



HSE National Guideline for Infection Prevention and Control in HSE Dental and Orthodontic Services

Is this document a:

Policy Procedure Protocol Guideline

Insert Service Name(s), Directorate and applicable Location(s):
All staff within the HSE Dental and Orthodontic Services

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Table of Contents:

PART A: OUTLINE OF PPPG STEPS	4
1. Purpose, Outcome and Scope.....	4
2. Standard Precautions	6
3. Transmission Based Precautions	7
4. Standard Operating Procedures	9
1) Hand Hygiene.....	10
2) Respiratory Hygiene and Cough Etiquette	15
3) Personal Responsibilities of staff	16
4) Immunisation/Vaccinations	18
5) Personal Protective Equipment.....	20
6) Management of Sharps/Prevention of Sharps Injuries	24
7) Management of Occupational blood and body fluids exposures.....	28
8) Routine Management of the Physical Environment (Including domiciliary and school settings).....	29
9) Appropriate Use of Single-Use Items	41
10) Decontamination of Reusable Invasive Medical Devices	42
11) Disinfection of Patient Care Equipment and domiciliary care	57
12) Care of Dental Suction Systems	61
13) Care of Dental Waterlines and Water Quality.....	63
14) Waste Management.....	71
15) Service Animals	75
16) Dental Antimicrobial stewardship and Infectious disease and multidrug resistance organisms (MDRO)	76

TABLES:

Table 1: Examples of Standard Precautions.....	6
Table 2: Examples of when transmission based precautions are required.....	8
Table 3: Standard Operating Procedures.....	9
Table 4: World Health Organisation - 5 Moments for Hand Hygiene.....	11
Table 5: Examples of viruses and bacteria.....	18
Table 6: Processes for managing spills.....	38
Table 7: Types of Aseptic Technique.....	39
Table 8: Procedure for testing ultrasonic cleaner.....	45
Table 9: Dental handpiece cleaning and disinfection.....	46
Table 10: Procedure for testing washer disinfectant.....	49
Table 11: Procedure for testing autoclave.....	52
Table 12: Areas of potential contamination on x-ray equipment.....	57
Table 13: Legionella risk assessment - Summary Table.....	65
Table 14: Aerobic heterotrophic bacterial counts.....	66
Table 15: Legionella bacteria results.....	67
Table 16: Procedure for DUWL bottle hygiene.....	67

PART B: PPPG DEVELOPMENT CYCLE	80
1.0 INITATION	80
1.1 Purpose.....	80
1.2 Scope.....	80
1.3 Objective(s).....	80
1.4 Outcome(s)	80
1.5 PPPG Development Group	81
1.6 PPPG Governance Group.....	81
1.7 Supporting Evidence	81
1.8 Glossary of Terms.....	83
2.0 DEVELOPMENT OF PPPG	85
2.1 Clinical questions	85
2.2 Literature search strategy.....	85
2.3 Method of appraising evidence.....	85
2.4 Process the PPPG Development Group used to formulate recommendations	85
2.5 Summary of the evidence from the literature	85
2.6 Resources necessary to implement the PPPG recommendations	85
2.7 Outline of PPPG steps/recommendations	86
3.0 GOVERNANCE AND APPROVAL	86
4.0 COMMUNICATION AND DISSEMINATION	88
4.1 Communication and dissemination plan	88
5.0 IMPLEMENTATION	88
5.1 Implementation plan listing barriers and/or facilitators	88
5.2 Education/training required for implementing the PPPG.....	88
5.3 Lead person(s) responsible for the Implementation of the PPPG	89
5.4 Specific roles and responsibilities	89
6.0 MONITORING, AUDIT AND EVALUATION.....	91
6.1 Lead person(s) responsible for the following processes:	91
6.1.1 Monitoring.....	91
6.1.2 Audit	91
6.1.3 Evaluation.....	91
7.0 REVISION/UPDATE.....	92
7.1 Procedure for the update of the PPPG	92
7.2 Method for amending the PPPG if new evidence emerges.....	92
8.0 REFERENCES.....	93
9.0 APPENDICES	96
10.0 ACKNOWLEDGEMENTS	96

PART A:

1. Purpose and Outcome

Title of Guideline:

HSE National Guideline for Infection Prevention and Control in HSE Dental and Orthodontic Services.

Purpose and Outcome

The purpose of an Infection Prevention and Control (IPC) guideline in the dental setting is to help ensure that *'Care is provided in a clean and safe environment that minimises the risk of transmitting a healthcare-associated infection'* (HIQA (2018) Theme 2 Infection Prevention and control in the community).

Implementing appropriate infection prevention and control procedures is vital for patient and staff safety and is the responsibility of every member of the dental team. Understanding how infections are transmitted and how and when to apply the basic principles of IPC is essential for successful infection prevention and control. Dental and Orthodontic Staff compliance with these IPC standards is mandatory, an ethical obligation, and is fundamental to quality care and excellence in dentistry. IPC is integral to all clinical care and the manner in which it is provided.

The outcome of implementing this policy will be that a consistent approach will be applied across all HSE dental settings to ensure safe and supportive practice, to prevent the spread of infection and a reassurance to service users that interventions will be employed as appropriate to reduce any risk of harm to service users in receipt of dental care/treatment.

Patient Centred Approach

Patient-centred healthcare is respectful of, and responsive to, the preferences, needs and values of patients and the best possible outcomes are more likely where patient centred health care is a priority of the healthcare facility and a strong and consistent effort is made to respect patients' rights and expectations.

To support a two-way approach to infection prevention and control and encourage the patient participation required to minimise cross- infection or transmission, it is important to:

- Take patients' perspectives into account when developing policies and programs
- Familiarise patients with the infection prevention and control strategies that are employed in healthcare facilities to protect them, the people caring for them and the health care environment
- Discuss with patients the specific risks associated with their medical and/or surgical treatment
- Encourage patients to disclose their health or risk status if there is a potential risk or source of infection to healthcare workers or others within the healthcare facility
- Provide opportunities for patients to identify and communicate risks and encourage them to use feedback procedures for any concerns that they have about infection prevention and control procedures
- Provide educational materials about infection prevention and control.

Scope: This document gives national guidance to all HSE dental and orthodontic staff on Infection Prevention and Control procedures in the community dental, orthodontic clinics, domiciliary and school settings.

Out of Scope: This document does not include guidance on Dental Inpatient acute hospital services.

Target users; This document is applicable to all HSE Dental Staff members, Dentists, Specialist Dentists, Consultant and Specialist Orthodontists, Orthodontic Therapists, Oral Surgeons, Hygienists and Dental Nurses (including agency, locum and temporary staff or session staff). It is intended as a reference document to provide guidance and direction to all dental and orthodontic staff on Infection Prevention and Control procedures which is then supported by local protocols.

Population to whom it applies; The service users (and those accompanying them) attending HSE Dental and Orthodontic Services.

2. Standard precautions

All people potentially harbour infectious microorganisms. Standard precautions refer to those work practices designed to break the chain of infection. They are the minimum set of infection prevention control practices to be followed for all patients in all Healthcare Facilities at all times. Furthermore, all patients must be regarded as potentially infectious in any setting where health care is delivered. Implementing standard precautions as a first line approach to IPC in the healthcare environment minimises the risk of transmission of microorganisms from person to person, even in potentially high risk situations.

They are used to prevent or reduce the likelihood of transmission of microorganisms from one person or place to another, and render and maintain objects and areas as free from infectious microorganisms as possible. Standard precautions apply in every situation where healthcare is delivered.

Successful infection prevention and control involves implementing work practices that reduce the risk of the transmission of microorganisms through a two-tiered approach:

- I. Routinely applying **standard precautions** strategies to minimise risk to patient and healthcare staff such as hand hygiene, appropriate personal protective equipment, cleaning and safe handling and disposal of sharps (standard precautions).
- II. Effectively managing microorganisms where standard precautions may not be sufficient on their own, these specific interventions control infection by interrupting the mode of transmission (**transmission based precautions** formerly referred to as additional precautions). These are additional measures in addition to standard precautions.

<u>How standard precautions are implemented:</u>
Personal hygiene practices, particularly hand hygiene , aim to reduce the risk of contact transmission of infectious agents (SOP 1).
Practising respiratory hygiene and cough etiquette reduces risk of transmission of infection (SOP 2).
Appropriate use of personal protective equipment , which may include gloves, gowns, plastic aprons, masks/face-shields and eye protection, aims to prevent exposure of the healthcare worker and patients to infectious agents (SOP 5).
Safe handling and disposal of sharps assists in preventing transmission of blood-borne diseases to healthcare workers (SOP 6).
Environmental controls , including cleaning and spills management, assist in preventing transmission of infectious agents from the environment to patients (SOP 8).
Aseptic technique aims to prevent microorganisms on hands, surfaces or equipment from being introduced into a susceptible site (SOP 8).
Appropriate reprocessing of reusable equipment and instruments , including appropriate use of disinfectants, aims to prevent patient-to-patient transmission of infectious agents (SOP 10).
Appropriate handling of waste assists in reducing transmission of infectious agents (SOP 14).

Table 1: Examples of Standard Precautions

(Adopted from Australian Guidelines for the Prevention and Control of Infection in Healthcare, 2019)

3. Transmission-based precautions

Any IPC strategy should be based on the use of standard precautions as the minimum level of control.

Transmission-based precautions are required as additional work practices in situations where standard precautions alone may be insufficient to prevent transmission of infectious microorganisms. Transmission-based precautions should be tailored to the particular infectious microorganism involved and its mode of transmission. Transmission-based precautions are in addition to standard precautions, required where the patient is known or suspected of having a highly transmissible infection. These highly transmissible infections may be spread by one or more routes such as Contact, Droplet and Airborne transmission.

- **Contact precautions** are used when there is a known or suspected risk of direct or indirect contact transmission of infectious microorganisms that is not effectively contained by standard precautions alone e.g. Methicillin-resistant Staphylococcus aureus (MRSA). Direct contact transmission occurs when microorganisms are transferred from one person to another. Indirect contact transmission involves the transfer of microorganisms through a contaminated intermediate object, surface or person, for example the hands of a healthcare worker after touching an infected body part.
- **Droplet precautions** are used for patients known or suspected to be infected with microorganisms transmitted over short distances by large respiratory droplets. This can occur when an infected person coughs, sneezes or talks and during certain procedures. The respiratory droplet may transmit infection when they travel directly from the respiratory tract of an infected person to a susceptible mucosal surface (nasal, conjunctiva or oral) of another person, generally over short distances. They can contaminate surfaces in the treatment zone which can then be involved in onward transmission from the surface by contact transmission e.g. Influenza, Mumps virus.
- **Airborne precautions** are used for patients known or suspected to be infected with microorganisms transmitted from person to person by the airborne route. Airborne transmission may occur through small –particle aerosols. These are created during talking, coughing, sneezing and use of dental high speed and sonic instruments. Aerosols containing microorganisms can be dispersed over long distances by air currents and inhaled by individuals, some of whom may be susceptible to infection. Examples of microorganisms transmitted by aerosols are Mycobacteria tuberculosis and measles (Rubeola virus) and Chicken Pox (varicella-zoster)

Transmission-based precautions are risk based and are used in addition to Standard Precautions when required as outlined in the summary table below. **Non-urgent treatment should always be deferred if droplet or airborne precautions are necessary.** If the patient requires urgent treatment, the dentist must minimise the risk of exposing staff and other patients to infection and may need to seek advice from infection control specialists as appropriate.

Summary of categories: Examples of when transmission based precautions are required

Route	Contact	Droplet	Airborne
When are transmission based precautions required	Patient confirmed infectious for: <ul style="list-style-type: none"> • MRSA • Norovirus • Confirmed/suspected <i>Clostridioides difficile</i> Infection • Carbapenemase Producing Enterobacteriales (CPE). 	<ul style="list-style-type: none"> • Seasonal influenza • Mumps virus 	<ul style="list-style-type: none"> • Active tuberculosis i.e. Active TB with mycobacterium tuberculosis • Influenza virus • Chicken Pox • Measles
Additional PPE required for transmission based precautions	<ul style="list-style-type: none"> • Gloves and Apron 	<ul style="list-style-type: none"> • Surgical Mask • Eye and face protection 	<ul style="list-style-type: none"> • Respirator Mask • Eye and face protection

Table 2: Examples of when transmission based precautions are required

4. Standard Operating Procedures

The HSE National Guideline for Infection Prevention and Control in HSE Dental and Orthodontic Services incorporates the following Standard Operating Procedures (SOPs);

SOP No.	Description	Page No.
1	Hand Hygiene	10
2	Respiratory Hygiene and Cough Etiquette	15
3	Personal Responsibilities of Staff	16
4	Immunisation/Vaccinations	18
5	Personal Protective Equipment	20
6	Management of Sharps/Prevention of Sharps Injuries	24
7	Management of Occupational Blood and Body Fluids Exposures	28
8	Routine Management of the Physical Environment (including domiciliary and school settings)	29
9	Appropriate Use of Single-Use Items	41
10	Decontamination of Reusable Invasive Medical Devices	42
11	Cleaning and Disinfection of Patient Care Equipment and Domiciliary Care	57
12	Care of Dental Suction Systems	61
13	Care of Dental Unit Waterlines and Water Quality	63
14	Waste Management	71
15	Service Animals	75
16	Dental Antimicrobial stewardship, Infectious diseases and Multidrug Resistant Organisms (MDRO)	76

Table 3: Standard Operating Procedures

SOP 1 Hand Hygiene

Healthcare associated infections (HCAs) are infections that are acquired following contact with the healthcare system. Hand hygiene is one of the most effective means of preventing HCAs.

