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Code of Practice Relating to: Infection Prevention and Control

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Code of Practice Relating to:

Infection Prevention and Control

Promoting transparency and enhancing public
confidence in the dental profession

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Code of Practice relating to: Infection Prevention and Control

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Introduction

Welcome to the Dental Council's revised Code of Practice Relating to Infection Prevention and Control (IPC). This Code updates our previous published advice on practical measures for infection prevention and control in the light of current knowledge and in line with our commitment to improving standards in dental practice. It builds on existing good practice and renews the Dental Council's commitment to high standards of patient safety and welfare. It is intended that this Code will be of use to both the dental profession and members of the public.

The Dental Council's primary role is to protect the public. Its standards are set at a level which ensures, as far as possible, that patients receive safe care in an appropriate environment when they receive dental treatment.

Infection prevention and control in dental practice is the focus of continuing research and debate and consequently recommendations and guidelines are regularly reviewed in the light of available information. The implementation of an infection prevention and control policy and Standard Operating Procedures (SOPs) requires a thorough knowledge of the risks involved and practical measures to be taken to minimise these risks. Following sensible and practical procedures, as outlined in this Code, will minimise the risk of transmission of infection between patients and dental healthcare professionals.

This Code may have some aspects that are difficult to implement initially, but it presents an acceptable standard which dental practices should use as a baseline from which to evolve and to plan the attainment of best practice standards. It is accepted that the standards set out in this Code will themselves develop as the science that underpins them evolves, and as statutory requirements dictate, and that it will be necessary to further revise this Code in line with these as they develop.

This Code of Practice sets out the standards required to minimise the risk of infection to patients and dental healthcare professionals alike. You must adhere to this Code's standards and plan to upgrade your practice to them. You must also ensure that best practice is in accordance with evolving evidence on infection prevention and control procedures and in line with legislative changes.

Dr Eamon Croke
President

Acknowledgements

We wish to thank everyone who has participated in the development of this Code of Practice. In particular, we want to acknowledge the work of the Infection Prevention and Control Sub-Committee. Also, we wish to thank those who took up the Council's invitation to contribute to this Code and all members of the Dental Council who took part in advancing this amended Code of Practice.

Guiding Principles of the Code

Section 66 of the Dentists Act, 1985, requires the Dental Council to guide the dental profession on all matters to do with ethical conduct and behaviour.

It is the responsibility of dentists and all personnel working in the dental team to be aware of a number of core principles. Everyone has a responsibility to protect their health and the health of patients from the risk of infectious diseases. Leaders of dental teams also have a responsibility to those working under their direction. While responsibility for continuous education and training lies with each individual, each team leader and employer has an overall responsibility for his/her staff.

Failure to comply with this Code may result in fitness to practice proceedings being taken under the Dentists Act, 1985.

Occupational Health

1.1 Guidelines

The following guidelines are relevant to this area and should be consulted in conjunction with the documents listed below:

- *Infection Prevention and Control for Primary Care in Ireland – a Guide for General Practice*, SARI (2013);¹
- *Guidelines for Hand Hygiene in Irish Healthcare Settings*, SARI (2005);²
- *Health Service Executive Standards and Recommended Practices for Dental Services in a Local Decontamination Unit (LDU)*, HSA (2012).³

1.2 Standard Precautions (see also Section 2)

The World Health Organisation (WHO) considers that Standard Precautions represent the minimum level of infection control that ought to be used in the case of all patients. Standard Precautions include:

- Hand hygiene (see 2.3.1.1);
- Respiratory hygiene (see 2.3.1.2);
- The use of personal protective equipment (PPE) (see 2.3.1.4);
- Precautions in the treatment of environmental surfaces (see 2.3.1.6);
- The prevention of sharps injuries (see 2.3.1.8);
- Precautions in the handling and transportation of dental instruments and equipment which may be contaminated (see 3.2.3, Step 1).

1.3 Dental Health Care Workers (DHCWs) Health Elements

- 1.3.1 Because DHCWs have contact with patients and infectious material deriving from patients, they are at risk of exposure to, and possibly of transmitting, vaccine-preventable diseases.

Employers and staff have a shared responsibility to prevent occupationally acquired infections and to avoid causing harm to patients by taking reasonable precautions to prevent transmission of vaccine-preventable diseases.

1.3.2 All dental practices must have written protocols which establish and help maintain a safe, healthy working environment for all staff. These protocols should include practice policies that must address the following separate and distinct elements:

- Immune status (see 1.3.2.1);
- The prevention of injuries that may expose those working in a dental environment to blood borne diseases. All dental practices must have a protocol for dealing with exposure prevention and post-exposure management. (see 1.3.2.2 and 2.3.1.8).

1.3.2.1 immune status

Any employer whose employees are in contact with, or are at risk of being exposed to, a biological agent as a result of their work, must complete a risk assessment to determine which, if any, vaccinations are recommended for workers.⁴ The outcomes of such risk assessments may impose further obligations on employers such as, for example, arranging for relevant vaccinations for workers.

It is recommended that staff know their immune status in relation to diseases they may be occupationally exposed to. Such diseases include:

- Hepatitis B;
- Tuberculosis(TB);
- Varicella (chickenpox);
- Influenza;
- Measles;
- Mumps;
- Rubella.

Occupational exposure to blood or body fluids presents the risk of acquiring Hepatitis B (HBV), Hepatitis C (HCV) or HIV. All staff who are at risk through contact with blood and/or body fluids should be immunised against HBV, unless immunity has been previously

established or vaccination is contraindicated.⁵ There is, at present, no vaccine to prevent HCV or HIV.

