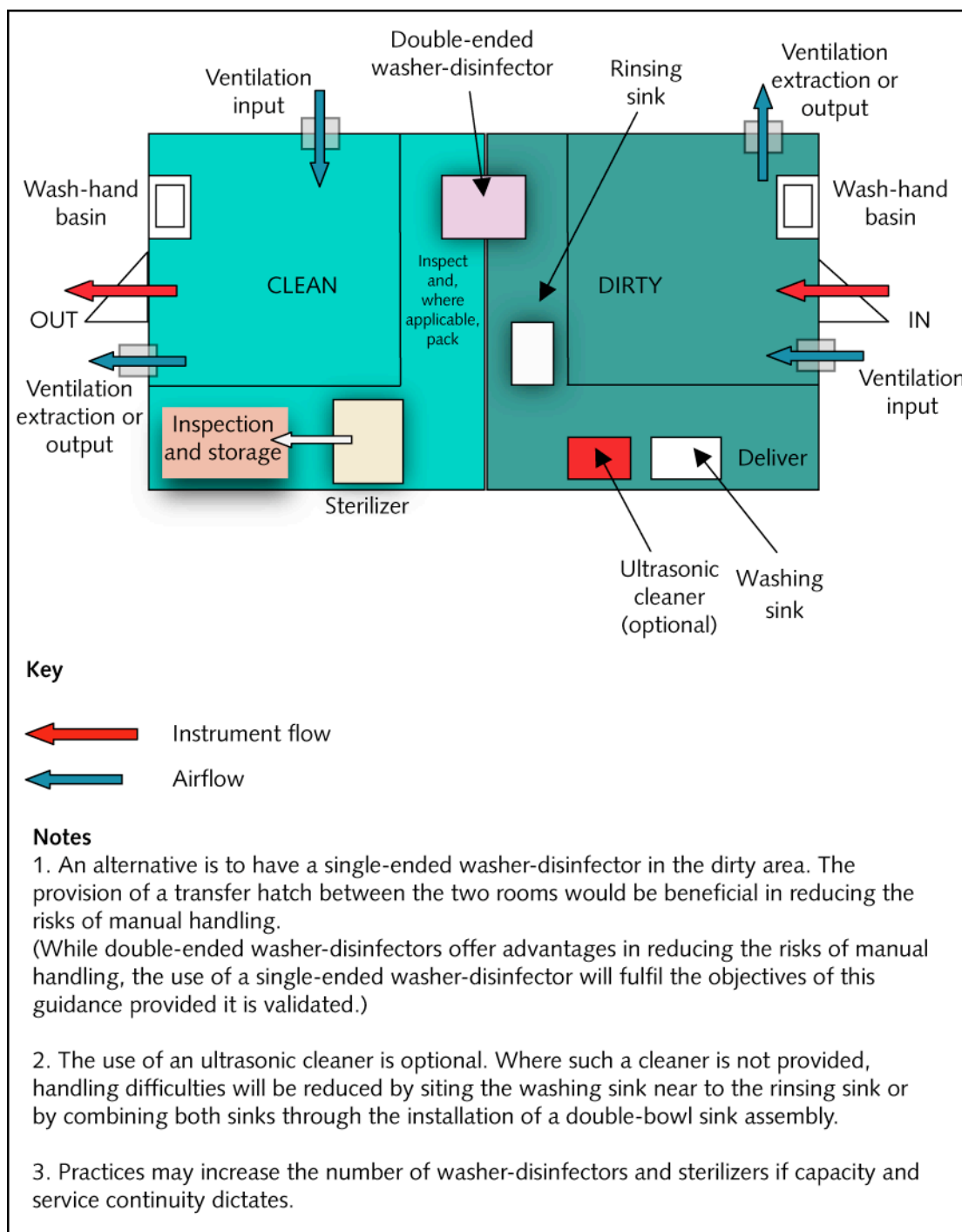


Figure 3: Example layout for two decontamination rooms

5.2 If decontamination has to be carried out in a patient treatment room, to minimise the risks both to the patient and of cross-contamination of instruments, appropriate controls should be in place. Uncontrolled procedures that generate the risk of exposure to aerosol dispersion or splashes (such as manual washing, the use of an ultrasonic cleaner without a sealed chamber (or lid) or the opening of decontamination equipment) should NOT take place while the patient is present.