1.1 For staff to be competent in appropriate hand hygiene there is a requirement to receive mandatory hand hygiene education and training on induction and every two years thereafter.

Access link for HSE Land training:

[Hand Hygiene for HSE Clinical and non-clinical Staff](#)

1.2 Dental facilities should have the following in place to support effective hand hygiene:

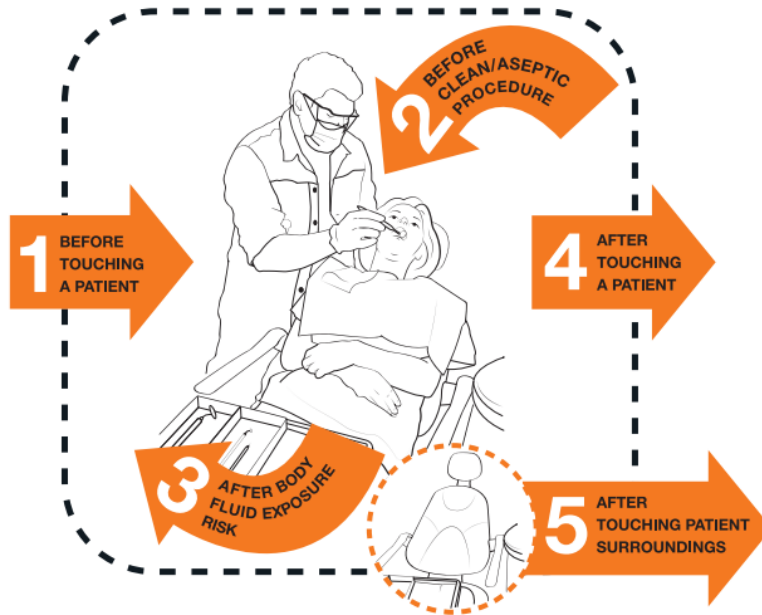
- Dedicated hand wash basins with soap dispenser, paper towel and a foot operated non healthcare risk waste bin
- Access to HSE approved alcohol based hand rubs (ABHRs) at the point of care
- HSE Hand wash/alcohol hand rub signage displaying the approved hand hygiene technique
- Access to HSE approved hand creams/moisturisers. Staff should regularly use hand moisturising agents to reduce irritation and maintain the integrity of the skin.

1.3 Staff are required to be in compliance with the National Hand Hygiene Guidelines which include:

- Bare below the elbow (e.g. short sleeved top or rolled up sleeves at least 10cm above the wrist)
- Remove all wrist jewellery, including wristwatch/electronic devices
- Remove all hand jewellery (a single plain band (no stones) may be worn)
- Keep fingernails short (e.g. tips less than 0.5cm)
- Do not wear false nails or nail enhancements (e.g. gel nails, acrylic nails, nail hardener)
- Do not wear nail varnish of any kind (including nail hardener)
- Cover cuts and abrasions with a waterproof dressing

<https://www.hse.ie/eng/about/who/qid/nationalsafetyprogrammes/hcaiamr/2015updateguidelinesforhandhygiene.pdf>

1.4 Perform Hand Hygiene using an ABHR or soap and water using an appropriate technique (e.g. WHO) in line with the WHO 5 Moments for Hand Hygiene.



1. Before touching a patient	When: Clean your hands before touching a patient Why: To protect the patient against harmful germs carried on your hands
2. Before clean/aseptic procedure	When: Clean your hands immediately before performing a clean/aseptic procedure Why: To protect the patient from harmful germs (including the patient's own) from entering his/her body.
3. After body fluid exposure risk	When: Clean your hands immediately after a procedure involving exposure risk to body fluids (after glove removal) Why: To protect yourself and the environment from harmful patient germs
4. After touching a patient	When: Clean your hands after touching a patient at the end of the encounter or when the encounter is interrupted Why: To protect yourself and the environment from harmful patient germs
5. After touching patient surroundings	When: Clean your hands after touching any object or furniture in the patient's surroundings when a specific zone is temporarily and exclusively dedicated to a patient – even if the patient has not been touched. Why: To protect yourself and the environment from harmful patient germs

Table 4: World Health Organisation - 5 Moments for Hand Hygiene.

1.5 Additional situations when hand hygiene should be performed:

- At the start and end of the working day
- After using the toilet
- Before preparing medication
- Before preparing or eating food
- When visibly dirty or soiled with blood or body fluids e.g. coughing

1.6 Hand Hygiene Technique

Hand hygiene can be carried out in three ways:

- *Use of alcohol based hand rubs (ABHR) foam/gel*
- *Wash with plain liquid soap and water followed by patting dry with single use towels*
- *Wash with antiseptic hand wash and water followed by patting dry with single use towels*

Best practice is for dental staff to use ABHR between patient appointments and during interruptions within the appointment. ABHR can be used as frequently as necessary. Alcohol based hand rub gel/foams are the preferred method for hand hygiene when the hands are not soiled and are physically clean. A moisturiser (compatible with glove wearing) should be applied up to four times a day.

There are 2 situations where alcohol hand rub is not sufficient:

- *After contact with a patient known/suspected to be infectious with C. Diff or Norovirus.*
- *Where hands are visibly soiled.*

In these instances, wash hands with antiseptic soap or plain soap and water

Use Hand Rub/Gels/Foam:

Hand rubs are very effective antimicrobial agents. They should be applied to hands for a minimum of 15 seconds (20-30 seconds WHO), using an adequate volume to completely wet the hands.

ABHR

Alcohol based products containing 70% (60-75%) alcohol and an emollient are kinder to the skin than soaps or antimicrobial antiseptics. Repeated use of an alcohol hand rub can lead to an excessive build up emollient on the hands; this should be removed by periodic washing with soap and water.

Use of emollient hand cream/moisturiser:

A HSE approved emollient hand cream/moisturiser should be applied regularly, such as after performing hand hygiene before a break or finishing work, but not applied before donning gloves. Hand hygiene technique may need to be reviewed if skin irritation occurs. If irritation persists, occupational health should be consulted for advice.

Alcohol Based Hand Rub Technique

- Effective decontamination of the hands using alcohol hand rub involves a series of steps and should take at least 15 seconds. WHO recommends 20-30 seconds for entire procedure.
- Hands should be free of dirt and organic material (alcohol is ineffective in the presence of dirt).
- Dispense, as per manufacturer's instructions, the required volume of alcohol-based rub/gel into the palm of the hands to adequately cover hands.
- Use the WHO technique – listed below.
- Each step is repeated to ensure the alcohol-based rub/gel will come into contact with all surfaces of the hands and wrist without the product drying out.

Steps to be followed or procedure or sequence to be followed when applying ABHR;

1. Apply a palmful of the product in a cupped hand covering all surfaces
2. Rub hands palm to palm.
3. Right palm over left dorsum with interlaced fingers and vice versa.
4. Palm to palm with fingers interlaced.
5. Back of fingers to opposing palm with fingers interlocked.
6. Rotational rubbing of left thumb clasped in right palm and vice versa.
7. Rotational rubbing backwards and forwards with clasped fingers of right hand in left palm and vice versa.
8. Once dry your hands are safe.
 - Refer to Alcohol Based Hand Rub Technique poster – Appendix V.

Hand Washing Technique

- Effective hand washing technique involves a sequence of events and should take at least 15 seconds: WHO recommends 40-60 seconds for entire procedure
- Wet hands and wrists under running water.
- Dispense liquid soap (enough to form lather) into a cupped hand.
- The hand wash solution must come into contact with all surfaces of the hands using the WHO 6 step technique – listed below.
- Each step includes 5 repeats of the movement.

Steps to be followed or procedure or sequence to be followed when carrying out handwashing;

1. Wet hand with water
2. Apply enough soap to cover all hand surfaces.
3. Rub hands palm to palm.
4. Right palm over left dorsum with interlaced fingers and vice versa.
5. Palm to palm with fingers interlaced.
6. Backs of fingers to opposing palms with fingers interlocked.
7. Rotational rubbing of left thumb clasped in right palm and vice versa.
8. Rotational rubbing backwards and forwards with clasped fingers of right hand in left palm and vice versa.
9. Rinse hands with water.
10. Dry hand thoroughly with single use towel.
11. Use towel to turn off tap.
12. Your hands are now safe.
 - Refer to WHO Hand Washing Technique poster – Appendix VI.

Click link below to access HPSC 'Guidance for hand hygiene in Irish healthcare settings 2015'
[Guidance for hand hygiene in Irish healthcare settings 2015](#)

SOP 2 Respiratory hygiene and cough etiquette

Respiratory hygiene is vital to prevent the spread of respiratory infections (influenza and colds) via aerosol and droplet contamination.

- 2.1 Waiting rooms should display respiratory hygiene posters (Appendix VII) leaflets and supply non risk waste bins to dispose of soiled tissues. Posters are available by accessing link below

<https://www.hpsc.ie/az/respiratory/influenza/seasonalinfluenza/infectioncontroladvice/respiratoryhygieneposters/>

- 2.2 Anyone with signs and symptoms of a respiratory infection, regardless of the cause, should follow respiratory hygiene and cough etiquette:
- Cover nose/mouth with a tissue when coughing/sneezing and dispose of used tissue in non-healthcare risk waste bin and perform hand hygiene.
 - If no tissues are available, cough or sneeze into the inner elbow (upper sleeve) rather than into the hand.
 - Keep contaminated hands away from the mucous membranes of the eyes and nose.
 - Carry out hand hygiene after contact with respiratory secretions and contaminated objects/materials.

SOP 3 Personal responsibilities of staff

3.1 Surgery Clothing

The guiding principle is that all staff who work in healthcare settings must accept that the requirement for staff and patient health and safety takes priority over any personal preferences with respect to dress and appearance regardless of the basis for that preference.

Uniform

- Studies show that uniforms are frequently contaminated by disease causing bacteria, including *Staphylococcus aureus*, *Clostridioides difficile* and *Vancomycin resistant enterococci*.
- Clean uniforms should be worn in the dental surgery. Staff should have sufficient uniforms to comply with this arrangement. The clinical day should begin with staff changing from their own clothes into their uniform in the clinic and uniforms must be removed at lunch-time, if leaving the building, or before travelling home.
- If uniform becomes visibly soiled during an operative procedure, they must be changed between patients.
- Short sleeves, bare below elbow are recommended. Disposable sleeves are available if required.
- A dental healthcare worker who wishes to wear a long sleeve top has a responsibility to ensure that these requirements are fully complied with:
 1. The top must be made from a fabric that permits hot wash (60°C).
 2. The top must be freshly laundered each day of working in the dental clinic.
 3. The top must be specifically for use in the dental clinic and must not be worn while travelling to or from work.
 4. The sleeves must fit closely to the forearm at least 10 cm above the wrist to ensure that it does not interfere with correct performance of hand hygiene and does not become wet when performing hand hygiene.
- Shoes must protect toes and heels from injury. Closed-in shoes made from a strong material such as leather must be worn in the clinical setting. Open-toed footwear/sandals/flip-flops/canvas or permeable fabrics are not permitted.
- Used uniforms must be treated as contaminated, even if not visibly soiled.
- Uniforms should be washed in a biological detergent at a temperature of 60 degrees centigrade (or above for 10 minutes) to remove any potential microbial contamination. 40°C is acceptable but removal of microbes is then dependant on the dilution effect of the rinse water and detergent action, which is less reliable. Tumble drying in a hot cycle and ironing of uniform also contribute to the decontamination process.
- If dental staff need to wear any items of their own clothing in the surgery then similar hygiene measures should be employed in accordance with local policy.
- Staff religious and cultural practices must be considered in addition to adherence with IPC however it is secondary to IPC requirements.

- Staff should have name badges on display, which may be wipeable or embroidered onto uniforms.
- Hand jewellery must not be worn in the dental setting; the only exception is a single smooth band/ring.
- Dangling or clip on ear rings should not be worn. Small stud or secured small hoop earrings may be worn.
- Lanyards/ties should not be worn due to risk of contamination and entanglement.
- In clinical areas, long hair must be tied back and secured off the collar, using minimum accessories. Long fringes should be clipped back off the face. Beards must not make contact with the patient or clinical environment when treating a patient.

Click here for further information and guidance on uniforms.

<https://www.hse.ie/eng/about/who/healthwellbeing/our-priority-programmes/hcai/resources/general/guidance-on-of-wearing-of-personal-headscarfs-and-tops-in-theatre.pdf>

3.2 Mobile phones

- Mobile phones can be sources of contamination. Use of them in the clinical setting should be limited in so far as possible.
- Mobile phones should not be on display in the dental surgery.
- Always decontaminate hands before and after phone use in the clinical environment.