1.3.2.2 exposure prone procedures

Exposure prone procedures (EPPs) are those ‘which involve surgical entry into tissues, cavities or organs ... during which sharp instruments are used; the manipulation, cutting or removal of any oral or perioral tissues, including tooth structure, during which bleeding may occur. EPPs include situations where the worker’s hands (whether gloved or not) may be in contact with sharp instruments, needle tips or sharp tissues (spicules of bone or teeth) inside a patient’s open body cavity, wound or confined anatomical space where the hands or finger tips may not be completely visible at all times.’⁶

There is an increased risk of transmitting blood borne viruses between DHCWs and patients during EPPs.⁷

In dentistry the majority of procedures are exposure prone with the exception of:

- Examination of the mouth using a mouth mirror only;
- Taking extraoral radiographs;
- Visual and digital examination of the head and neck;
- Visual and digital examination of the edentulous mouth;
- Taking impressions in the edentulous mouth;
- Construction and fitting of complete dentures.

Taking impressions in dentate and partially dentate patients is considered exposure prone as is fitting partial dentures and fixed and removable orthodontic appliances where clasps or other pieces of metal could result in injury to the dental healthcare professional.

1.4 Infected DHCWs

- 1.4.1 It is the ethical responsibility of DHCWs who believe that they may have been infected with a blood borne virus to obtain medical advice, including any necessary testing, and, if found to be infected, to place themselves under specialist medical care. Their medical supervision will include counselling about changes in the healthcare worker’s practice which might be considered

appropriate in the best interest of protecting patients.

- 1.4.2 It is the duty of DHCWs who may be infected with blood borne viruses such as HBV, HCV or HIV to act upon the medical advice they have been given, which may include the necessity of modifying their practice or of ceasing the practice of dentistry altogether. They can continue a career in clinical practice, provided that the following criteria are met:
1. The individual is under ongoing care by a suitably qualified HIV healthcare professional.
 2. The individual remains aware of his/her health status and acts appropriately.
 3. Standard Infection Control is observed.⁸

The Dental Council will continue to review the scientific evidence related to blood-borne pathogens.

Standard Precautions

2.1 Concept, Application and Purpose of Standard Precautions

- 2.1.1 In 1996, the USA Centers for Disease Control and Prevention (CDC) expanded the concept of Universal Precautions for IPC and changed its name to 'Standard Precautions'. These precautions are based on the principle that all blood and body fluids, including secretions and excretions (except sweat), are potentially infectious. Standard Precautions also apply to mucous membranes and non-intact skin (e.g. a wound).
- 2.1.2 Standard Precautions must be applied by all healthcare staff at all times in healthcare settings, regardless of whether a patient's infectious status is confirmed, suspected or presumed. It has been accepted practice for many years that DHCWs should wear gowns, masks and protective glasses for all clinical procedures. Patients expect DHCWs to wear masks and gloves, at least, and that they themselves should be provided with protective eyewear when undergoing examination or treatment.
- 2.1.3 The main purpose of Standard Precautions is to provide a standard of care that protects patients and staff from transmission of infectious or potentially infectious microorganisms. In addition to Standard Precautions, other measures, such as Transmission Based Precautions (see Section 2.4), may be required to prevent transmission of particular infectious agents (e.g. *Mycobacterium tuberculosis*, influenza virus and *Varicella zoster*). All DHCWs should have a good general understanding of how infectious diseases can be transmitted and the precautions necessary to minimise the risks of transmission.

2.2 Standard Precautions Policy

All dental practices must have a formal, written infection prevention and control policy document which is site-specific and

which reflects European Union and national legislative requirements and practice guidelines. The policy should reflect the recommendations developed by Expert Groups and Competent Authorities (e.g. the Health Protection Surveillance Centre (HPSC) and the Health Service Executive (HSE)). It should address IPC education and training for all DHCWs. The written policies and procedures must include reporting, risk assessment and medical follow-up following occupational exposures (e.g. percutaneous or needlestick injuries).

2.3 Elements of Standard Precautions

2.3.1 The objective of Standard Precautions (and of Transmission Based Precautions (see 2.4)) is to break the Chain of Infection. The elements of Standard Precautions are:

- Hand hygiene;
- Respiratory hygiene and cough etiquette;
- Environmental cleaning;
- Personal protective equipment;
- Zoning and patient positioning;
- Surface barriers;
- Rubber dam;
- Prevention of sharps injury;
- Management of dental unit waterline biofilm;
- Cleaning and disinfection of suction systems;
- Cleaning and maintenance of portable equipment used in patient areas;
- Disinfection of dental impressions.

2.3.1.1 hand hygiene

Good hand hygiene, including the use of alcohol-based solutions and gels or medicated soap along with careful hand drying with disposable paper towels, is critical to reducing infectious disease transmission for all healthcare staff.

Alcohol hand gels (concentration 70% – 85%) should only be used

if hands are visibly clean. Soiled hands must be washed with medicated soap. Alcohol hand gels are not suitable for use after caring for a patient known or suspected to be infected with *Clostridium difficile* or with norovirus.

The following practices should be incorporated into hand hygiene routines:

- Long sleeves should be rolled up to the elbow;
- All arm and hand jewellery should be removed (WHO strongly discourages the wearing of rings and other jewellery during the delivery of healthcare as these can act as reservoirs and disseminators of infection);
- Nails should be worn short and artificial nails and nail polish of any type should not be worn in the clinical environment;
- Good quality hand-care moisturisers should be used regularly as they will help to reduce skin irritation and maintain the integrity of the skin.

The Health Protection Surveillance Centre (HPSC) recommends the WHO *Guidelines on Hand Hygiene in Health Care*.⁹ DHCWs must adhere to these guidelines.

2.3.1.2 respiratory hygiene

All DHCWs, patients and visitors, particularly those with signs and symptoms of a respiratory infection, should:

- Cover the mouth and nose when coughing and sneezing;
- Use disposable tissues to contain respiratory secretions;
- Dispose of tissues in a waste bin immediately after use;
- Perform hand hygiene.