5.3 Regardless of the choice of location used for the reprocessing facilities, a dirty-to-clean workflow should be maintained so that used instruments are at a lower risk of coming into contact with decontaminated instruments. This requires a well-developed routine for surface cleaning/decontamination within the facilities:

- The decontamination area should be wiped down carefully after each decontamination cycle is completed.
- For clinical areas, a similar wipe-clean is required after each patient procedure and before the next patient is admitted. Procedures for the wipe-down processes are described in Chapter 6.

5.4 Where a dedicated decontamination area has been developed, separated from the patient treatment area in another room or rooms, enhanced dirty–clean separation should be a priority in design and operation.

5.5 When setting up new premises or planning significant modification to existing premises, the separation of the decontamination area from the clinical area is recommended. The provision of two separate rooms is the preferred option as it provides for a higher degree of separation between dirty instruments awaiting decontamination and cleaned/sterilized instruments that are to be placed in trays, packs or containers for use:

- one room for dirty activity (cleaning instruments); and
- one room for clean activity (inspection, sterilization and wrapping instruments).

The clear intention is to reduce the risk and extent of recontamination as well as providing for a very clear operation distinction between clean and dirty.

5.6 Irrespective of the specific layout, a tidy working environment makes carrying out decontamination easier. Therefore, the working environment should be decluttered. The decontamination process should be carried out by ensuring that a dirty-to-clean workflow is maintained (as outlined in paragraph 5.7). This is a one-way process that can be achieved by physical segregation or temporal separation (see paragraph 5.2).

Physical segregation

5.7 Physical segregation within essential quality requirements means using different areas for different activities. Set up a decontamination area that preferably comprises a single run of sealed, easily cleaned worktops. The following key design points should be observed:

- The dirty zone will be used to receive contaminated instruments. An area of benching should be clearly designated for this purpose and used for no other activity.
- The washer-disinfector (where available) and/or washing and rinsing sinks or separate bowls within a single sink unit should be installed adjacent to the receiving area. Where necessary, usually owing to space constraints, it is

acceptable to use a single sink unit (incorporating two bowls with common supply and taps) for the functions described here.

- The ultrasonic cleaner (where used) should be separated from the receiving area and adjacent to the rinsing sink/bowl.
- Where a washer-disinfector is used, this may be located adjacent to an ultrasonic cleaner and/or a rinsing sink/bowl but well away from the receiving area.
- After washing and disinfection (where applicable), the instruments and devices require inspection. A dedicated clean area of benching with good task lighting should be provided.
- The sterilizer should be situated well away from the other activities/facilities in order to promote staff safety and good decontamination practice.
- After sterilization, the sterilizer will need to be unloaded into another clean, well-lit area. Ensure that this area is kept clean – particularly just before the sterilizer is emptied.
- Where possible, air movement should be from clean to dirty areas (see paragraphs 6.41–6.42).
- A wash-hand basin should be provided for use by staff at the completion of each stage in the decontamination process. Where this work is conducted adjacent to the treatment area, it is acceptable for a single wash-hand basin to be used for this and clinical handwashing. However, this basin should be distinctly separate from the sinks used in decontamination.
- Where a double-ended washer-disinfector is used, the input door in the dirty area and that used to empty the clean instruments should be separated by a barrier. Alternatively, the washer-disinfector should be built directly into the separating wall between the dirty and clean areas.