3.3 Food in the dental surgery

- Eating and drinking is not allowed in the dental surgery. Food and drink should be consumed in a staff tea room or other designated non-clinical area.
- No food should be stored in a medical fridge.

3.4 Acute overt clinical symptoms

Dental staff members with an acute infectious disease e.g. flu like illness or acute infectious diarrhoea should not be involved in direct patient care. They are potential sources of infection to other staff and patients and therefore have a responsibility to:

- Consult with an appropriate medical practitioner to determine that they are capable of performing their tasks without putting patients or other workers at risk.
- Seek appropriate guidance from line manager/Occupational Health Department
- Further guidance available from CDC.

<https://www.cdc.gov/oralhealth/infectioncontrol/guidelines/index.htm>

SOP 4 Immunisation/Vaccinations

Immunisation is one of the most effective health care interventions to minimise the risk of acquiring or spreading infections. Irish guidelines on immunisations required for HCW's are available at <https://www.hse.ie/eng/health/immunisation/>.

- 4.1 All contracted staff must be assessed by occupational health department prior to commencement of work in dental and orthodontic service.
- 4.2 In practice, all staff members (whether they are new employees, currently in post, locums, temporary workers or supernumerary workers) who are at risk through contact with blood or body fluids should be immunised against Hepatitis B Virus, unless immunity to this as a result of natural infection or previous immunisation has been established.
- 4.3 All staff must be informed of the benefits and limitations of vaccination and non-vaccination and encouraged to avail of the annual Influenza vaccination. The flu vaccine can be lifesaving and the HSE Land Flu training module should be completed as part of the induction process. [HSE Land Flu Vaccine Course](https://www.hse.ie/eng/health/immunisation/pubinfo/flu-vaccination/healthcare-workers/)
<https://www.hse.ie/eng/health/immunisation/pubinfo/flu-vaccination/healthcare-workers/>.
- 4.4 Records of vaccination and follow up should be retained by Occupational Health/Dental Department.
- 4.5 Advice from Occupational Health should be sought for clarification if and when necessary.
- 4.6 It is recommended that staff know their immune status in relation to diseases they may be occupationally exposed to. Such diseases include:

Viruses	Bacteria
<ul style="list-style-type: none">○ Hepatitis B Virus infection;○ Varicella Zoster Virus (chickenpox, shingles);○ Measles Virus;○ Mumps Virus;○ Rubella virus (German Measles)	<ul style="list-style-type: none">○ <i>Mycobacterium tuberculosis (TB)</i>;

Table 5: Examples of viruses and bacteria

4.7 Exposure prone procedures

All staff carrying out exposure-prone procedures must comply with '*HSE Circular 012 - 2009 Prevention of Transmission of Blood Borne Diseases in the Healthcare Setting*' concerning the transmission of blood borne diseases and provide evidence that they are not infectious for Hep. B and also for Hep. C in the case of all new staff. Further information is available by accessing the following links:

1. <https://www.hse.ie/eng/staff/resources/hr-circulars/hse-hr-circular-012-2009-re-implementation-of-recommendations-of-report-on-the-prevention-of-transmission-of-blood-borne-diseases-in-the-health-care-setting.pdf>
2. <https://www.hpsc.ie/a-z/hepatitis/hepatitisc/guidance/File.4352.en.pdf>

Exposure prone procedures are those invasive procedures which carry a risk of transmission from healthcare worker to the patient. HSE HR Circular 19/2008 defines Exposure Prone Procedures (EPPs) as 'those invasive procedures where there is a risk that injury to the health care worker may result in the exposure of the patient's open tissues to the blood of the health care worker. These include procedures where the health care worker's gloved hands may be in contact with sharp instruments, needle tips or sharp tissues (e.g. spicules of bone or teeth) inside a patient's open body cavity, wound or confined anatomical space where the hands or fingertips may not be completely visible at all times. Dental Nurses must not, under any circumstances, have work practices that allow them to put their fingers within a patient's oral cavity.

SOP 5 Personal Protective Equipment (PPE)

PPE as part of standard precautions involves the use of a variety of barriers, used singly or in combination to protect skin, mucous membranes, airways and clothing from contact with infectious agents. Protective barriers include gloves, gowns, aprons, masks and protective eyewear. PPE also provides protection against other hazards in the healthcare facility such as chemicals and physical injury.

The most suitable type of protective clothing varies according to the nature of the patient interaction and the equipment used, and is a matter of professional judgment following risk assessment. Where there is a risk of large splashes of blood or body substances, impermeable protective clothing must be worn.

Managers must ensure that PPE is made available and that staff members are trained in the use of PPE. All members of staff are responsible for ensuring the correct use and disposal of PPE.

5.1 Procedures on Personal Protective Equipment

Each Dental Healthcare Worker (DHCW) should make a risk assessment of the planned procedure and select PPE depending on;

1. The nature of the procedure
2. The risk of exposure to blood and body fluids
3. The risk of contamination

5.1.1 Glove wear

- Non latex procedure gloves are single use items, and are the preferred glove for clinical use in the HSE.
- Sterile gloves should be used when the hands are likely to come into contact with normally sterile areas. (Refer to 8.11 Aseptic Technique)
- Heavy duty gloves are only required if indicated by risk assessment.

Indication for Gloves on:

- When anticipating contact with saliva, blood, other body fluid, mucous membrane or non-intact skin.
- Contact with a patient (and his/her immediate surroundings during contact precautions).
- Dental sedation with IV insertion and removal.
- Prior to handling Dental Reusable Invasive Medical Devices (RIMD).
- When handling chemicals and waste.
- Cleaning and disinfection of the clinical environment

	<p><u>Indication for Gloves off:</u></p> <ul style="list-style-type: none"> • As soon as gloves are damaged or thought to be damaged. • When contact with blood, another body fluid, non-intact skin and mucous membrane has occurred and has ended. • When contact with a contaminated body site on a patient has ended. • When surgery cleaning/contaminated instrument handling activity has ended. • Post RIMD decontamination. • When there is an indication for hand hygiene (WHO 5 Moments for Hand Hygiene). <p>Dispose of gloves into general waste unless contaminated with blood and/or saliva (healthcare risk waste).</p>
<p>5.1.2 Eye Protection</p>	<p>Clinicians and dental nurses must protect their eyes and those of their patients from foreign bodies, aerosol and splatter by wearing protective glasses or visors during operative procedures. Face and eye protection is an important part of standard precautions. An individual's prescription glasses/contact lenses are not adequate eye protection. Glasses/visors with top and side protection must be used.</p> <p><u>Indication for eye protection</u></p> <ul style="list-style-type: none"> • When chair side for a clinical procedure. • When there is potential for aerosol spray or splashes. • When dealing with chemicals and waste. • When decontaminating instruments and surfaces such as placing/removing instruments in/from the ultrasonic cleaner. <p>Patients' undergoing examination or clinical treatment must wear protective glasses at all times to protect their eyes against possible injury. Visors and glasses must be inspected after each appointment and cleaned using a combined detergent/disinfectant wipe or as per manufacturer's instructions. Visors must be disposed of when cracked or damaged or if they are single use items.</p> <p>In the event of a splash to eyes, firstly rinse the eyes with a copious amount of cold water. In the event of a splash to eyes with contact lens in place; rinse eye with lens in place, then remove lens and rinse again. Lenses allow the chemical to stay in contact with the eye. (Refer to SOP 7)</p>

5.1.3 Surgical Face Masks

- Surgical face masks are single use items and are recommended for all dental procedures as part of standard precautions.
- Masks must be changed between patients and not pulled down around the neck and re-used.
- Masks should be close fitting and cover the mouth and nose.
- Avoid touching the outer surface of the mask during or following procedure as it should be assumed to be contaminated.

Follow the instructions below for putting on the face mask.

- Face Mask with Ear loops:* Hold the mask by the ear loops. Place a loop around each ear.
- Face Mask with Ties:* Bring the mask to your nose level and place the ties over the crown of your head and secure with a bow.
- Determine which side of the mask is the top. The side of the mask that has a stiff bendable edge is the top and is meant to mould to the shape of your nose.
- Determine which side of the mask is the front. The coloured side of the mask is usually the front and should face away from you, while the white side touches your face.

Follow the instructions below for removing the face mask.

- Clean your hands with hand sanitizer or soap and water before touching the mask.
- Face Mask with Ear loops:* Hold both of the ear loops and gently lift and remove the mask.
- Face Mask with Ties:* Untie the bottom bow first then untie the top bow and pull the mask away from you as the ties are loosened.
- See 5.2 for the correct sequence for putting on/removing PPE to prevent contamination of the face, mucous membrane and clothing.
- Dispose surgical face masks into general waste unless contaminated with blood and/or saliva (healthcare risk waste).
- Perform hand hygiene after removing the mask in order to prevent contamination of your face and the surgery environment.

5.1.4 Healthcare Respirator Masks Airborne precautions

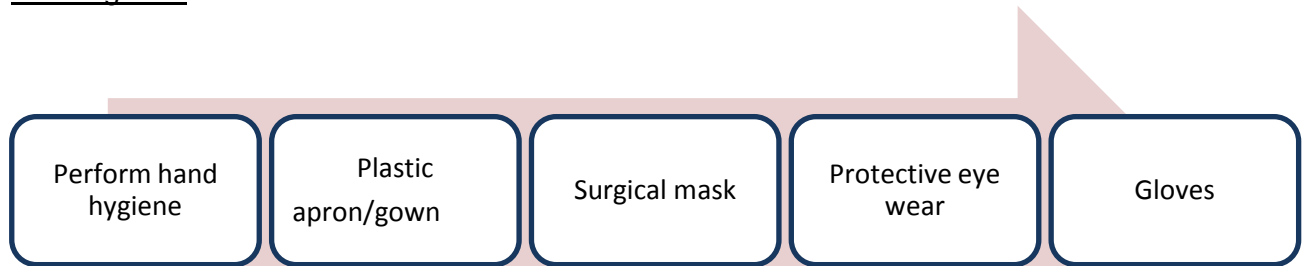
- Healthcare Respirator Masks should be available to staff.
- P2/FFP3 respirators are designed to protect the wearer from breathing in small airborne particles which might contain viruses.
- Staff must be trained in using these respirators.
- They should be worn only when carrying out aerosol-generating procedures on patients with a suspected or confirmed respiratory virus such as Pandemic Influenza or Infectious Tuberculosis/Multi Drug Resistant Tuberculosis, measles, chicken pox (*varicella-zoster virus*).

	<ul style="list-style-type: none"> • These masks must be fit tested and are single use items. The purpose of fit testing is to identify which size and style of respirator is suitable for an individual, and to ensure that it is worn correctly. It also provides an opportunity to ensure healthcare workers are properly trained in the correct use of the mask. • Respirators must be used with other necessary personal protective equipment (PPE) such as gowns, gloves and compatible eye protection. • Respirators should be discarded after each use into healthcare risk waste as they are used when transmission based precautions are required.
5.1.5 Gowns / aprons	<ul style="list-style-type: none"> • Uniforms should be protected by wearing single use disposable impervious gowns for surgical procedures and plastic aprons in the decontamination process or in the event of needing contact precautions.

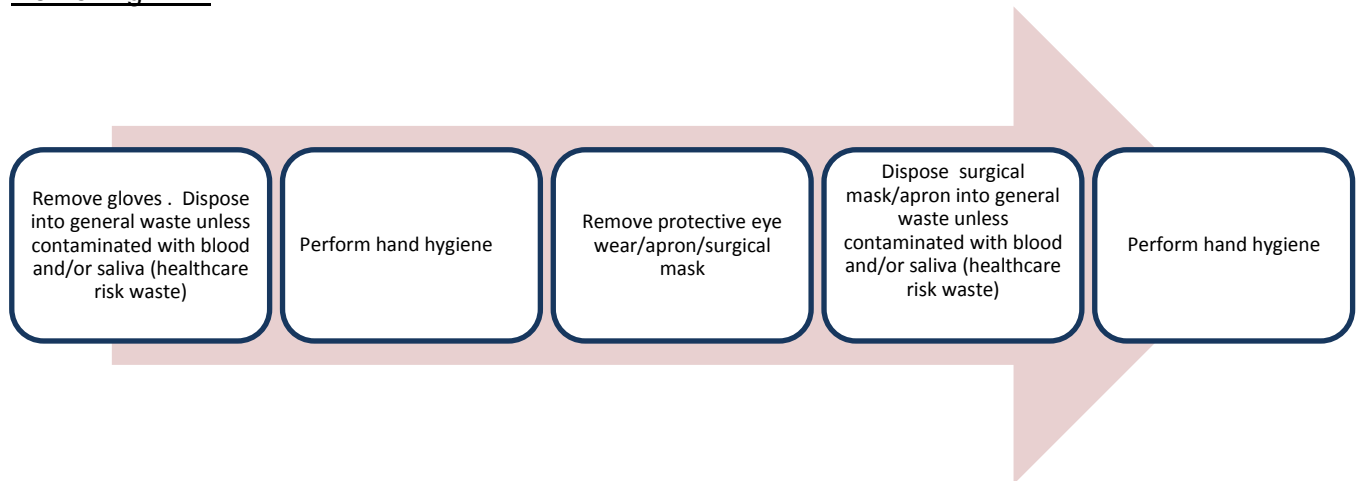
5.2 Donning and Removing PPE

PPE should be donned and removed in the following sequence so that the chance for skin or environmental contamination is reduced. Hand Hygiene is always the final step after the removal and disposal of PPE.