2.3.1.3 environmental cleaning

Contaminated worktops must be disinfected between patients. The surgery (dental chair, dental unit, worktops and floors) must be thoroughly cleaned at least every day and more frequently if there is obvious contamination. All cleaning agents must be used in accordance with the manufacturer's instructions.

2.3.1.4 personal protective equipment (PPE)

The use of PPE must be guided by risk assessment. It must be used to protect DHCWs from exposure to or contact with infections or potentially infectious microorganisms.

Items of PPE include gloves, gowns, face masks, goggles and face shields. These must not be worn outside the area in which they are used. Hand hygiene must be carried out after removal and appropriate disposal of PPE.¹⁰ Most PPE items are regarded as single use (but refer to the manufacturer's instructions).

Interim Measure COVID-19 Pandemic (from 6 April 2020)

Aerosol-generating procedures should only be undertaken with an appropriate level of PPE, which includes a respirator mask to a minimum standard of FFP2.

2.3.1.5 zoning and patient positioning

The dental clinic must be divided into areas that are clearly defined as clean or contaminated areas. This process is called 'zoning'. It is possible to clearly designate zones that will become contaminated from droplets, aerosol and splatter generated during dental treatment. The contamination zone is approximately a one square metre area around the patient being treated. Zoning facilitates an efficient way to decontaminate the surgery between patients. Working surfaces must be disinfected routinely and areas likely to be contaminated (zoned areas) should be disinfected between patients.

2.3.1.6 surface barriers

Impervious barriers must be employed to protect equipment and areas that are difficult to decontaminate and are vulnerable to contamination during patient treatment. Caution should be exercised when removing these barriers to prevent contamination of the area or equipment protected.

2.3.1.7 rubber dam

Consideration should be given to the use of rubber dam during restorative procedures as its use, together with high powered

suction, can significantly reduce the release of splatter into the working environment.¹¹

2.3.1.8 prevention of sharps injury

Sharp instruments used in healthcare are a common cause of percutaneous injury that can result in infection. In order to address this important issue, the European Union published the EU Sharps Directive in 2010.¹² This has been transposed into Irish law in Statutory Instrument (S.I.) No. 135 of 2014.¹³ All healthcare facilities in Ireland are required by law to comply with S.I. No. 135 of 2014 in order to safeguard the health and well-being of DHCWs and patients.

Recapping of needles is permitted where the needles have safety and protection mechanisms and do not pose a risk of injury.¹⁴ The risk of injury and infection can be controlled by not recapping needles after use and disposing of them safely or using safety devices designed to avert the risk in recapping.¹⁵

The Health and Safety Authority (HSA) has produced a guidance document on implementation of the Sharps Directive.¹⁶

A specific requirement of the legislation is that steps be taken to ensure that there is an appropriate response in the event of a medical sharps injury occurring. The HPSC issued guidelines for the emergency management of injuries, including needlestick and sharps injuries, sexual exposure and human bites where there is a risk of transmission of blood borne viruses and other infectious diseases,¹⁷ which also contains further information on injuries in the dental practice.

2.3.1.9 management of dental unit waterline quality¹⁸

Dental Unit Waterlines (DUWLs) are prone to microbial contamination and the build-up of biofilm and must be regularly disinfected to minimise contamination. Output water from the dental unit can be heavily contaminated with microorganisms that can enter patients' mouths during dental instrumentation.

Currently there are no microbial quality standards imposed for dental unit output water within Ireland or the European Union (EU). However, the quality of dental unit output water should fall within the potable drinking water standard set by the EU,¹⁹ which is 100 cfu/ml of aerobic heterotrophic bacteria.

This water can be readily aerosolised by dental handpieces and ultrasonic scalers thereby exposing staff and patients to high densities of bacteria and bacterial endotoxins. The majority of contemporary dental units have closed-circuit waterlines based on a reservoir bottle system. Regular disinfecting with a chemical agent, either a residual or a continuously-used waterline disinfectant, is the most effective approach to minimising microbial contamination. The advice of dental unit manufacturers should be sought regarding the most appropriate way of cleaning and disinfecting waterlines and how often this should be done.

Practitioners should also be aware of the obligations laid upon them by Legionella guidelines.²⁰ DUWLs are a potential source of Legionellosis and Legionnaires' disease has been associated with DUWLs.²¹

2.3.1.10 suction system

Suction tubing and suction tip connectors become contaminated when used. Therefore any suction system should be cleaned and disinfected externally after use on each patient and all the components of a suction system should be cleaned and disinfected externally and internally, in accordance with manufacturer's instructions, at least once a day.

2.3.1.11 portable equipment introduced into the patient environment

All reusable medical equipment (e.g. pulp testers, electrosurgery units, apex locators) must be cleaned and maintained in accordance with the manufacturer's instructions to prevent patient-to-patient transmission of infectious microorganisms.

2.3.1.12 impressions

All dental impressions/stages of laboratory work, dentures and orthodontic appliances must be disinfected before being sent to the dental laboratory and packaging should be marked accordingly. All

materials should be disinfected in accordance with their manufacturer's instructions or laboratory protocols.

2.4 Transmission Based Precautions

2.4.1 In addition to Standard Precautions, Transmission Based Precautions may be necessary to prevent transmission of specific diseases. They are for 'at risk' patient groups: those groups which have been assessed and are known or suspected to be infected with or colonised by highly infectious microorganisms that need additional precautions. Transmission Based Precautions are also to be used when the eradication of infectious agents by sterilisation is not possible. They are always used in addition to Standard Precautions and will include the use of PPE appropriate to the risk. Transmission Based Precautions include the following precautions that deal with specific modes of transmission of infectious agents:

- Contact Precautions prevent transmission of infectious agents that are spread by direct or indirect contact (e.g. *Clostridium difficile*, MRSA, *Varicella zoster*, *Streptococcus pyogenes* and *Staphylococcus aureus*);
- Droplet Precautions prevent transmission of infectious agents that are spread through respiratory or mucus membrane contact or contact with respiratory droplets that are generated by sneezing, coughing or talking (e.g. influenza virus, *bordetella pertussis*);
- Airborne Precautions prevent transmission of infectious agents which remain infectious over long distances when suspended in the air (e.g. *Mycobacterium tuberculosis*, measles virus and *Varicella zoster* virus). This may involve immunised DHCWs using appropriate respiratory masks in negative pressure rooms.