5.8 This guidance recognises that, because of physical limitations on space, it may take longer for some practices to meet the best practice requirements. In areas where building alterations to existing premises are restricted and/or purpose-built premises may be difficult or impossible to acquire, best practice may not be achievable.

6.0 General good practice principles

Hand hygiene

6.1 The term hand hygiene covers not only handwashing, but also alternative and additional measures such as hand disinfection using anti-bacterial-based hand-rubs/gels.

6.2 Hand hygiene is crucial in preventing the spread of infection and the recontamination of surgical instruments and devices. Clean hands are an essential counterpart to the use of gloves. Neither measure is a substitute for the other.

6.3 As part of essential quality requirements, training in hand hygiene should be part of staff induction and be provided to all relevant staff within dental practices annually. Advice is available from the National Patient Safety Agency's (NPSA) website (<http://www.npsa.nhs.uk/cleanyourhands>).

6.4 There are three different levels of hand hygiene (see Section 3). The level required depends on the potential for contamination of the hands and the risk factors related to the process to be undertaken. For the decontamination of devices, as described here, good levels of social hand hygiene will be sufficient. Accordingly, the aim is to render the hands physically clean and to remove transient microorganisms encountered in the performance of normal duties.

6.5 Hand hygiene should be practised at the following key stages in the decontamination process so as to minimise the risk of contamination:

- following the washing of dental instruments;
- before contact with instruments that have been steam-sterilized (whether or not these instruments are wrapped);
- after cleaning or maintaining decontamination devices used on dental instruments;
- at the completion of decontamination work.

6.6 Plain or antimicrobial liquid soap should be used when washing hands. Bar soap should not be used. Apply the liquid soap to wet hands to reduce the risk of irritation, and perform handwashing under running water. Ordinarily, the handwash rubbing action should be maintained for about 15 seconds. After the exercise, the hands should be visibly clean. Where this is not the case, the hand hygiene procedure should be repeated.

Drying of hands

6.7 Effective drying of hands after washing is important because wet surfaces transfer microorganisms more easily than when they are dry, and inadequately dried

hands are prone to skin damage. To prevent recontamination of washed hands, disposable paper towels should be used.

Skin care

6.8 Hand cream, preferably water-based, should be used to avoid chapped or cracking skin. Communal jars of hand cream are not desirable as the contents may become contaminated and subsequently become an infection risk. Ideally, wall-mounted hand-cream dispensers with disposable cartridges should be used. Any staff that develop eczema, dermatitis or any other skin condition should seek advice from their occupational health department or general practitioner (GP) as soon as possible.

6.9 Fingernails should be kept clean, short and smooth. When viewed from the palm side, no nail should be visible beyond the fingertip. Staff undertaking dental procedures should not wear nail varnish and false fingernails.

6.10 Rings, bracelets and wristwatches should not be worn by staff undertaking clinical procedures. Staff should remove rings, bracelets and wristwatches prior to carrying out hand hygiene. A wedding ring is permitted but the skin beneath it should be washed and dried thoroughly, and it is preferable to remove the ring prior to carrying out dental procedures.

Facilities and procedures for handwashing

6.11 In accordance with the advice above, a separate wash-hand basin should be provided:

- The basin should not have a plug or an overflow and be fitted with a remote running trap (that is, the U-bend is not directly under the plughole).
- It should have a sensor-operated or lever-operated mixer tap.
- Taps should not discharge directly into the drain aperture as this might generate aerosols.

6.12 Wall-mounted liquid handwash dispensers with disposable cartridges should be used. It should be ensured that the nozzle is kept clean. Refillable handwash containers should not be used as bacteria can multiply within many of these products and are therefore a potential source of contamination.

6.13 Hand hygiene is an essential part of preventing infection in the practice. A poster depicting a six- or eight-step method should be displayed above every clinical wash-hand basin in the practice (see Section 3).

Personal protective equipment for decontamination processes

6.14 The local infection control policy should specify when personal protective equipment (PPE) is to be worn and changed.