Donning PPE



Removing PPE



SOP 6 Management of Sharps/Prevention of Sharps Injuries

Sharp instruments used in healthcare are a common cause of injury that can result in infection. Many sharp injuries are received during the clean-up process with sharp instruments (RIMD). Staff must take due care and attention during the removal of used RIMD and waste. A risk assessment of possible sources of sharp injuries should be carried out in each clinic. The possibility of sharp injuries cannot be eliminated in dental treatment but use of available safety devices is recommended and handling of sharps should be kept to a minimum e.g. needle safety systems, adhesive sharps pads.

What are sharps?

The Sharps Regulations 2014 define sharps as 'objects or instruments necessary for the exercise of specific healthcare activities, which are able to cut, prick or cause injury or infection' e.g. Needles, burs, orthodontic wires, scalpel, suture, local anaesthetic cartridge, matrix band, endodontic files, reamers, etc. (NB: this list is not exhaustive).

What is a significant sharp's injury?

- *Penetration of the skin by a needle or other sharp that may contain blood or body fluid e.g. needle stick injury.*
- *Human scratches/bites (where blood is drawn)*

Significant contamination

- *Contamination of broken skin with blood*
- *Splashes of blood/body fluids onto mucous membranes (e.g. mouth/eyes).*

6.1 All healthcare facilities in Ireland are required by law to comply with S.I. No. 135/2014 - European Union (Prevention of Sharps Injuries in the HealthCare Sector) Regulations 2014 in order to safeguard the health and well-being of patients and Dental Health Care Workers.

6.2 All Dental Staff must understand and comply with the HSE Policy for the Safe Use, Handling and Disposal of Sharps and Health Protection Surveillance Centre (HPSC) toolkit.

6.3 Key points to prevent a sharps injury include:

- Safe injection practices including;
 - Disposal of single use syringes and needles without dismantling whether fully used or not
 - Aseptic technique must be used when drawing up injections
 - Single dose vials should be used wherever possible e.g. local anaesthetic and midazolam
 - Do not break, bend or recap needles
 - Use blunt needles when using irrigation syringes
 - Use single ended examination probes

- The clinician (Dentist/Hygienist/Orthodontist/Orthodontic Therapist) is responsible for the safe use, handling and disposal of the single use sharp into the sharps container at the point of use e.g. Local Anaesthetic (LA), Orthodontic wires, irrigation syringe needles or any such sharp They should not be passed to the dental nurse for disposal.
- Ensure sharps box/container is located in a safe, secure location and out of the reach of children.
- Sharps containers should be chosen to provide appropriate access for the range of sharps in use in a specific location.
- Sharps containers must conform with UN Standard 3291.
- Orthodontic wire sharps must be disposed of using a safe system by the clinician e.g. adhesive pads or an alternative system.
- Each sharps container must be correctly assembled, signed/dated on assembly.
- A temporary closure mechanism on the sharps container must be in place when not in use.
- Sharps containers must be securely closed when $\frac{3}{4}$ full, signed and tagged prior to disposal. It is the responsibility of the whole dental team to lock, sign (name should be legible) and to tag sharps containers. The tag number must be recorded and records kept for 10 years
- Sharps containers must be transported safely in an upright position to a designated secure collection point away from public access.

6.4 Staff must be familiar with the local procedures for managing sharps injuries, which follow the EMI toolkit. A laminated copy of the steps in the event of a sharps injury must be displayed in all clinics. EMI Toolkit Appendices 2 and 3 can be used for display.

<http://www.hpsc.ie/a-z/EMIToolkit>

6.5 Sharps containers must be disposed of in line with HSE Waste Policy.

6.6 The local protocol for management of sharps/prevention of sharps injuries must be available in all clinics and should include local arrangements for staff to access post exposure prophylaxis where the recipient of the sharps injury is assessed in conjunction with the risk assessment based on the EMI toolkit Appendix 20, if required.

6.7 Staff are mandated to report injuries to local manager and Occupational Health Department and complete the appropriate National Incident Report Form (NIRF) in line with the HSE Incident Management Framework <https://www.hse.ie/eng/about/qavd/incident-management/hse-2018-incident-management-framework-guidance-stories1.pdf>

6.8 Local polices must identify the route and process for notification of serious incidents to the Senior Accountable Officer (SAO) within 24 hours of occurrence.

6.9 Management of a sharps injury

The EMI toolkit – *Emergency Management of Injuries 2016* outlines in detail the procedures to be followed and include patient management forms for general practice, information leaflets for source and recipient of injuries. <http://www.hpsc.ie/a-z/EMIToolkit>

HSE Policy on the Prevention of Sharps Injuries

<https://www.hse.ie/eng/staff/safetywellbeing/healthsafetyand%20wellbeing/hse%20policy%20of%20the%20prevention%20of%20sharps%20injuries.pdf>

If any member of staff sustains an injury or contamination incident involving exposure to blood or body fluids, first aid treatment should be carried out immediately and medical help sought if required.

6.10.1 Needle Stick/Sharps Injury

- Gently encourage bleeding under running water.
- Do not suck or squeeze the wound.
- Wash the wound thoroughly with soap under running water for 2-3 minutes.
- Cover the area with a waterproof dressing or bandage.
- Dispose of sharp carefully into the appropriate puncture resistant sharps box.

6.10.2 Mucocutaneous Exposure

- Wash the affected area with copious amounts of water.

6.10.3 Eye Exposure

- Irrigate the affected eye with copious amounts of saline or water (before and after removal of contact lenses, if applicable).

6.10.4 Next Steps - Need to decide if the exposure was significant or not

- This will depend on the type of material involved e.g. blood stained or not and the type of injury sustained e.g. skin break or not
- Report to line manager or designated manager on the day.
- Complete patient management form - Appendix 1 EMI Toolkit <http://www.hpsc.ie/a-z/EMIToolkit>
- Identify the source patient if possible.
- Document details of the inoculation incident.
- Seek advice as to whether post exposure prophylaxis is required.
- If exposure is deemed significant then you have two patients to consider; the source and the recipient.

6.10.5 Post Exposure Prophylaxis – Key Points

- Occupational blood exposure presents the risk of acquiring Hepatitis B, Hepatitis C or HIV.
- Each practice should have a policy which outlines how/where post exposure prophylaxis is dealt with e.g. Emergency Department.
- A risk assessment will be carried out including the risk status of the source patient and a blood sample may be taken from the source patient.
- Decisions regarding the need for post-exposure prophylaxis should be taken immediately, within 1-4 hours in the case of HIV exposure (regarding possible use of antiviral therapy) and within 48 hours in relation to Hepatitis B exposure (specific Hepatitis B immunoglobulin is available for passive protection and may be used in addition to Hepatitis B vaccination to confer passive/active immunity after exposure).
- There is currently no recommended post exposure prophylaxis for Hepatitis C.

SOP 7 Management of occupational blood and body fluid exposures

Occupational blood and body fluids exposure may occur through percutaneous and / or mucocutaneous inoculation and human bites. Percutaneous exposure (covered in SOP 6) is defined as a puncture or laceration of the skin caused by a needle or sharp object contaminated with blood or body fluids. Mucocutaneous exposure is defined as aspiration, ingestion or splashing of blood or body fluids to the nose, lips, mouth, eyes and onto non-intact skin (and splashing to extensive areas of skin). Human bite is defined as a bite which causes bleeding or a break in the skin.

7.1 Procedure for mucocutaneous exposure

7.1.1 Procedure following splashes to mouth

- Rinse mouth thoroughly with water.
- Do not swallow water.
- Report to line manager and the Emergency Department if necessary.

7.1.2 Procedure following splash to eye

- Firstly rinse the eyes with a copious amount of cold water.
- In the event of a splash to eyes with contact lens in place; rinse eye with lens in place, then remove lens and rinse again. Lenses allow the chemical to stay in contact with the eye.
- Report to line manager and the Emergency Department if necessary.

7.1.3 Procedure following exposure to non-intact skin

- Wash skin with water.
- Cover with a sterile waterproof dressing if required.
- Report to line manager and the Emergency Department if necessary.

7.1.4 Procedure following human bite / scrapes

- Wash with water.
- Cover with a sterile waterproof dressing if required.
- Report to line manager and the Emergency Department if necessary.

Any attendance at the Emergency Department must be reported to Occupational Health at the earliest opportunity. The local protocol must be available in all clinics and should include appropriate local contact details.

EMI Toolkit Appendix 4 can be used for display <http://www.hpsc.ie/a-z/EMIToolkit>

SOP 8 Routine Management of the Physical Environment

In a healthcare setting, cleaning is everyone's responsibility. Cleaning is a major part of IPC. Therefore, it is important to thoroughly clean the treatment area on a regular basis.

Cleaning is the removal of dirt, dust, soil, stains and marks etc. from items or surfaces. Cleaning should be undertaken as soon as possible after the area or item gets dirty, otherwise the loose dirt/soil will "set" and subsequently be more difficult to remove. All areas should be clean, tidy and well-maintained and be uncluttered with only appropriate, cleanable, well-maintained furniture, fixtures and fittings used.

All cleaning agents must be used in accordance with the manufacturer's instructions and appropriately stored in a labelled cupboard. Any hazardous chemicals should be stored in a locked and labelled cupboard. Safety data sheets and chemical agents risk assessments must be available to staff. All cleaning equipment must be well maintained and in good repair. Cleaning equipment should be cleaned and dried between uses and micro fibre flat mop heads and cloths should be colour coded and either disposable or laundered daily.

Each location should have sufficient cleaning arrangements in place to ensure that floors, bins, window sills, cupboard doors, handles etc. are maintained according to hygiene standards. (Refer to Appendix VIII Sample Cleaning Checklist for contract cleaner)

It can be useful to have a colour coded system for reusable cloths and/or mops

- *Red - for bathrooms.*
- *Green - for kitchens.*
- *Blue -for non-clinical areas such as offices and waiting rooms.*
- *Yellow – for clinical and decontamination areas.*

Due to IPC considerations, it is recommended that each patient has his/her treatment completed in one single sitting in the dental surgery.

Clinical equipment should be procured to include manufacturer instructions for cleaning. Staff should undertake cleaning and decontamination of all clinical equipment (both the clinical component and body of equipment) according to manufacturer's instructions. Training in care of equipment is particularly important when new items of equipment are introduced into the clinic. Checklists are recommended.

8.1 Management of the treatment areas

8.1.1 Surgery Design

- Microorganisms are ubiquitously present on skin and are constantly shed onto inanimate objects including surfaces.
- Contaminated surfaces act as a reservoir for microorganisms and may contaminate any item or part of the body which comes in contact with the surface e.g. hands, instruments etc.
- The surgery design should facilitate cleaning and reduce the risk of cross-contamination. It should allow adequate access for zoning and cleaning and be free from clutter. Work surfaces should be smooth and impervious.
- Consideration of Infection control requirements must be undertaken when purchasing surgery equipment as per HSE National procurement contracts.
- Flooring should be seamless and smooth and easily cleaned.
- Clinical pattern wash hand basins with an offset drain outlet that is not impacted by tap water flow are recommended. Room should be well ventilated or air conditioned.

8.1.2 Ventilation

- Ventilation and air quality are important considerations in the management of aerosols within the working environment.
- Ideally rooms in the department should be mechanically ventilated and controlled to provide a comfortable working environment.
- In non-purpose-built facilities, the control of airflow is a challenging issue and the practice should consider how good ventilation can be achieved without resorting to unreasonably complex or expensive ventilation systems.
- The use of freestanding or ceiling-mounted fan units, however, is not recommended.
- Detailed guidance can be found in Health Technical Memorandum 03-01 Specialised Ventilation for Healthcare premises.

<https://www.gov.uk/government/publications/guidance-on-specialised-ventilation-for-healthcare-premises-parts-a-and-b>

8.2 Zoning and worktop organisation

8.2.1 Zoning and patient positioning

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

8.2.2 Worktop Organisation

- Keep all surfaces clear of clutter as items left on the worktops can become contaminated from aerosols generated during procedures and from unnecessary handling.
- Only materials for immediate use should be placed on the work surface in the designated working zone.
- Equipment that is used frequently should be barrier protected.
- Cotton rolls, cotton pellets and burs should be kept out of the contaminated area and be dispensed to the patient tray before treatment.
- If additional instruments or materials need to be retrieved from the drawers during a patient treatment it must be by a method that does not contaminate other instruments or materials.