2.4.2 It should be noted that patients who are acutely ill with these diseases rarely seek routine dental outpatient care. If a dental visit for such a patient is required but is not urgent, the practice should reschedule the appointment for a time at which the infection should have ceased. If the patient requires urgent treatment, the dentist must minimise the risk of exposing staff and other patients to infection.

Decontamination of Dental Instruments²²

3.1 Local Decontamination Unit (LDU)/Local Decontamination Area (LDA)

- 3.1.1 All current dental practices must have a suitable local decontamination area (LDA), while best practice requires that dental practices should have a separate local decontamination unit (LDU).
- 3.1.2 The LDA must allow for the separation of clean and dirty instruments, must be clearly zoned and must be as far as possible from the patient.
- 3.1.3 All new dental premises opened after the 1 January 2016 (whether in new or pre-existing buildings) must have a separate decontamination room (LDU) and must at least be fitted out to provide for a washer-disinfector; also a separate decontamination room (LDU) must be included in the plans for the extension of any existing dental premises into a larger area.
- 3.1.4 Furthermore, all existing practices should, where possible, have a plan to progress towards the establishment of an LDU.

3.2 Instrument Decontamination

- 3.2.1 All dental instruments must be correctly decontaminated, which means:
 - Reusable, invasive medical devices, including handpieces, must be sterilised after every use;
 - Other equipment (such as apex locators, vitality testers etc) or equipment not suitable for sterilisation should be cleaned and disinfected in accordance with manufacturer's instructions;
 - Any instrument defined as 'for single use' should be used in accordance with manufacturer's instructions and then be safely disposed of;
 - Any instrument or equipment needing repair must be completely decontaminated before dispatch.
- 3.2.2 All newly purchased dental instruments must be accompanied by

manufacturer's instructions giving details of decontamination procedures for the equipment.

3.2.3 The process of decontamination

Instrument decontamination involves the following steps:

STEP 1: Transportation of Instruments

Handling of contaminated instruments must be kept to a minimum. Instruments should be transported in a secure container if being carried out of the dental surgery. There must be no contact between contaminated and cleaned or sterilised instruments.

STEP 2: Cleaning and Disinfection of Instruments

Cleaning instruments effectively is an essential step before sterilisation and reduces the risk of transmission of pathogens. At present, three methods of cleaning reusable dental instruments are available:

- Using a washer-disinfector;
- Ultrasonic cleaning;
- Manual cleaning.

An automated washer-disinfector should be used to clean dental instruments. It is the **preferred** method of cleaning instruments, although ultrasonic cleaning can also be used, and, as a last resort, manual cleaning maybe employed (see 3.2.4).

STEP 3: Inspection and Packaging

Instruments should be inspected after cleaning and disinfection, using magnification and adequate illumination to ensure that they are free of visible contamination and are dry. Instruments should be packed before sterilisation and the date and autoclave cycle number assigned. This data should form part of the autoclave performance record (see 3.2.5.3 for using a N cycle for sterilisation).

STEP 4: Sterilisation

Sterilisation processes must be effective against all known viable pathogens. The method of choice for most instruments is sterilisation by steam, using an autoclave. There are different types of autoclave, each involving different considerations (see 3.2.5),

but all requiring the application of consistent standards of commissioning, performance testing, maintenance and validation (see 3.2.6).

The highest temperature compatible with the equipment to be sterilised within a recognised sterilisation cycle should be used. All instruments and packs must be dry when removed from the autoclave. High quality water (e.g. deionised, distilled, reverse osmosis), as advised by the manufacturer, must be used in autoclaves.²³

STEP 5: Storage

Wrapped instruments must be stored in a clean and dry location such as a drawer or in an enclosed area. If the local decontamination area (LDA) is in the surgery then processed instruments should be stored at a distance from that area. If the practice has a local decontamination unit (LDU) which is separate from and independent of the surgery then the instruments may be stored in the clean area of that room. If there are separate clean and dirty rooms then storage must take place in the clean room.

Stored instruments should have the dates of sterilisation on them to facilitate traceability and instrument turnover and they must be inspected regularly to ensure that they are in good condition. It is recommended that the cycle number and date are recorded on the pouch to enable a tracing system to be used. Under clean and dry conditions storage up to a year is permissible if the packaging is in good condition and has not been compromised.

Unwrapped instruments must be used on the day of sterilisation. Storage of unwrapped instruments is not allowed.

3.2.4 Methods of cleaning

3.2.4.1 washer disinfecter

Whenever possible, an automated washer-disinfecter should be used to clean dental instruments as it is the most effective method of cleaning instruments and the safest, as it includes a disinfection process that makes instruments safe to handle and inspect.²⁴ Furthermore, as an automated process it facilitates a standard of cleaning that can be replicated and supports validation of the

decontamination process.

Washer-disinfectors must be commissioned and periodically validated by a Competent Person. 'Validation' is the process by which a washer-disinfecter is tested and verified. Each act of validation by a Competent Person should be recorded so that evidence of consistent performance can be provided. The washer-disinfecter must be validated annually or at the intervals recommended by the manufacturer.

3.2.4.2 ultrasonic baths

Although washer-disinfectors should be preferred (and should be included in new plans or practice upgrades) an ultrasonic cleaner may be used to clean instruments. However, it is important that it is adequately maintained and serviced and that it can be shown to be operating with consistent effectiveness. The use of an ultrasonic cleaner is advisable before manual cleaning of instruments and its use must comply with manufacturer's instructions. Validation must be carried out at least once a year.