6.15 Appropriate PPE should be worn during decontamination procedures. PPE includes clinical disposable gloves, household gloves, plastic disposable aprons, facemasks, eye protection and adequate footwear.

6.16 When used appropriately, and in conjunction with other infection control measures, PPE forms an effective barrier against transmission of infection.

Gloves

6.17 Gloves are needed:

- to protect hands from becoming contaminated with organic matter and microorganisms;
- to protect hands from certain chemicals that will adversely affect the condition of the skin. Particular care should be taken when handling caustic chemical agents, particularly those used in disinfection and for washer-disinfectors;
- to minimise the risks of cross-infection by preventing the transfer of organisms from staff to patients and vice-versa.

6.18 Used gloves should be removed before performing activities that require strict aseptic precautions or when touching equipment difficult to clean (such as computer keyboards).

6.19 It is important that gloves fit properly. For this reason, plastic gloves are not a satisfactory substitute for other glove types. The use of latex gloves in dental and other applications will be phased out by the end of 2008. The use of vinyl or nitrile gloves may be a satisfactory substitute.

6.20 Powdered gloves should not be used. Individuals who are sensitised to natural rubber latex proteins and/or other chemicals in gloves should take advice from their GP or occupational health department for an alternative to latex gloves.

6.21 All gloves used in the practice should be:

- low in extractable proteins (<50 ug/g);
- low in residual chemicals;
- powder-free.

6.22 Gloves other than domestic household types are single-use only. They should be discarded as clinical waste.

6.23 Jewellery (for example, watches, dress rings, bracelets etc) may damage the integrity of the glove and therefore should not be worn.

6.24 The following additional guidance is provided:

- Long or false nails may also damage the glove, so keep nails short and clean.

- Glove integrity can be damaged if in contact with substances such as isopropanol or ethanol; therefore, alcohol rubs/gels should not be used to decontaminate gloves.
- Gloves (except household gloves) should not be washed as liquids may be absorbed into the glove and compromise the efficacy of the barrier.
- Storage of gloves should follow manufacturers' recommendations.
- Domestic household gloves, if used, should be washed with detergent and hot water and left to dry after each use to remove visible soil. Replace these gloves weekly or more frequently if worn or torn or if there is any difficulty in removing soil.

Disposable plastic aprons

6.25 These should be worn during all decontamination processes.

6.26 Aprons should be used as a single-use item and disposed of as clinical waste. Plastic aprons should be changed at the completion of each procedure.

Face and eye protection for decontamination procedures

6.27 During cleaning procedures, there is a risk of contaminated fluids splashing onto the face and into the eyes. Therefore, the dental team should ensure protection of their mucosa from splashes and other contaminated fragments that may escape during these procedures.

6.28 Face masks are single-use items and should be disposed of as clinical waste.

6.29 Spectacles do not provide sufficient eye protection unless specifically designed for the purpose. It is advisable to wear a visor or face shield over spectacles; this gives added protection for prescription glasses.

6.30 Eye protection may be reusable but is often difficult to clean. It may be reused if cleaned according to manufacturers' instructions. This should take place when it becomes visibly dirty and/or at the end of each session. Disposable visors are available and may be used.

6.31 Footwear should be fully enclosed, in good order and comply with health and safety guidance. Particular care should be taken concerning the risk of chemical or hot water spillage onto feet.

Clothing, uniforms and laundry

6.32 A wide variety of clothing is worn in dental surgeries and in many practices is used to reinforce the corporate image. Overall guidance is provided in the Department of Health's (2006) 'Uniforms and workwear: an evidence base for developing local policy'.

6.33 Clothing worn to undertake decontamination should not be worn outside the practice; adequate changing and storage facilities that are accessible from the

decontamination area should be provided. A similar approach is recommended for clinical clothing.