8.3 Use of surface barriers

Impervious barriers (which do not allow fluid to pass through) 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.

- Barriers must be used in the following areas and must be changed between patients:
 - Handle and control panel of dental cart, headrest, bracket table, dental hand piece motors, and overhead light handle.
 - Headrests may be covered or cleaned between patients.
 - Air/water syringe control buttons and handpiece should be barrier protected. It is not necessary to cover the air and water tubing with barriers where the tubing is smooth and can be disinfected easily with wipes.
 - Curing light: A curing light sleeve should be used to cover the fibre optic part of the curing light and also to cover the handle. The air inlet and exhaust should not be covered as this will cause the device to overheat.
 - X-ray film or digital sensor plates: X-ray films or phosphor plates without a pre-existing barrier must be covered with a suitable barrier e.g. specifically designed hygiene envelopes or medical quality adhesive barrier wrap.
 - Phosphor plates: Follow manufacturer's instructions for the correct barrier selection.
 - When changing barriers, every effort should be made to avoid contaminating the surface that has been covered. Where the surface has been contaminated either in use or during removal of the barrier, it must be cleaned/disinfected using the one-stage cleaning process outlined in 8.4.
 - All surfaces which are covered with barriers must be cleaned and disinfected at the end of each session.

8.4 Each stage of the day

Beginning the day	During clinical sessions	After patient treatment	End of day
<p>8.4.1 Beginning of day</p>	<ul style="list-style-type: none"> At the beginning of the day clinical surfaces should be cleaned. Fill the dental unit water bottle. Flush all Dental Unit Water Lines on dental cart. Apply barrier protection as appropriate 		
<p>8.4.2 During clinical session</p>	<ul style="list-style-type: none"> If additional instruments and materials have to be retrieved from outside the contaminated zone during a patient treatment, it must be by a method that does not contaminate other instruments or materials in the drawers. Drawers are opened by elbow touch, gloves must be removed and hands decontaminated with ABHR before dispensing additional materials. Or if necessary, instruments are retrieved using a no touch technique. Where possible avoid giving local anaesthetic and then sending the patient to the waiting room and treating another patient. However if this situation is unavoidable local anaesthesia must be treated as a “minor procedure” for IPC purposes, i.e. surfaces must be cleaned and decontaminated after administration of a local anaesthetic if another patient is to be treated while a patient waits in the waiting area for local anaesthetic to act. 		
<p>8.4.3 After patient treatment</p> <p><i>*Dual detergent/disinfectant wipe is a HSE approved product which cleans and disinfects. The alternative is a two stage procedure using a detergent followed by a disinfectant wipe.</i></p>	<ul style="list-style-type: none"> Zoning facilitates an efficient way to decontaminate the surgery between patients. Refer to 8.2.1 Surgery can be decontaminated and should be cleaned rapidly as follows; <ul style="list-style-type: none"> Wear appropriate PPE while decontaminating surfaces. Surgical face mask, safety glasses and gloves should be worn when handling *dual detergent/disinfectant wipes. Flush air/water through the handpiece/scaler/3 in 1 syringe(s) for 15-30 seconds into a receptacle/disposable cup before removing handpiece/scaler from the dental unit. This procedure must be carried out after every patient (assuming handpieces are used) and is intended to flush out contaminants that may have been retracted through the handpiece air/water line system. Remove all disposables from instrument tray and dispose of into healthcare risk waste. 		

- Remove and dispose of all disposable barriers, 3-in-one tips and aspirator tips into healthcare risk waste.
- Place instruments into the designated instrument transport box labelled 'contaminated' for removal to Local Decontamination Unit (LDU).
- Instruments must not be allowed to dry out prior to cleaning. If instruments cannot be decontaminated within 30 minutes of use, they should be kept moist. This can be achieved by using a non linting absorbent pad/gauze and a few mls of water or enzymatic cleaner (no free liquid) in a transport container or by using a product specifically intended for this purpose and in accordance with manufacturer instructions. The container needs to be a secure box labelled "contaminated".
- Place patient safety glasses, amber shield etc. on clean paper towel. Remove gloves, carry out hand hygiene and replace gloves. Clean and disinfect safety glasses and amber shield with a dual detergent/disinfectant wipe for each item.
- Note on how to use dual detergent/disinfectant wipes: work from clean to contaminated areas, taking care not to go over the same area twice. Let the surface air dry.
- When cleaning, work from higher to lower areas.
- Remember to surface disinfect air motor and/or coupling after each use with a combined wipe. Follow manufacturer guidelines.
- If the area is heavily contaminated (e.g. after surgical procedure), you may need to use more dual detergent/disinfectant wipes.
- Follow manufacturer's instructions for contact time of cleaning disinfectant wipes used.
- It is not necessary to disinfect the entire chair between patients unless obviously contaminated.
- Guidance on approach to be followed when dealing with patients with head lice is available from.
<https://www.cdc.gov/parasites/lice/head/prevent.html>
- The dual detergent/disinfectant wipe container must be kept tightly closed when not in use and stored according to manufacturer's instructions. Care must be taken with liquids which can evaporate.
- At the end of a clinical session all work surfaces, including apparently uncontaminated surfaces in the clean and contaminated zones, must be cleaned and disinfected using a dual detergent/disinfect wipe(s).

8.4.4 End of day

- Disinfect the aspirator, its tubing, clean spittoon (if present) and clean amalgam trap
- Decontamination room
 - Ultrasonic Cleaner- drain down, clean and dry
 - Autoclave
 - If not connected to a continuous water supply, drain the autoclave reservoir, clean and leave dry at the end of the day
 - Clean steriliser chamber with damp, non linting material
 - Leave empty with doors open
 - Clean the outside of the autoclave
 - Clean all work surfaces of decontamination room
- Once cleaning is completed dispose of wipes, paper towels gloves and face mask into general waste unless contaminated with blood and/or saliva (then dispose of into healthcare risk waste). Carry out hand hygiene.
- Ensure the surgery floors are thoroughly cleaned at least every day and more frequently if there is obvious contamination.
- Change out of uniform and clinical shoes before leaving clinic

8.5 Patient mouth rinsing

- For IPC purposes the use of a spittoon is not recommended. Suction devices can be used to assist patients in removing liquids from their mouth both during and after treatment is completed. Where use of a spittoon is unavoidable, it must be cleaned and disinfected between patients using an appropriate cleaning and disinfection method. It must also be disinfected at the end of each session.
- If no longer in use, ideally the spittoon should be removed and the wastewater pipe work disconnected.
- If no longer in use, the cup filler water outlet and the bowl rinse waterlines should be disconnected from the dental waterline loom.
- However if this is not possible, then the spittoon should be cleaned and disinfected with suction disinfectant solution.

8.6 Instrument trays

Instrument trays are at high risk of clinical contamination during clinical sessions. Therefore appropriate care must be taken to prevent cross contamination within the dental surgery.

- It is recommended that a disposable instrument tray or an impervious tray liner is used to cover the entire bracket table.
- If a disposable instrument tray is not used, then the instrument tray must be decontaminated
- Instrument trays or any other item must not be placed on the patient's chest.

8.7 Dental surgery computers

It has been found that up to 80% of computers were contaminated with potentially pathogenic bacteria.

- All computer equipment must be located as far away as feasibly possible from the dental treatment area and should be located in the clean zone. However, areas outside the patient zone can be contaminated by aerosol generated during dental procedures.
- Surgeries should have wipe-able keyboards. These should be cleaned using combined detergent/ disinfectant wipes. In absence of wipe able keyboards, the keyboard and mouse must be covered with an impervious barrier to prevent contamination of the keyboard by aerosol. These barriers, when used, must be changed between patients.
- Signature pads and touch screens when used must also be compatible with infection control procedures.

8.8 Aerosols and blood/saliva splatter

- The prevention of the transmission of microorganisms by aerosol and splatter relies on all staff implementing standard precautions.
- Saliva/blood splatter has larger particle size and occurs in the treatment zone.
- Good surgery ventilation reduces the risk of aerosol and splatter transmission (where artificially ventilated, there should be a minimum of 10 air changes per hour or as advised by consulting heating engineer).
- High volume suction during operative care and wearing of face masks, goggles and gowns reduces the risk to clinical staff from aerosols and splatter generated by turbines and ultrasonic equipment.
- Rubber dam isolation reduces aerosols and is recommended to be used for all endodontic treatment and otherwise as appropriate.

8.9 Domestic/environmental cleaning

- Each location must have a specific set of tasks for environmental service cleaning staff members who have specific areas for cleaning in the dental setting which does not include dental equipment.
- Environmental service cleaning staff should have access to dedicated housekeeping rooms.
- Daily: all rooms and corridors within the practice should be cleaned and damp dusted.
- Cleaning contractors should be clear as to what their roles are in cleaning i.e. signed checklists should be available for inspection.

Refer to Appendix VIII Sample Cleaning Checklist for contract cleaner

8.10 Management of Spills (Blood and Body Fluids)

Spills of blood and other high risk body fluids represent an infection risk and should be removed as soon as possible as described below. Practice staff dealing with spillages should be trained to do so. The staff member who discovers the spill is responsible for making it safe.

Process of spills management

Strategies for decontaminating spills of blood and other body substances (e.g. vomit, urine) differ based on the setting in which they occur and the volume of the spill:

- healthcare workers can manage small spills by cleaning with detergent solution
- for spills containing large amounts of blood or other body substances, workers should contain and confine the spill by:
 - Position a warning sign “cleaning in progress” beside the contaminated area.
 - Keep other persons away from the contamination until it is effectively and appropriately dealt with.
 - Cuts/abrasions or breaks in the skin must be covered with waterproof dressing.
 - removing visible organic matter with absorbent material (e.g. disposable paper towels).
 - removing any broken glass or sharp material with forceps.
 - soaking up excess liquid using an absorbent agent.

If spillage has occurred on soft furnishings, a detergent solution can be used to clean the area thoroughly. Do not clean soft furnishings with a disinfectant such as sodium hypochlorite.

Soft furnishings can also be wet vacuumed. Following cleaning of soft furnishings, they must be allowed to dry before reuse. Alcohol solutions should not be used to clean spillages.

Appropriate processes for managing spills:

Volume of spill	Process
Spot cleaning	Select appropriate personal protective equipment (PPE) Wipe up spot immediately with a damp cloth, tissue or paper towel Discard contaminated materials Perform hand hygiene
Small spills (up to 10cm diameter)	Select appropriate PPE Wipe up spill immediately with absorbent material Place contaminated absorbent material into impervious container or plastic bag for disposal Clean the area with warm detergent solution, using disposable cloth or sponge Wipe the area with sodium hypochlorite and allow to dry Perform hand hygiene

Large spills (greater than 10cm diameter)	Select appropriate PPE Cover area of the spill with an absorbent agent (e.g. paper towels/pads) and allow to absorb Use disposable scraper and pan to scoop up absorbent material and any unabsorbed blood or body substances Place all contaminated items into impervious container or plastic bag for disposal Discard contaminated materials Mop the area with detergent solution Wipe the area with sodium hypochlorite and allow to dry Perform hand hygiene
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Table 6: Processes for managing spills
 (Australian Guidelines for the Prevention and Control of Infection in Healthcare, 2019)

Choosing a disinfectant (when required)

The consideration to use sodium hypochlorite should be based on risk assessment of the environment, the spill, risk of transmission of disease, and the surface area and potential hazards with using the product.

If a disinfectant is required, a HSE approved detergent/disinfectant or sodium hypochlorite must be used. Choosing a disinfectant that is compatible with the surface material where the spill has occurred is integral in order to avoid damage to the surface.

Spill kit

A spill kit should be readily available in each clinical area and should include a scoop and scraper, single-use gloves, protective apron, surgical mask and eye protection, absorbent agent, clinical waste bags and ties, and detergent. All parts should be disposable to ensure that cross-contamination does not occur.

Note: Correct dilution of sodium hypochlorite is essential

- 10,000 ppm (1% solution sodium hypochlorite)for large volume blood spills
- 1,000 ppm (0.1% solution sodium hypochlorite) for spots splashes and small volume blood, spills of urine, vomit and faeces.
- A 1-litre graduated jug is required for this purpose. The outer surface can be cleaned and disinfected if contaminated, using the chlorine solution after use and left inverted to dry. Chlorine releasing agents are corrosive to metal and should be rinsed and dried after contact. Check individual manufacturer’s instructions regarding length of time solution remains effective.
- All items used during a spillage must be disposed of, or decontaminated appropriately. The Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) and product sheets should also be referred to in order to ensure safe management of spillages e.g., disinfectants being used in accordance with manufacturer’s instructions for reconstitution, storage, contact times and expiry dates.

8.11 Aseptic Technique

Aseptic technique is the practice of carrying out a procedure in such a way that minimises the risk of introducing contamination by microorganisms in sufficient quantity to cause infection to susceptible sites by hands, surfaces and or equipment.

Use of aseptic technique with open wounds is vital to ensure successful healing of wounds and the subsequent health of the patient. Aseptic techniques are possible and can be achieved in typical hospital and community settings.