3.2.4.3 manual cleaning

Manual cleaning is the least acceptable of the three methods of cleaning instruments, but may be used as a backup when other methods are not available or are not appropriate. However, it must be kept in mind that it is difficult to validate and it exposes staff to an increased risk of sharps injury. If manual cleaning of instruments is practised, staff must be made aware of the risks and a detailed written protocol must be followed. This protocol must prescribe:

- The use of heavy rubber gloves and other appropriate PPE;
- That the detergent used should be specifically formulated for washing instruments and the manufacturer's instructions, including water temperature and dilution, should be followed;
- That a designated sink should be used and that a sink provided for clinical staff to wash their hands should not be used for washing instruments.

3.2.5 Types of autoclave

3.2.5.1 B class autoclaves

Vacuum or B cycle autoclaves are capable of sterilising all loads

including bagged instruments, hinged instruments, lumens (e.g. dental handpieces) and porous loads.

3.2.5.2 S class autoclaves

Autoclaves with S cycle as defined in the European Standard for Small Steam Sterilisers (EN 13060)²⁵ must only be used in accordance with manufacturer's specifications.

3.2.5.3 N class autoclaves

Non-vacuum autoclaves (type N cycle), where air is removed by displacement by steam entering the chamber, must not be used for wrapped instruments. They should only be used for sterilising unwrapped, solid instruments for immediate use. These instruments must not be subsequently wrapped or stored. These autoclaves are not suitable for lumens or porous loads.

3.2.6 Performance, validation and maintenance of autoclaves

3.2.6.1 commissioning an autoclave

All autoclaves must be maintained and serviced in accordance with manufacturer's instructions so that they achieve optimal conditions for sterilisation. When an autoclave is purchased it must be commissioned by a Competent Person and commissioning documents must be given by the supplier to the purchaser and the purchaser must retain these documents.

3.2.6.2 validating, maintaining and testing an autoclave

Once an autoclave has been commissioned by a Competent Person the following tasks must also be carried out:

- Annual validation by a Competent Person;
- Regular performance monitoring by the user (including daily and weekly tests);
- Periodic maintenance in accordance with manufacturer's instructions, including safety checks (records to be kept of such periodic maintenance);
- Regular pressure vessel checks (it is a legal requirement that non-category 1 pressure vessels must be tested every 14 months).²⁶

Examples of the types of tests to be performed are the following:

1. Daily tests include steam penetration tests such as Helix or the Bowie-Dick.
2. Weekly tests include safety checks on the door seal and door safety devices; vacuum leak tests; automatic control tests (not required if recorder) and Bowie-Dick or Helix test for steam penetration.
3. Annual tests include validation carried out by a Competent Person.

3.2.6.3 records

All records of autoclave cycles, maintenance, periodic testing and validation must be kept for eight years.

Healthcare Risk Waste and Non-Risk Waste Management²⁷

4.1 Types of Healthcare Waste

- 4.1.1 For the purposes of infection prevention and control, waste from dental practices can be divided into two categories: clinical or healthcare risk waste and general office or non-risk waste.
- 4.1.2 Irish legislation²⁸ dictates that waste such as clinical waste must be handled and disposed of in a manner that avoids transmission of potential infections. Therefore, it is necessary to understand the differences between the types of waste encountered so that they can be separated, stored and disposed of in an appropriate manner.
- 4.1.3 Healthcare risk waste includes blood, body tissue and items soiled with blood and body fluid, and contaminated sharps. Clinical waste is classified as hazardous waste and must not be disposed of with general or non-risk waste. It must be handled and disposed of safely in order to protect human health and the environment.²⁹
- 4.1.4 Hands-free bins with plastic bin liners are recommended for in-surgery use. Clinical waste must then be placed in clinical, United Nations (UN) approved, yellow waste sacks with ties, for collection. Dedicated wheelie bins are available for storage of the yellow waste bags until collection.
- 4.1.5 Healthcare risk waste is categorised as waste contaminated with body fluids, items soiled with blood and saliva, and other infectious waste. Items listed as clinical waste include:
- Patients cups;
 - Cotton wool rolls;
 - Gloves;
 - Patient bibs;
 - Tray paper;
 - Plastic saliva ejectors;

- Masks;
- Used rubber dam;
- Tissues used in treatment;
- Contaminated sharps.

4.1.5.1 sharps

Sharps are any objects used in the diagnosis, treatment or prevention of disease that might cause a puncture wound or cut to the skin including:

- Needles/disposable syringes;
- Used glass local anaesthetic cartridges;
- Used matrix bands;
- Scalpel blades;
- Suture needles;
- Burs;
- Endodontic instruments;
- Saliva ejectors with metal.

4.1.5.2 disposal of sharps

Sharps must be separated and placed in yellow puncture-resistant, leak-proof containers that are specifically designed for their management and labelled with the universal symbol. Once a container has reached its designated capacity it must be sealed, tagged and stored securely before released to a licensed biomedical waste-carrier for disposal. Records of collection must be retained for inspection.

4.2 Amalgam

- 4.2.1 The EU Directive on Waste³⁰ stipulates that all amalgam waste produced in dental practices must be disposed of without endangering human health and the environment. Amalgam waste is classified as hazardous and must be collected and any mercury recovered.
- 4.2.2 There is a legal obligation on the holder of hazardous waste³¹ to make sure that the waste is handled in a manner that is environmentally safe. Dentists must therefore take all steps

necessary to avoid contamination of the environment with waste dental amalgam. To achieve this, dentists must install, use and service amalgam separation units.