6.34 Short sleeves allow the forearms to be washed as part of the hand hygiene routine. Dental staff need to be aware of the hazards that may be encountered in the decontamination process and may wish to wear long-cuffed gloves or disposal long-sleeved gowns to protect their arms.

6.35 Clothing/uniforms can become contaminated with microorganisms during procedures. It is important that freshly laundered uniforms are worn everyday. Sufficient uniforms for the recommended laundry practice should be provided, as staff who have too few uniforms may be tempted to reduce the frequency of laundering.

6.36 Machine-washing clothing with a suitable detergent at a minimum temperature of 65°C will reduce any potential microbial contamination (see Health Technical Memorandum 01-04). (For guidance relating to contact with chemical substances, see the Health & Safety Executive's guidance on COSHH – <http://www.hse.gov.uk/coshh>.)

Removal of PPE

6.37 Depending on the type of PPE worn, items of PPE should be removed in the following order:

- a. Gloves should be removed first (so that the gloves end up inside-out). Make sure hands do not get contaminated when removing gloves. Wash hands thoroughly, if visibly contaminated, before removing the rest of the PPE.
- b. Plastic disposable apron. The plastic apron is removed by breaking the neck straps and carefully gathering the apron together by touching the inside of the apron only. Avoid touching the outer contaminated area.
- c. Face mask. Remove the mask by breaking the straps or lifting over the ears and dispose of into a clinical waste receptacle. Avoid touching the outer surface of the mask and do not crush the mask before disposal. Masks should never be left to hang around the neck and should be disposed of immediately after use.
- d. Face and eye protection. Take care not to touch the outer surfaces. Single-use eye protection should be disposed of into the clinical waste receptacle.
- e. Wash hands thoroughly again.

Surface and equipment decontamination

General

6.38 Surfaces and equipment used in the decontamination of dental instruments should be cleaned carefully before and after each decontamination process cycle. The procedure used should comply with written local policies.

6.39 All surfaces should be such as to aid successful cleaning and hygiene. Wherever possible, surfaces should be continuous and free from damage and abrasion. They should be free from dust and visible dirt.

Environmental conditions

6.40 The environmental conditions in decontamination facilities should be controlled to minimise the likelihood of recontamination of sterilized instruments. Key considerations include the cleanability of surfaces, fittings and equipment.

6.41 Ventilation and air quality are important considerations. In non-purpose-built facilities, the control of airflow is a challenging issue. Responsible persons (see Section 3) will need to consider how good standards can be achieved without resorting to unreasonably complex or expensive ventilation systems. Through-wall fan-based ventilation and extraction units will often be useful in this context. In particular, cassette-based systems can be simple to install and produce a balanced airflow at low cost. The use of free-standing fan units, however, is not recommended.

6.42 Mechanical ventilation systems may be advantageous, particularly where best practice requirements are being pursued. However, these systems can be expensive in terms of both capital and running costs. Accordingly, designs that make best use of natural ventilation in clinical areas may be advantageous, while the use of simple fan-based systems in decontamination areas will be helpful. It should be remembered that protecting against recontamination of instruments is always a key aim.

Detailed guidance can be found in BS 5925:1991.

6.43 The ventilation system in the decontamination area or room(s) should be designed to supply reasonable quantities of fresh air to the positions where persons work and to remove excess heat from equipment and processes.

6.44 Where used, mechanical extract units should be ceiling- or high wall-mounted. Care should be taken to ensure that airflow is from clean to dirty.

6.45 Where full mechanical ventilation solutions are used, the extract system should be located and sized to draw about one-third of the air across the decontamination benches in the clean-to-dirty direction. Mechanical ventilation equipment should include coarse air filtration on the input side. This will require periodic maintenance. Practices are advised to consult a heating and ventilation engineer if choosing to install a mechanical ventilation system.