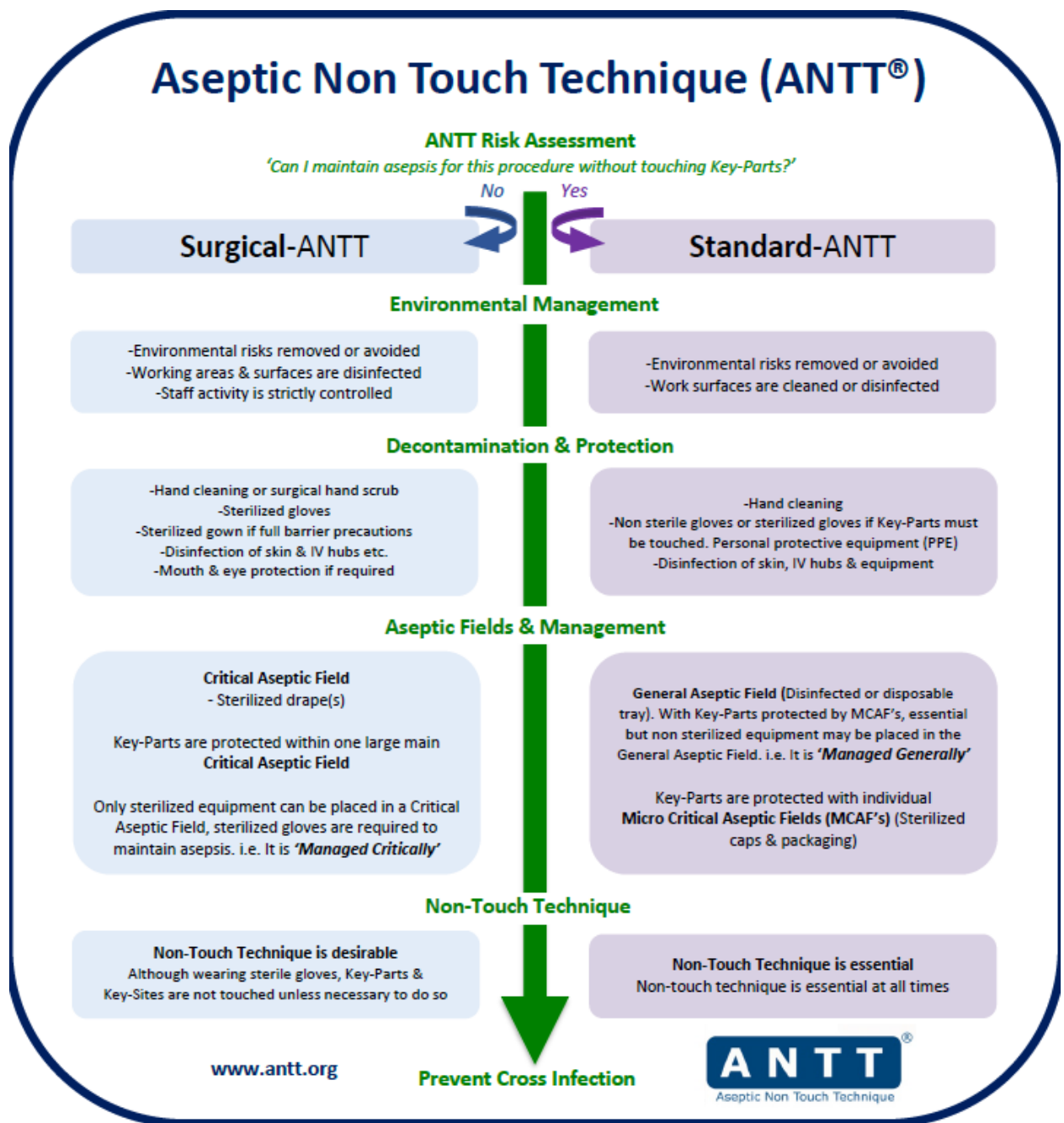
ANTT (Aseptic Non Touch Technique) ANTT is a clinical practice framework for all invasive procedures. It aims to prevent contamination of Key-Parts and Key-Sites by pathogenic organisms, in sufficient quantity to cause infection. In ANTT, asepsis is ensured by identifying and protecting Key-Parts and Key-Sites by hand hygiene, non-touch technique, sterile equipment and the use of aseptic fields. Inactive Key-Parts require disinfecting to render them aseptic prior to use (Rowley et al 2010). Refer to 8.11.1 for the ANTT Approach.

There are three types of Aseptic Technique:

Sterile Aseptic Technique: Hospital Setting	Surgical Aseptic Technique: Community Setting	Standard Aseptic Technique: Community Setting
Aims to achieve total absence of microorganisms. This technique is employed in a hospital operating suite.	Achieves a safe level of asepsis for procedures that are technically complex, over extended periods of time and can often have large/open/multiple key sites e.g. Oral surgery in some Community settings	Achieves a safe level of asepsis for technically simple and short procedures. These procedures involve few key parts/sites e.g. dental treatment in the community setting (including where IV Sedation is practised)

Table 7: Types of Aseptic Technique

8.11.1 Figure 1: The ANTT Approach



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SOP 9 Appropriate Use of Single-Use Items

It is very difficult and sometimes impossible to decontaminate some instruments and devices. Therefore in such circumstances, disposable devices must be used, e.g. disposable suction tips. These single use instruments are marked with the universal single use symbol which indicates that the item is intended for one use or for use on a single patient during a single procedure.

The responsibility for classifying a device as single use lies with the manufacturer.



Figure 2: Single Use Item Symbol

9.1 Dental instruments and dental/medical devices which are licensed as 'single –use' items must not be reused. If in doubt check with the manufacturer of the product. Technical sheets should be available.

9.2 Single use items include the following dental items, which must be disposed of after a single use in the dental clinic. (NB: this is not an exhaustive list);

- Local anaesthetic needles and cartridges
- Scalpel blades
- Saliva ejectors
- Single use 3/1 tips
- Steel burs
- Diamond burs where single use indicated
- Matrix bands
- Endodontic files, reamers, spiral fillers and barbed broaches etc.
- Impression trays (disposable)
- Prophylaxis brushes and cups
- Disposable examination kits
- Orthodontic brackets, archwires and auxiliaries, molar bands, temporary anchorage devices.

SOP 10 Decontamination of Reusable Invasive Medical Devices (RIMD)

The “decontamination” process is a combination of procedures that include transportation, cleaning, disinfection and/ or sterilisation used to render a re-usable invasive medical device safe for further episodes of use. The most important way of reducing the risk of transmission of infectious agents is by ensuring that the decontamination of all instruments is as effective as possible. Decontamination is performed in a suitable location, ideally external to the dental surgery. Where this is not possible and instruments have to be decontaminated in the dental surgery refer to Appendix IX.

- Cleaning is the process that physically removes soiling including large numbers of microorganisms and the organic material on which they thrive.
- Disinfection describes a process that eliminates many or all pathogenic microorganisms on inanimate objects, with the exception of bacterial spores.
- Sterilisation refers to a physical or chemical process that completely kills or destroys all forms of viable microorganisms from an object, including spores. Sterility is an absolute condition - an item is either sterile or not sterile.

Appropriate PPE must be worn at all stages of the decontamination process. New reusable instruments should be decontaminated prior to first use.

Acquisition of RIMD: When procuring RIMD, it is essential that it is compatible with HSE standards and recommended practices.

All reusable invasive medical devices must be CE Marked. 

The Decontamination Lifecycle

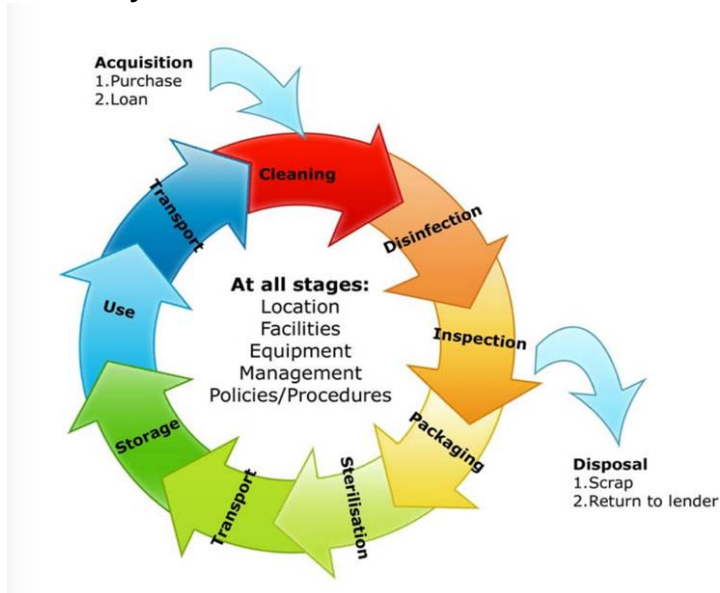


Figure 3: The lifecycle diagram used in this document is © Crown Copyright. Source - Department of Health, United Kingdom

10.1 Use and Transportation of RIMD

- Remove instruments to the decontamination area in a safe leak proof transport box, where appropriate, having ensured clinicians have disposed of single use sharps. The transport box should be colour coded or identifiable as containing contaminated dental RIMD.
- It is essential not to contaminate the outer part of the transport box.
- The box must not be overfilled.
- The transport box needs to be cleaned using a dual detergent/disinfectant wipe.

10.2 Cleaning of RIMD

- **Cleaning must precede all disinfection and sterilisation processes. If an instrument is not clean it cannot be sterilised. It must involve the removal of organic and inorganic contamination. Good working practice means that debris must be removed by the clinician/dental nurse at the point of use (e.g. dental cement) from RIMD with a single handed technique.**
- **Washer disinfectors are the preferred method for cleaning/disinfecting RIMD. The use of washer disinfectors will minimise handling of sharp instruments and the risk of sharps injury.**
- *In the absence of a washer-disinfector the next most appropriate method of cleaning of RIMD is in an ultrasonic cleaner. An Ultrasonic Cleaner will not disinfect medical devices and thus devices pre cleaned in an Ultrasonic Cleaner will still be contaminated and present a sharps injury risk.*
- *Each stage of the cleaning process must be reviewed and signed off before release to next stage of decontamination process. Use manual sign offs to indicate that instruments have gone through sonic cleaning where print outs are not available to sign.*
- *Instruments must not be allowed to dry out prior to cleaning. If instruments cannot be decontaminated within 30 minutes of use, they should be kept moist. This can be achieved by using a non linting absorbent pad/gauze and a few mls of water or enzymatic cleaner (no free liquid) in a transport container or by using a product specifically intended for this purpose and in accordance with manufacturer instructions. The container needs to be a secure box labelled "contaminated".*
- *If instruments cannot be decontaminated within 24 hours, they should be cleaned in the Washer Disinfector, bagged, clearly identified as contaminated and sterilised at the earliest opportunity.*
- *If instruments cannot be decontaminated within 24 hours, and no Washer Disinfector is available, instruments should be cleaned in the Ultrasonic Cleaner, dried, bagged, clearly identified as contaminated and sterilised at the earliest opportunity.*
- *Duck bags are also available, and must be used according to manufacturer's instructions.*

10.2.1 Procedure: Cleaning of instruments in the ultrasonic cleaner

- Ultrasonic Cleaner must conform to: EN 15883-Part 1, 2 and 5.
- Staff must be trained in the correct use of the ultrasonic cleaning equipment.
- The ultrasonic cleaner is used for the removal of surface debris, prior to autoclaving. As stated previously, an ultrasonic cleaner will not disinfect medical devices and thus devices pre cleaned in an ultrasonic cleaner will still be contaminated and present a sharps injury risk to the user.
- Heavily soiled instruments when contained in the basket of the ultrasonic cleaner should be immersed in water and not held under running water in the decontamination sink. This is done prior to automated cleaning so as to avoid splashing. It is advisable to remove blood from surgical instruments as quickly as possible as it is more difficult to remove when congealed.
- Fill the ultrasonic cleaner with the correct dilution of recommended enzymatic solution according to manufacturer's instruction.
- The cleaning liquid must be degassed for 5 minutes prior to use and each time the solution is changed. If there is no specific degas function then run a 5 minute cycle with no instrument load ensuring manufacturer's instructions are followed.
- All suitable RIMD must be immersed in the cleaning solution.
- The ultrasonic cleaner must not be overloaded.
- Hand pieces and ultrasonic scalers must not be placed in the ultrasonic cleaner.
- The ultrasonic cleaner must be located close to the instrument rinsing sink to facilitate filling and emptying.
- The ultrasonic cleaning cycle must **not** be less than 5 minutes.
- Do not add instruments to the ultrasonic cleaner when a cycle is in progress.
- Do not interrupt the cycle once started.
- At the end of the ultrasonic cycle rinse the instruments under running water whilst contained in the ultrasonic cleaner basket. At this stage, if visible debris is noticed on the instruments they should be returned to the ultrasonic cleaner for reprocessing. If visible debris is not removed it will interfere with microbial inactivation and compromise the sterilisation process.
- Dry the instruments with disposable, non-linting paper towels.
- Change liquid solution at least every 4 hours or more frequently if contaminated. Document the change of solution.
- Drain, clean and dry the ultrasonic cleaner at the end of the day.
- The Ultrasonic Cleaner must be commissioned prior to initial use or undergo local acceptance test. Only when all the above tests have been passed should the Ultrasonic Cleaner be accepted for use in the decontamination process. These results should be used as a benchmark for on-going comparison.
- The Ultrasonic Cleaner must be validated at least annually to confirm functionality using the standards EN 15883.