- 4.2.3 Dentists must handle amalgam waste in accordance with the best management practices laid down by the WHO,³² and must have amalgam waste collected and treated by companies licensed to handle this type of waste.
- 4.2.4 Amalgam capsules, waste amalgam, amalgam sludge and used amalgam filters from separation units must be stored in special UN-approved, labelled containers with vapour suppressant. The lids of such containers must be kept securely sealed.
- 4.2.5 Extracted teeth should be disposed of in an approved container or, if requested, may be returned to the patient without any special consideration for infection prevention and control other than simple cleaning of visible blood and gross debris.
- 4.2.6 But extracted teeth with amalgam fillings must be treated as mercury-containing waste and be disposed of accordingly.

4.3 General Office Waste

General office waste is similar to residential waste. Many items generated in dental practices do not require any special disposal methods other than careful containment and removal by companies with the licensed authorisation to handle this waste. Removal must be in keeping with local by-laws.

4.4 Additional Clinical Waste Management

- 4.4.1 A practice waste plan, including staff training, must be established in each practice to ensure correct segregation, handling and disposal of waste.
- 4.4.2 It is the dentist's responsibility to ensure that the company used to remove hazardous waste from the dental practice (including any contractor who pays registrants for waste amalgam and waste metal) is properly registered to dispose of this waste.
- 4.4.3 All consignment documentation must be kept for inspection by relevant authorities for a period of eight years.

Training and Education

- 5.1** All dental staff involved in patient care must receive appropriate and ongoing training in infection prevention and control. Details of this training must be kept on record.
- 5.2** All staff must be familiar with the practice Safety Statement and policies related to it, and with other relevant aspects of health and safety.
- 5.3** Induction training should be given to all new staff and a record should be kept of all such training.
- 5.4** All practices should have standard operating procedures covering the areas of patient and staff safety. These should include decontamination processes, surgery cleaning, accidental spillage procedures, waste disposal and injury and accidental exposure to body fluids or tissues especially inoculation injuries.
- 5.5** Training records should be kept for all dental staff members for a period of eight years after ceasing employment.
- 5.6** A procedure must be in place for adverse-event reporting³³ to the relevant authorities and any follow up must be recorded.

6

Risk Assessment/ Audit and Standards

- 6.1** It is recommended that a risk assessment be carried out in all the areas covered by this Code of Practice at least once a year, or after a significant change in the practice.
- 6.2** The following practice protocols should be audited annually:
- Decontamination of dental instruments;
 - Healthcare risk waste management;
 - Hand hygiene;
 - Staff training in infection prevention and control.
- 6.3** All audit records must be maintained for eight years and be available for inspection.

Governance

- 7.1** The practice principal or manager must nominate a Decontamination Lead to ensure that:
- All staff involved in infection prevention and control are suitably trained;
 - The infection prevention and control system is established and monitored;
 - All roles and responsibilities are clearly defined.

This responsibility may be delegated to a staff member who has the experience and authority to perform this task and who is accountable to the practice principal.

- 7.2** All practices must establish and maintain the following documentation:
- Safety Statement;
 - IPC policy document.
- 7.3** All practices must maintain the following documents for eight years:
- Validation and service reports for decontamination equipment;
 - Log book for each autoclave, recording daily and weekly tests and, preferably, the cycle number and date of sterilisation of each load (see 3.2.6.2 and 3.2.6.3);
 - Waste transfer forms;
 - Staff training log;
 - Audit reports;
 - Pressure vessel tests (in compliance with S.I. 445 of 2012).³⁴
- 7.4** Practice management must also be aware of the National Standards for the Prevention and Control of Healthcare Associated Infections³⁵ and the National Standards for Safer Better Healthcare³⁶ and other relevant publications of the Health Information and Quality Authority (HIQA) (<http://www.hiqa.ie>)

Glossary

Commissioning: This is the process of obtaining and recording evidence of the following: that equipment has been supplied and installed in accordance with the specifications of the manufacturer; that it is safe to operate; and that it functions properly within the limits predetermined by the manufacturer's instructions.

Competent Person (Decontamination): This person is responsible for the validation of decontamination equipment and should have a qualification in this area such as a Test Person Certificate or other appropriate qualification.

Competent Person (Pressure Vessel): This person should carry out checks on pressure vessels such as autoclaves in accordance with the legal obligation imposed by S.I. 445 of 2012 and should be a suitably qualified engineer nominated by your insurance company.

Decontamination Lead: This person is the member of staff given responsibility for infection prevention and control, including decontamination and staff training. This person must have appropriate training and authority and will report to the principal dentist /manager.

Operator/User: This is the person authorised to use decontamination equipment. This person must be suitably trained in the use of this equipment and also be able to carry out the daily and weekly tests required.

Periodic Testing: This is a programme of testing that shows that the performance of a steriliser is consistently acceptable. The tests should be carried out once a day, once a week or once a year as is appropriate in each case.

Principal Dentist/Manager: This is the person with ultimate responsibility in the dental practice for the purchase, proper use, maintenance and testing of decontamination equipment. This person may be the practice owner, practice manager or dental surgeon. The principal dentist/manager may delegate some of these roles in accordance with the practice IPC policy.

Service Engineer: This person will carry out repairs and maintenance of decontamination equipment and be certified by the equipment supplier to

carry out this work. If suitably trained, he/she may carry out validation of equipment.

Validation: This is the process for obtaining, recording and interpreting the results needed to show that a process will consistently yield a product complying with predetermined specifications.