Surfaces and equipment – key design issues

6.46 All surfaces and equipment should be impervious and easily cleanable. Work surfaces and floor coverings should be continuous, non-slip and where possible jointless. Health Facilities Note 30 – ‘Infection control in the built environment’ states

that the use of carpets is **not** advised within any clinical or associated (decontamination) area. Attractive vinyl flooring materials are available which can provide aesthetic appeal.

6.47 There should be coving between the floor and the wall to prevent accumulation of dust and dirt in corners and crevices.

6.48 Any joints should be welded or sealed where they are unavoidable. Sealing prevents damage due to water ingress under the flooring.

6.49 It should be ensured that surfaces:

- can be easily accessed;
- will dry quickly.

6.50 Manufacturers' advice should be sought in terms of the compatibility of detergents and disinfectants with the surface materials used.

Decontamination equipment

6.51 Specialist items of equipment (for example, ultrasonic baths, washer-disinfectors, sterilizers and RO) may require cleaning and decontamination processes that are purpose-designed. Although information will be provided by manufacturers, it is recommended that, when writing local protocols, assistance is sought from a qualified decontamination engineer or other trained person. This may be a Competent Person (Decontamination) employed by the equipment provider or local sterile services department (SSD). In the latter case, it should be possible to contact the local Competent Person via the PCT's or SHA's offices.

6.52 Planned cleaning programmes will have links to preventive maintenance and the validation process. Local policies should reflect these requirements and clearly state the intervals at which actions are to be taken and a procedure for the keeping of records.

6.53 It is often during cleaning work that minor defects, wear or damage to equipment will be detected. Local policies should ensure that such defects are reported to the responsible person.

For floor and general surface cleaning, the NPSA has published a guidance package backed by a colour-coding system for use with materials and equipment. This system may also be useful for dental practices (visit <http://www.npsa.nhs.uk/nrls/alerts-and-directives/notices/cleaning-materials>).

Cleaning protocols and techniques

6.54 The dental practice should have a local (following a dirty-to-clean regime) protocol clearly outlining cleaning schedules. Simple records should be maintained.

6.55 Cleaning staff should be briefed on the special measures to be observed in cleaning of patient care areas or room(s) used for decontamination. In some instances, full training of personnel will be needed.

6.56 If instruments become contaminated (through, for example, being dropped or being placed in a dirty area), they should be sent for further reprocessing.

6.57 Evidence suggests that the use of commercial alcohol-based cleaning agents and wipes is helpful in maintaining cleanliness and reducing viral contamination of surfaces. However, the careful use of water with suitable detergents is satisfactory provided the surface is dried after such cleaning.

Note:

Alcohol has been shown to bind blood and protein to stainless steel. The use of alcohol with surgical instruments should therefore be avoided.

6.58 The Department of Health has sponsored research on the use of both microfibre cloth and steam-cleaning technology in clinical and support-service areas. This work suggests that, provided deep cleaning is performed as an initial exercise, the subsequent use of microfibre-based techniques, essentially involving dry or wet wiping with microfibre cloth, can be helpful in achieving satisfactory removal of infectious agents from surfaces. Essentially the special fibre is capable of entangling and thus removing a wide range of pathogenic particles from surfaces to which they are otherwise adherent. However, as infective material is efficiently transferred to the microfibre, its reprocessing or disposal must take account of the infection risk. Reprocessing takes the form of washing through a conventional laundry process. The life of the cloth is likely to allow for repeated use on many occasions. The materials are available at relatively modest cost from infection control companies.

Detailed information is provided in “An integrated approach to hospital cleaning: microfibre cloth and steam cleaning technology” (available from DH Estates and Facilities Division’s Knowledge and Information Portal (<http://www.estatesknowledge.dh.gov.uk>)).

6.59 Local provision of steam cleaning from practice resources is unlikely to be economic. Instead the use of a contractor may be advantageous. Cleaning equipment should be stored outside patient care areas.