10.2.2 Procedure: Testing Ultrasonic Cleaner

Minimum testing required for safe use of an Ultrasonic Cleaner in Primary Care

Performed by dental staff

Initial tests prior to first use (user)

- A foil test must be done using manufacturer recommended detergent and this must show suitable activity
- Cavitation functions must be validated by wand test/sonocheck
- A load checker test must be performed to test cleaning efficacy

Only when all the above tests have been passed should the Ultrasonic Cleaner be accepted for use in the decontamination process. These results should be used as a benchmark for on-going comparison.

Daily checks (user)

1. Ultrasonic is emptied and dried overnight.
2. Remove and clean strainers and filters etc.

Weekly tests (user)

1. Only routine testing will detect ultrasonic performance deterioration and prevent ineffective ultrasonic cleaning. A load checker test must be performed weekly to test cleaning efficacy. It is performed under normal conditions with no instrument load. A record of date, Serial No. of Ultrasonic Cleaner, pass/fail indication, and signature is logged. Once pass/fail is documented, dispose of indicator in sharps container.

Quarterly tests (user)

1. Protein residue test
2. Cavitation functions should be validated quarterly by wand or foil or sono test tube.

Performed by independent validator and service engineer

Yearly service

Yearly validation tests (EN 15883)

1. Yearly safety checks
2. Automatic control tests (if automatic cycle control is fitted)
3. Cleaning efficacy test
4. Test for ultrasonic activity

Table 8: Procedure for testing ultrasonic cleaner

Refer to Appendix X Testing of RIMD equipment – Glossary

Refer to Appendix XI for an Ultrasonic Cleaner Tracing and Test Sheet

10.3 Cleaning and Disinfecting of RIMD

10.3.1 Procedure: Cleaning of instruments in Washer Disinfector

- Washer Disinfector must conform to: EN 15883- Part 1, 2 and 5.
- Staff members must be trained in its correct use by the supplier.
- Washer disinfectors provide a verifiable cleaning/disinfection process.
- A data-logger/printer or network cable needs to be supplied to ensure each cycle is recorded, reviewed and signed off by the user prior to inspection and packaging.
- Always operate according to manufacturer's instructions.
- Use a recommended enzymatic cleaner and ensure appropriate chemical storage.
- Daily checks of arms and filters – Refer to 10.3.2. Ensure manufacturer's instructions are followed in relation to filter changes to prevent build-up of debris.
- Ensure instruments are placed appropriately in baskets or tray systems, with no overloading or over lapping of instruments. Small items need to be placed in appropriate holders.
- Dental handpieces must be cleaned, decontaminated and sterilised (fully decontaminated) after every patient.
- Dental handpieces are cleaned in the washer disinfector and adaptors are required to be fitted to machine for this purpose. Where all adaptors are not occupied during the cycle, the empty adaptors may need to be capped. Manufacturer's instructions should be followed.

Handpiece cleaning and disinfection with washer disinfector:	Handpiece cleaning without washer disinfector:
<ul style="list-style-type: none"> ○ Handpieces should be cleaned and disinfected after use in a washer disinfector equipped with adaptors that facilitate irrigation of the internal lumen and channels. ○ Automatic handpiece oilers and thermal washer- disinfectors are ideal for use, as they ensure internal cleaning and lubrication of the handpiece prior to sterilisation in an autoclave. ○ Follow the manufacturer's instructions in relation to lubricating the handpiece. ○ Following automated or manual cleaning and oiling, the handpiece is placed in appropriate autoclave bag and the bag carefully sealed prior to sterilisation in the autoclave. 	<ul style="list-style-type: none"> ○ Where a washer disinfector is not available, clean the outside of the handpiece with a combined detergent/disinfectant wipe. Do not clean or immerse the handpiece in disinfectant. Do not place in the ultrasonic cleaner. ○ Follow the manufacturer's instructions in relation to lubricating the handpiece. ○ Following automated or manual cleaning and oiling, the handpiece is placed in an appropriate autoclave bag and the bag carefully sealed before sterilisation. ○ In an out of hours situation, when it may not be possible to complete the decontamination process, follow the instructions above. However, once the handpiece has been bagged, it should be quarantined in a designated transport box labelled "contaminated" and sterilised at earliest opportunity.

Table 9: Dental handpiece cleaning and disinfection

- On completion of the washer-disinfector cycle ensure that temperature has reached 90°C with a holding time of 1 minute.
- Documentation is required for every washer-disinfector cycle and should contain the following:
 - Washer-disinfector identification number.
 - Cycle number.
 - Type of cycle used.
 - Date and time of start of cycle.
 - Critical parameters for the specific washer-disinfector cycle.
 - Results of washer-disinfector process.
 - Signature of designated, appropriate personnel who have been trained in decontamination practices, confirming whether or not the process cycle was within recommended parameters.
 - Any notes or observation for the process cycle.
- A weekly load checker test must be performed to test the efficacy of instrument cleaning and a record kept of the test result. See 10.3.2 for further information.
- Instruments must be inspected following washer-disinfector cycle prior to packaging under task lighting.
- If visible debris is noted on the disinfected instruments, reject the load.
 - Check that the instruments were placed appropriately in baskets or tray systems, with no overloading or over lapping of instruments. Check enzymatic detergent levels. Check correct cycle was chosen. If errors were noted, correct same and repeat the cycle.
 - If the load failed because of residual cement on instruments, alert clinical staff to the fact cement had not been cleaned off the instruments at the chair side.
 - Put the contaminated instruments through the Ultrasonic Cleaner if available, or manually clean the instruments (Refer to Appendix XIV)
 - If after repeat cycle and still no errors were noted, do not use the WD and report to Line Manager and Service Engineer. Put appropriate signage on the washer disinfector to alert staff that it is out of service.
- Washer disinfectors must be commissioned, serviced annually and be subjected to annual validation by a competent person. Reports must be kept of all validation, servicing and repairs to comply with EN15883.
- All records should be maintained for a minimum period of 11 years or for the lifespan of the washer disinfector if this is longer.

10.3.2 Procedure: Testing Washer Disinfector

Minimum testing required for safe use of a Washer Disinfector in Primary Care

Performed by dental staff

Daily checks (user)

1. Check spray arm rotation for free movement and remove and clean strainers and filters etc.
2. Check spray nozzles for blockage (paying particular attention to those fitted to carriages for instruments)

Weekly tests (user)

1. Process challenge device – load check test
2. Protein residue test

Performed by independent validator and service engineer

Yearly service

Yearly validation tests (EN 15883)

1. Yearly safety checks
2. Automatic control tests
3. Verification of calibration of WD instruments
4. Chemical additive dosing tests for reproducibility and low level detection
5. Cleaning efficacy test
6. Thermometric test for thermal disinfection

Table 10: Procedure for testing washer disinfector

(Note: This is the minimum set of tests required to establish continued performance of the Washer Disinfector to specification). Validation of decontamination reprocessing equipment must be independently measured using dataloggers equipment that has been calibrated and measured to source documents.

Refer to Appendix X Testing of RIMD equipment – Glossary

Refer to Appendix XII for a Sample Washer Disinfector Tracing and Test Sheet

10.4 Inspection and packaging of RIMD

10.4.1 Inspection of instruments

- Inspect all instruments under task lighting prior to packing to ensure that they are clean, intact and that there are no chips, worn spots, flaking or other damage or visible contaminants.
- If the RIMD does not pass visual inspection, it must be returned for a repeat cleaning cycle.

10.4.2 Packaging of instruments

- After the cleaning and inspection process is complete, the RIMD should be bagged/ wrapped. Bagging/pouches allows the RIMD to be protected by an effective bio-barrier during storage.
- Seal the bags carefully according to manufacturer's instructions along the adhesive strip. A selection of bag sizes should be available. Autoclave bags must be available in the contaminated zone.
- Only when the load is ready to be put into the autoclave, does dental staff member label the pouches/packs and commence the cycle using a labelling gun specific to each autoclave
- The label should record the date, cycle number and autoclave serial number. The autoclave serial number is pre-set on the labelling gun. Therefore, a labelling gun should not be used with a different autoclave without re-setting the autoclave number on the labelling gun. The labelling gun should be kept in the contaminated zone in the surgery/LDU.
- The label must be legible – if not, the ink cartridge must be changed. A corresponding label must be placed on instrument track/trace record sheet.

10.4.3 Loading of steriliser

- Items are loaded within the boundaries of the chamber so that they do not touch the chamber walls.
- Items packed in flexible packaging materials (pouches) can be loaded on edge to edge with paper against laminate, or flat on the tray. The directional placement of the autoclave pouch on the tray should be according to manufacturer's instructions i.e. paper-side down or laminate down.
- Load trays loosely to capacity.
- Closed non-perforated containers do not allow steam penetration and are not suitable for use.

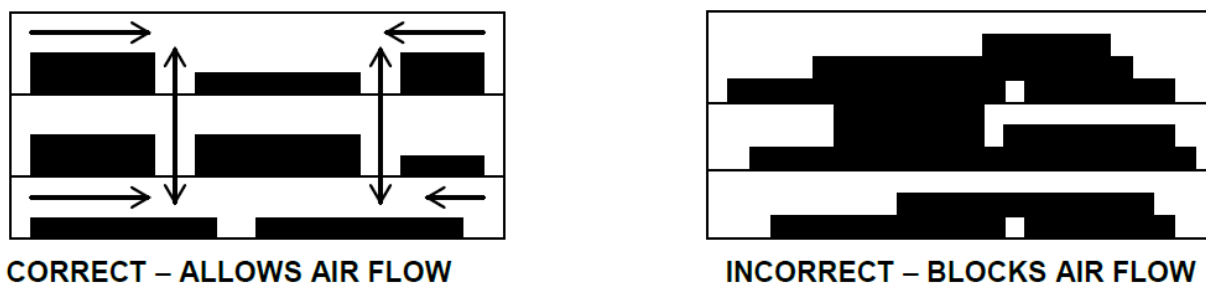


Figure 4: Loading of steriliser

- The above diagram illustrates the correct procedure for loading of items in the steriliser.

10.5 Sterilisation of RIMD

A Class B vacuum autoclave must be used to sterilise dental RIMD. It is important that systems are in place to record (track) the sterilising stage of the decontamination cycle of RIMD and to be able to link these RIMD with patients on whom they have been used (trace). The steriliser must be commissioned to EN 13060 and EN 17665, is subject to a planned preventative maintenance programme and annual re-validation

10.5.1 Sterilisation of RIMD

- Vacuum steam sterilisation is the most practical method for sterilising reusable invasive medical devices in dental clinics. It is rapid, non-toxic and can effectively destroy microorganisms and thus is the method of choice for sterilising dental RIMD.
- Do not overload the autoclave. Space out bags of instruments, placing the bags on their side in a rack or “clear side up” if on a tray.
- The Universal Program 134⁰C wrapped instruments cycle is the only cycle that must be used for dental instruments in a Class B autoclave.
- Press start on the cycle to commence the process.
- On completion of the cycle, staff must validate that the cycle reached the required parameters for the required time as follows:
- **The printout for each cycle must be examined. The dental staff member must highlight the cycle number, the temperature reached and the time temperature held i.e. 134⁰C for a minimum of 3 minutes. The instrument track/trace record sheet (Appendix XIII) must be completed and signed.**
- The printout must be legible and attached to the instrument track/trace record sheet – if not legible change the print ribbon of the printer.
- Where autoclave cycle data is recorded in electronic format, cycle parameters must be checked and signed off before instruments are used/ placed in storage.
- Provided that the cycle has passed, remove instruments and store in a clean, dry location.
- They may be stored **for 12 months if packaging is intact.**

- Before instruments are removed from the autoclave bag for patient use, the bag must be examined for damage and checked that the colour indicator has changed.
- If the bag is damaged or if the colour indicator has not changed, the instruments must be re-sterilised before use and the reasons for the failure investigated.
- If the bag is wet, staff should repack and reprocess the wet items. Staff should report issue, arrange a service call out and ideally take note of the following:
 - What time of the day are the wet loads occurring? (time of day, second cycle of day etc.)
 - Where in chamber was the affected pack? (top/middle/bottom/front rear etc.)
 - Was the load a typical load or was it light/heavy/mixed?
 - Photograph of full load, showing pack position
 - Photograph of pack showing moisture
- When an instrument pack is used the details from the label must be attached to/entered on to the patients chart/record (trace).
- At the end of the day the autoclave must be drained if not connected to a continuous water drain. Autoclaves are pressure vessels and must be switched off before leaving the clinic at the end of the day.