References

1. H. Lemass, N. McDonnell, N. O'Connor and S. Rochford, *Infection Prevention and Control for Primary Care in Ireland – a Guide for General Practice*, SARI 2013.
2. *Guidelines for Hand Hygiene in Irish Healthcare Settings*, SARI, 2005. (www.hpsc.ie/A-Z/MicrobiologyAntimicrobialResistance/InfectionControlandHAI?Guidelines/File,1047,en.pdf)
3. 'Health Service Executive Standards and Recommended Practices for Dental Services in a Local Decontamination Unit (LDU)', HSE, 2012 (rev. edn 2014). (www.hse.ie/eng/about/Who/qualityandpatientsafety/resourcesintelligence/Quality_and_Patient_Safety_Documents/StandardsDentalLDU.html)
4. S.I. No. 146 of 1994, Safety, Health and Welfare at Work (Biological Agents) (Amendment) Regulations, 1998. (<http://www.irishstatutebook.ie/1998/en/si/O248.html>)
5. *Infection Prevention and Control for Primary Care in Ireland – a Guide for General Practice*, SARI.
6. *The Prevention of Transmission of Blood-Borne Diseases in the Health-Care Setting*, DHC, 2005. (www.hpsc.ie/A-Z/Hepatitis/BloodborneViruses/File,4352,en.pdf)
7. *Prevention of Transmission of Blood-Borne Diseases*, DHC.
8. The 6th World Workshop on Oral Health & Disease in AIDS. (www.hivdent.org/_international_/2009/BEIJING_DECLARATION_2009.htm)
9. *Hand Hygiene in Outpatient and Home-based Care and Long-term Care Facilities: A Guide to the Application of the WHO Multimodal Hand Hygiene Improvement Strategy and the "My Five Moments for Hand Hygiene"*, WHO, 2012. (http://apps.who.int/iris/bitstream/10665/78060/1/9789241503372_eng.pdf?ua=1)

10. *Infection Prevention and Control for Primary Care in Ireland – a Guide for General Practice*, SARI.
11. M.A. Cochran, C.H. Miller and M.A. Sheldrake, 'The efficacy of the rubber dam as a barrier to the spread of microorganisms during dental treatment', *JADA*, 1989 Jul, 119(1), 141–144.
12. European Council Directive 2010/32/EU (10 May 2010) on implementing the Framework Agreement on prevention from sharp injuries in the hospital and healthcare sector concluded by HOSPEEM and EPSU.
(<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:134:0066:0072:EN:PDF>)
13. S.I. No. 135 of 2014, European Union (Prevention of Sharps Injuries in the Healthcare Sector) Regulations 2014.
(www.hsa.ie/eng/Legislation/New_Legislation/S_I_135_of_2014.pdf)
14. S.I. No. 135 of 2014, European Union (Prevention of Sharps Injuries in the Healthcare Sector) Regulations, 2014, Part 2.
(http://www.hsa.ie/eng/Legislation/New_Legislation/S_I_135_of_2014.pdf)
15. *Guide to the European Union (Prevention of Sharps Injuries in the Healthcare Sector) Regulations*, 2014, HSA, 2014.
(http://www.hsa.ie/eng/Publications_and_Forms/Publications/Healthcare_Sector/Sharps_Regulations_Guidelines_2014.pdf)
16. *Guide to the European Union (Prevention of Sharps Injuries in the Healthcare Sector) Regulations*, 2014.
17. 'Guidelines for the Emergency Management of Injuries (including needlestick and sharps injuries, sexual exposure and human bites) where there is a risk of transmission of bloodborne viruses and other infectious diseases', HPSC, 2012.
(<http://www.hpsc.ie/A-Z/EMIToolkit/EMIToolkit.pdf>)
18. M.J. O'Donnell, M.A. Boyle, R.J. Russell and D.C. Coleman, 'Management of dental unit waterline biofilms in the 21st century', *Future Microbiology*, 6(10), 1209–1226.

19. Council Directive 98/83/EC (3 November 98) on the quality of water intended for human consumption, L330/32–L330/41.
(<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:1998:330:0032:0054:EN:PDF>)
20. *National Guidelines for the Control of Legionellosis in Ireland, 2009: Report of Legionnaires' Disease Subcommittee of the Scientific Advisory Committee*, HPSC, 2009.
(www.hpsc.ie/A-Z/Respiratory/Legionellosis/Publications/File,3936,en.pdf)
21. M.L. Ricci, S. Fontana, F. Pinci, E. Fiumana, M.F. Pedna et al., 'Pneumonia associated with a dental unit waterline', *Lancet* 379 No. 9816, 2012, 684.
22. Health Services Executive Standards and Recommended Practices for Dental Services, HSE.
23. 'Sterilisation of Dental Instruments: Dental Clinical Guidance', SDCEP, 2011, p.12.
(www.sdcep.org.uk/?o=3141/)
24. 'Washer-disinfectors – the best method for cleaning and disinfection.', AESIC.EU February 2010.
(www.aesic.eu/uploads/ftp_pdfs/Washerdisinfectors%20text.pdf)
and 'HTM 01-05 2013 Decontamination in primary care dental practices', Department of Health, UK.
(https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/170689/HTM_01-05_2013.pdf)
25. European Standard for Small Steam Sterilisers
EN 13060, 2004, p. 4.
26. S.I. No. 445 of 2012, Safety, Health and Welfare at Work (General Application) (Amendment) Regulations, 2012.
(<http://www.irishstatutebook.ie/pdf/2012/en.si.2012.0445.pdf>)
27. '*Healthcare Risk Waste Management, Segregation, Packaging and Storage Guidelines for Healthcare Risk Waste*', 4th edn, HSE/DHC, 2010.
(http://lenus.ie/hse/bitstream/10147/120929/1/healthcare_waste_packaging2010.pdf)