Decontamination of treatment areas

6.60 The patient treatment area should be cleaned after every session using disposable cloths or microfibre materials – even if the area appears uncontaminated.

6.61 Areas and items of equipment that need to be cleaned between each patient include:

- work surfaces (which may be covered as described above);
- dental chairs;
- curing lamps;
- inspection lights;
- hand controls including replacement of covers;

- trolleys;
- spittoons;
- aspirators.

Note

Spittoons and aspirating units need to be washed through at the end of a session according to manufacturers' instructions.

6.62 Areas and items of equipment that need to be cleaned after each session include:

- taps;
- drainage points;
- splashbacks;
- cupboard doors;
- sinks.

6.63 Items of furniture that need to be cleaned at regular intervals include:

- window blinds.

6.64 Purpose-made disposable single-use covers are available for many of the devices mentioned above, including inspection light handles and headrests. The use of these is encouraged but should not be taken as a substitute for regular cleaning. Covers should be removed and surfaces should be cleaned after each patient contact.

6.65 For infection control reasons, covers should be provided over computer keyboards or washable keyboards used in clinical areas. Where such covers or keyboards are provided, care should be taken to ensure that covers are changed or that washing is performed at frequent intervals. This should be regarded as a useful priority.

6.66 Cleaning centres on simple techniques using disposable cloths wetted with clean water and a detergent.

6.67 Dry cleaning should be avoided wherever possible as this may result in dust suspension.

6.68 Care should be taken to keep water well away from electrical devices, even though many of those provided in dentistry will have water-resistant housings.

6.69 All aspirators, drains and spittoons should be cleaned after every session with a surfactant/detergent (to break down the biofilm) and a non-foaming disinfectant.

6.70 After some clinical procedures, it is necessary to start cleaning as soon as care of the individual patient is complete. In these cases, staff should not wait until the end of the session to start cleaning the area.

6.71 Portable aspirators with reservoir bottles are not recommended. They are not fitted with filters and pose a considerable hazard when disposing of the contents.

6.72 Intra-oral radiology film and devices used in digital radiology imaging are potential sources of cross-infection. Accordingly, where reusable devices are used, they should be decontaminated in accordance with the manufacturer's instructions. For intra-oral holders, this will require the use of steam sterilization following washing and disinfection.

6.73 Soft toys are often difficult to clean and should accordingly not be provided within practices.

6.74 For blood spillages, care should be taken to observe a protocol that ensures protection against infection. The use of 1% sodium hypochlorite is recommended with a yield of 1000 ppm free chlorine (unless PCT policy suggests otherwise). Contact times should be reasonably prolonged. A higher free chlorine yield of up to 10,000 ppm is useful. The process should be initiated quickly and care should be taken to avoid corrosive damage to metal fittings etc. The use of alcohol within the same decontamination process is not advised.

Dental unit water lines

6.75 No currently available single method or device will completely eliminate biocontamination of dental unit water lines (DUWLs) or exclude the risk of cross-infection. To reduce contamination risk, a combination of methods is applicable (see Section 3):

- With regard to *Legionella* and other water-borne pathogenic agents, the Health Act Code of Practice (2006) on healthcare-associated infections states:
“Premises should be regularly reviewed for potential sources of infection and a programme should be prepared to minimise any risks. Priority should be given to patient areas although the exact priority will depend on local circumstances”.
- Best practice guidelines on the control of *Legionella* are provided in the Health & Safety Commission's 'Legionnaires' disease – the control of legionella bacteria in water systems. Approved Code of Practice & Guidance' (also known as L8) and Health Technical Memorandum 04-01 – 'The control of *Legionella*, hygiene, “safe” hot water, cold water and drinking water systems'.

Note:

The Health and Safety Commission's 'Approved Code of Practice: legionnaires' disease – the control of legionella bacteria in water systems' (commonly known as L8) gives practical advice on how to comply with UK health and safety law with respect to the control of *Legionella* bacteria. This Code is important in that it has a special legal status. If a healthcare organisation is prosecuted for a breach of health

and safety law, and it is proved that it did not follow the relevant provisions of the Code, that organisation would need to demonstrate that it had complied with the law in some other way, or a court would find it at fault.

- Guidance from L8 advises that at-risk systems, particularly those used with the patient, be drained down and cleaned at least at the end of each working day.
- Self-contained water bottles (bottled water system) should be removed, flushed with distilled or clean RO water and left open to the air for drying overnight. They should be stored inverted. Where visual contamination is present, flushing with a suitable disinfectant followed by thorough washing is necessary. The manufacturer's instructions will specify the disinfectant to be used and may also require the continuous presence of anti-microbial agents to prevent the build-up of biofilms.

Note:

The self-contained water supplies used for dental care systems should be freshly distilled or RO water (see Section 3).

- MHRA dental guidance advises that DUWLs should be flushed for at least two minutes at the beginning and end of the day and after any significant period when they have not been used (for example, after lunch breaks). In addition, DUWLs should also be flushed for at least 20–30 seconds between patients. Disinfection of these lines will be periodically necessary. The manufacturer's instructions should be consulted.

Note:

Care should be taken to minimise the occurrence of splashing and aerosol formation.

- For dental surgical procedures, surgical flaps or other access into body cavities involving irrigation, the use of sterile water or sterile isotonic saline provided from a separate single-use source is recommended.
- Apart from situations where there are indications from taste or odour, microbiological monitoring using dip slides for total viable counts (TVCs) is not considered necessary.
- Where monitoring is undertaken, the TVC should be expected to lie in the range 100 to 200 colony forming units per millilitre (cfu/ml). In general, this work will be conducted at 22°C. These measurements can be carried out by local microbiological services or by the Health Protection Agency. In the first instance, PCTs will be able to advise.
- Dental equipment requiring protection against backflow should have anti-retraction valves incorporated on all handpieces or waterlines (see Section 3). Responsible persons should ensure these are fitted where required. They must be regularly monitored and maintained.

6.76 Examples of dental equipment requiring backflow protection are:

- dental spittoons;
- three-in-one syringes;
- ultrasonic scalers;
- wet-line suction apparatus; and
- self-filling automatic radiographic processors (where still used).

6.77 Adherence to the equipment manufacturer's recommended cleaning procedures, including the use of the manufacturer's recommended chemicals, is a requirement for medical devices.

6.78 Where in-line filters are used, these will require treatment using an appropriate cleansing solution at intervals recommended by the manufacturer – but always at the end of each session. This step should be performed after first flushing the DUWL.

6.79 If the DUWL has disposable filters, they should be replaced daily.

6.80 When used with sterile water, independent water reservoirs are capable of delivering water with 10 to 100 cfu/ml total count. This can only be achieved by purging the line with biocide following manufacturers' instructions.

See Section 3 for further guidance on DUWLs.

7.0 Impressions, prosthetics and orthodontic appliances

7.1 Decontamination of these devices is a multi-step process to be conducted in accord with the device or material manufacturer's instructions. In general terms, and using an impression as the example, the procedure will be as follows:

- a. Immediately after removal from the mouth, the device should be rinsed under clean running water. This process should continue until the device is visibly clean. The use of a 1% sodium hypochlorite rinse is appropriate.
- b. Prosthesis and devices for oral use should receive disinfection according to the manufacturer's instructions. Frequently, this will involve the use of specific cleaning materials noted in the CE marking instructions rather than sodium hypochlorite. After disinfection, the device should again be thoroughly washed.
- c. If the device is to be returned to a supplier/laboratory or in some other fashion sent out of the practice, a label to indicate that a decontamination process has been used should be affixed to the package.

References

It should be noted that this list may not be totally inclusive at the time of reading. Advice should be sought on the currency of these references and the need to include new or revised documents.

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