28. Waste Management Act, 1996.
(<http://www.irishstatutebook.ie/1996/en/act/pub/0010/>);
Waste Management (Amendment) Act, 2001.
(<http://www.irishstatutebook.ie/2001/en/act/pub/0036/>);
European Directive on Waste 2008/98/EC.
(<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32008L0098>);
S.I. No. 126 of 2011, European Communities (Waste Directive) Regulations, 2011, (Section 32).
(<http://www.irishstatutebook.ie/2011/en/si/0126.html>);
S.I. No. 238 of 2013, European Communities (Carriage of Dangerous Goods by Road and Use of Transportable Pressure Equipment) (Amendment) Regulations, 2013.
(<http://www.irishstatutebook.ie/2013/en/si/0238.html>)
29. *Healthcare Risk Waste Management*, HSE/DHC.
30. European Directive on Waste 2008.
31. S.I. No. 126 of 2011.
32. P.E. Petersen, R. Baez, S. Kwan and H. Ogawa, 'Future Use of Materials for Dental Restoration', World Health Organization, 2010, p.14.
(http://www.amalgamskadefonden.se/files/documents/Dental_for_web_Petersen_Baez_Kwan_Ogawa_NOT_endorsed_by_WHO.pdf)
33. 'Code of Practice relating to: Professional Behaviour and Ethical Conduct: Promoting transparency and enhancing public confidence in the dental profession', Dental Council, 2012, Section 8.
(<http://www.dentalcouncil.ie/files/Professional%20Behaviour%20and%20Ethical%20Conduct%20-%20final%20-%20%2020120116.pdf>)
34. S.I. No. 445 of 2012.
35. 'National Standards for the Prevention and Control of Healthcare Associated Infections', HIQA, 2009.
(www.hiqa.ie/System/files/National_Standards_Prevention_Control_Infections.pdf)

36. 'National Standards for Safer, Better Healthcare', HIQA, 2012.
(www.hiqa.ie/System/files/Safer-Better-Healthcare-Standards.pdf)

Bibliography

2009 Beijing Declaration, The 6th World Workshop on Oral Health and Disease in Aids.

Cochran, M.A., Miller, C.H. and Sheldrake, M.A., 'The efficacy of the rubber dam as a barrier to the spread of microorganisms during dental treatment', JADA, 1989 Jul, 119(1), 141–144.

Code of Practice relating to: Professional Behaviour and Ethical Conduct: Promoting transparency and enhancing public confidence in the dental profession, Dental Council, 2012.

Council Directive 98/83/EC (3 November 98) on the quality of water intended for human consumption, L330/32–L330/41.

Decontamination in primary care dental practices, HTM 01-05 2013, Department of Health, UK.

European Communities (Carriage of Dangerous Goods by Road and Use of Transportable Pressure Equipment) (Amendment) Regulations, 2013, S.I. No. 238 of 2013.

European Communities (Waste Directive) Regulations' 2011, S.I. No. 126 of 2011.

European Directive on Waste 2008/98/EC.

European Council Directive 2010/32/EU.

European Standard for Small Steam Sterilisers EN 13060, 2004.

European Union (Prevention of Sharps Injuries in the Healthcare Sector) Regulations 2014, S.I. No. 135 of 2014.

Guidelines for Hand Hygiene in Irish Healthcare Settings, SARI Infection, Prevention and Control Subcommittee, 2005.

Guidelines for the Emergency Management of Injuries (including needlestick and sharps injuries, sexual exposure and human bites) where there is a risk of transmission of bloodborne viruses and other infectious diseases, Health Protection Surveillance Centre, 2012.

Guide to the European Union (Prevention of Sharps Injuries in the Healthcare Sector) Regulations, 2014, Health and Safety Authority, 2014.

Hand Hygiene in Outpatient and Home-based Care and Long-term Care Facilities: A Guide to the Application of the WHO Multimodal Hand Hygiene Improvement Strategy and the “My Five Moments for Hand Hygiene”, World Health Organization, 2012.

Healthcare Risk Waste Management, Segregation, Packaging and Storage Guidelines for Healthcare Risk Waste, 4th edn, Health and Safety Executive/Department of Health and Children, 2010.

Health Service Executive Standards and Recommended Practices for Dental Services in a Local Decontamination Unit (LDU), Health and Safety Executive, 2012 (rev. edn 2014).

Lemass, H., McDonnell, N., O’Connor, N. and Rochford, S., *Infection Prevention and Control for Primary Care in Ireland – a Guide for General Practice*, SARI Infection Prevention and Control Subcommittee, 2013.

National Guidelines for the Control of Legionellosis in Ireland, 2009: Report of Legionnaires’ Disease Subcommittee of the Scientific Advisory Committee, Health Protection Surveillance Centre, 2009.

National Standards for the Prevention and Control of Healthcare Associated Infections, Health Information and Quality Authority, 2009.

National Standards for Safer, Better Healthcare, Health Information and Quality Authority, 2012.

O’Donnell, M.J., Boyle, M.A., Russell, R.J. and Coleman, D.C., ‘Management of dental unit waterline biofilms in the 21st century’, *Future Microbiology*, 6(10), 1209–1226.

Petersen, P.E., Baez, R., Kwan, S. and Ogawa, H., *Future Use of Materials for Dental Restoration*, World Health Organization, 2010.

Ricci, M.L., Fontana, S., Pinci, F., Fiumana, E., Pedna, M.F. et al., ‘Pneumonia associated with a dental unit waterline’, *Lancet* 379 No. 9816, 2012, 684.

Safety, Health and Welfare at Work (Biological Agents) (Amendment) Regulations, 1998, S.I. No. 248 of 1998.

Safety, Health and Welfare at Work (General Application) (Amendment) Regulations, 2012, S.I. No. 445 of 2012.

Sterilisation of Dental Instruments: Dental Clinical Guidance, Scottish Dental Clinical Effectiveness Programme, 2011.

The Prevention of Transmission of Blood-Borne Diseases in the Health-Care Setting, Department of Health and Children, 2005.

Washer-disinfectors – the best method for cleaning and disinfection., Association for European Safety & Infection Control in Dentistry, 2010.

Waste Management Act, 1996.

Waste Management (Amendment) Act, 2001.



Dental Council

An Comhairle Fiaclóireachta

57 Merrion Square, Dublin 2, Dublin, Ireland.

T: (00353) 1 676 2226. **F:** (00353) 1 676 2076.

E: info@dentalcouncil.ie

www.dentalcouncil.ie