Sterilisation of handpieces prior to sending for repair/maintenance:

- If a handpiece is to be sent for repair/ service or maintenance, it must be cleaned and sterilised. A completed Decontamination Record form must be completed and sent with the handpiece.
- Remember to surface disinfect air motor and/or coupling after each use with a combined wipe. Some air motors are autoclavable and there will be a symbol on the motor to indicate this or check with the supplier. Most couplings are not autoclavable. Follow manufacturer guidelines.

10.5.2 Testing of Sterilisers

Sterilisation temperature, steam pressure and hold time

Minimum Sterilisation Temperature	Corresponding Steam Pressure	Maximising Permissible Temperature	Minimum Sterilisation Hold Time
134°C	2.30 Bar gauge	137°C	3 Minutes

Weekly and Annual Testing of Autoclave	
Performed by dental staff	Class B Steam Steriliser
Daily Checks	
Check door seals and locks	Yes
Steam penetration test (Refer to 10.5.2 (ii))	Yes
Cycle record and tracing sheet (Appendix XIII)	Yes
Weekly checks/tests	
1. Air leakage test i.e. Vacuum test (Refer to 10.5.2(i))	Yes
Performed by independent validator and service engineers	
Annual Service	Yes
Annual Validation Tests for Sterilisers	Yes
1. Air leakage test (automatic)	Yes
2. Air leakage test (manual) (temperature and pressure sensors)	Yes
3. Automatic control test	Yes
4. Verification of calibration of steriliser instruments	Yes
5. Thermometric tests for a full load	Yes
6. Porous load dryness test	Yes
7. Test for performance re-qualification as required by the user	Yes
8. Air leakage test (automatic) (sensors removed)	Yes
9. Steam penetration test	Yes
10. Insurance company pressure test (18 mths)	Yes

Table 11: Procedure for testing autoclave

Annual testing and servicing is performed by a qualified engineer.

(Note: Instruments used in the validation of decontamination equipment must be independently calibrated to published standards)

Refer to Appendix XIII for a Sample Autoclave Tracing and Test Sheet

10.5.2 (i) Vacuum/Air Leakage test

- **A vacuum test must be done weekly on a cold, empty autoclave on the first day of the week when the clinic is in use.**
- This must be the first cycle of the day.
- Close autoclave door and select Vacuum Test. Press start.
- At the end of the cycle, highlight the leak rate, and cycle number.
- The leak rate must be at or below 1.3mbar.
- Attach a label to the track & trace sheet showing the cycle number, date and autoclave number. Indicate pass/fail of cycle and sign same.
- If the Vacuum test fails, run the cycle again as per manufacturer's instructions.
- If it fails again, do not use autoclave, inform a senior member of staff.
- Put appropriate signage on autoclave to alert staff that it is temporarily out of service.
- Report the problem to senior member of staff and inform a Dental Engineer who will arrange a call-out, check the machine and inform when machine can be released back into service.
- Write up details of the fault in the 'record of autoclave faults/repairs' book held with each autoclave.

10.5.2 (ii) Steam Penetration Test e.g. Helix Test or Bowie Dick Test

- A steam penetration test must be done daily to test the steam penetration into a lumened instrument e.g. handpiece. The Helix test is recommended unless the Bowie Dick test is specified by autoclave manufacturer (note 3).
- **This is the first cycle each day (when a vacuum test is due, the Helix test should be done after the vacuum test). If the steriliser is used continuously then the test cycle should be performed at the same time each day.**
- For autoclaves not connected to water supply, first put RO/Sterile/Purified water into the water reservoir. Place a loaded challenge device (Helix Device or Bowie-Dick Device) on a tray in an otherwise empty autoclave.
- Ensure there is a paper insert in the challenge device and that it is inserted correctly i.e. folded once and inserted into the device, closed end first.
- The device should not touch the internal walls of the autoclave.
- Close door and select Helix/ Bowie Dick cycle. Press Start.
- When cycle is complete check parameters reached i.e. Temperature 134⁰C held for a minimum of 3 minutes.
- Highlight on printout the temperature reached, the hold time and the cycle number.
- Remove challenge device and confirm that there has been a complete colour change of paper insert.
- Attach the insert to the dated diary sheet. Indicate pass/fail of cycle and sign same.
- Attach a print out of successful steam penetration test to the track & trace log (Appendix XIII) showing the cycle number, date and autoclave number.
- When the Helix test kit is used, follow manufacturer's instructions regarding when a new device must be purchased. The device must not be used if damaged by wear and tear.

- If the steam penetration test fails, repeat the process as per manufacturer's instructions. If the test fails again, do not use the autoclave, inform a senior staff member. Put appropriate signage on autoclave to alert staff that it is temporarily out of service. Report the problem to senior member of staff and inform a Dental Engineer who will arrange a call-out, check the machine and inform when machine can be released back into service.
- Write up details of the fault in the 'record of autoclave faults/repairs' book held with each autoclave

Note 1: Manufacturers of Class B Sterilisers will indicate if a warm up cycle is needed prior to running daily tests

Note 2: Manufacturers will specify a specific cycle to be used for the Steam Penetration Test e.g. a Bowie Dick cycle. This cycle may have a reduced drying time and/or specific sterilisation holding time

Note 3: Manufacturers of the Class B Steriliser will specify whether it is a Helix Test or Bowie Dick Test that is needed daily.

Refer to Appendix X(i) for further information on Process Challenge Device and Chemical Indicators.

10.5.2 (iii) Autoclaves maintenance records

- A separate folder/log book containing the test sheets must be kept for each autoclave.
- All maintenance and service records associated with the individual autoclave must be kept in its individual folder/log book.
- If an autoclave is moved to a different location, then its individual folder/log book etc. must go with it.

10.5.2 (iv) Care of the autoclave

- Autoclaves can become contaminated with endotoxins, particles, oil and other materials that will compromise their proper functioning. It is therefore very important to keep reservoirs and sterilisation chambers clean. In non-self-draining autoclaves, drain both feed and waste reservoirs at the end of the day. It is essential that the tubing and strainers are cleaned regularly in non-self-draining autoclaves. If these are not cleaned regularly they can become contaminated.
- Only sterile or other appropriate quality water (e.g. reverse osmosis (RO) or distilled water) must be used in autoclaves.

The following steps will help to minimise contamination of the autoclave, improving the decontamination process:

- Make sure that all instruments are clean and dry before placing in the autoclave.
- Lubricate handpieces in accordance with the manufacturer's instructions and place in a bag before putting them in the autoclave. This will reduce oil contamination of the autoclave.
- Drain the autoclave at the end of the day if not connected to a continuous water supply or if the equipment is not going to be used again that day.

There are occasions when a steriliser will need to be evaluated outside of the annual requirement. Changes to be considered (if applicable) shall include:

- Replacement of a process control part which could cause a process parameter to change (e.g. replacement of a drain probe or replacement of a Central Processing Unit card);
 - Replacement of a part which could cause an increase in leakage into the steriliser chamber;
 - Variation of homogeneity in the steriliser chamber;
 - New or modified software and/or hardware;
 - Any change to a process parameter or
 - Any change of packaging and/or packaging procedure; load configuration
-
- **Autoclaves must be serviced annually and be subjected to annual validation and pressure checks by a competent person. They must also be subject to pressure testing every 18 months. Reports must be kept of all validation, servicing and repairs of autoclaves. The use of an authorised engineer is recommended if there are any concerns with validation reports. Click here for a list of authorised engineers** <https://www.iheem.org.uk/IHEEM-Authorising-Engineer-Decontamination-Register>

10.5.3 Unloading of sterilisers

- On completion of the cycle, the load is removed from the steriliser and a visual inspection made to ascertain that the load is dry, and that sterilisation indicators have made the required colour change.
- Packaging is checked to ensure it is intact. Items in punctured packaging must be repackaged and re-sterilised.
- Check physical indicator data (display, data card or printout) at the completion of cycle to ascertain the required parameters have been met (known as parametric release). Highlight the parameters, sign the printout and file it accordingly.
- Declaring a product sterile, based on the records demonstrating that the process parameters have been met is called parametric release.
- Directly after the sterilising process, items are vulnerable to recontamination by moisture or improper handling.

10.6 Storage of sterilised RIMD

- All decontaminated RIMD must be stored in such a way that their integrity and sterile state is maintained. Dental RIMD packs should be stored in a clean, dry environment and protected from sharp objects that may damage the packaging.
- They must be stored in a way that maintains the integrity of the packaging bag. Packs should also be rotated and subject to minimal handling before use.
- They may be stored in the surgery in a dedicated drawer or best practice recommends storage in a dedicated clean store or a storage area within the clean room of the decontamination rooms.
- Bags should be inspected in the surgery before opening to ensure they have not been compromised (damaged, wet or open), are correctly labelled, are in date (12 months) and chemical indicator is the correct colour . If in doubt re-clean, repack and re-sterilise.

Refer to the HSE Standards and Recommended Practices for Dental Services (Local Decontamination Unit) for further information. Access through links:

<https://www.hse.ie/eng/about/who/qid/nationalsafetyprogrammes/decontamination/guidance-for-application-of-standards-and-recommended-practices-in-primary-care-local-decontamination-units.pdf>

<https://www.hse.ie/eng/about/who/qid/nationalsafetyprogrammes/decontamination/standards%20for%20dental.pdf>

SOP 11 Cleaning and disinfection of patient care equipment and domiciliary care

11.1 Procedures for disinfection when taking and processing X-ray films

11.1.1 Taking an x-ray:

- Ensure that the radiographic film/intra-oral sensor to be used is covered with a protective barrier. Those films that do not come with a manufacturer's infection control barrier must be covered with a suitable barrier.
- All equipment must be prepared in advance with suitable barriers. These barriers must be changed after each patient. X-ray holders must be reprocessed after each patient
- Staff should receive training on how to clean and disinfect as appropriate all parts of the x-ray machines used in the clinic according to the manufacturer's instructions. This is particularly important as new complex equipment such as cone beam technology has been introduced into some clinics.

Areas of potential contamination to be noted are:

Intraoral x-ray equipment	Extra-oral x-ray equipment:
<ul style="list-style-type: none"> • The cone of the x-ray machine. • The back of the head of the machine. • A point on the arm of the machine and any other areas used to position equipment. • The hand control. 	<ul style="list-style-type: none"> a) The bite fork b) The hand control c) Head supports d) Ear rods e) Nose bar

Table 12: Areas of potential contamination on x-ray equipment

- After use, these areas should be decontaminated using a combined detergent/disinfectant wipe.
- If used, the thyroid collar should be cleaned and disinfected with a combined detergent/disinfectant wipe.
- A sterile x-ray holder must be used for each patient and this must be decontaminated and sterilised after each patient as per HSE decontamination protocols.
- Clean remainder of machine as per manufacturer instructions.

11.1.2 Processing an x-ray film:

- The film hygiene barriers must be removed outside of the processor and disposed of as healthcare risk waste.
- X-ray developer and fixer must be changed regularly and log of changes kept. The used developer and fixer must be stored safely and collected by an authorised waste disposal company.
- Do not mix developer and fixer fluid in the same waste container.
- Intra-oral digital sensors/plates should be cleaned and disinfected as per the manufacturer instructions (do not use a combined wipe).
- The uncontaminated film is then ready for processing.

11.1.3 Taking an OPG:

- The mouth prop must be either covered with a suitable single use barrier or reprocessed between patients. Follow manufacturer's instructions.

11.2 Mixing surfaces including glass slabs

- Glass slabs and dappen dishes do not survive well with sterilising, they can chip and break. Single use dappen dishes and paper mixing pads should be used where possible.
- Where glass slabs are used, an autoclaved slab must be used for each patient. This must be cleaned and autoclaved after use. Removal of excess cement at the point of use is essential to facilitate the cleaning process.
- Mixing spatulas must be reprocessed after each patient.
- Where paper pads are used, the material can be mixed on the pad, the sheet must then be removed, presenting the material to the operator on a single sheet and disposed of after use.

11.3 Amalgam carrier/dappen dishes

- An autoclaved amalgam carrier must be used for each patient. Amalgam carriers should be reprocessed in accordance with manufacturer's instructions.
- A disposable dappen dish must be used for each patient.
- All excess amalgam must be removed from both the amalgam carrier and the dappen dish and disposed of in a designated amalgam waste container.
- The dappen dish and the amalgam capsule must be disposed of in a labelled designated amalgam waste container.
- The amalgam carrier must be cleaned in the washer disinfectant/ ultrasonic cleaner prior to sterilisation.

11.4 Impressions, trays and laboratory work disinfection

- All impressions and all stages of laboratory work and dentures must be cleaned and disinfected before being sent to the laboratory and on returning from the laboratory prior to placing in the patient's mouth.
- Separate disinfection baths (solution 1:10 dilution of sodium hypochlorite solution) should be used for incoming and outgoing laboratory work.
- All impressions must be rinsed with cold water to remove saliva and blood. Do not splash excessively as droplet splatter may carry microorganisms.
- Any heat tolerant items used for laboratory work e.g. face-bows should be cleaned, decontaminated and sterilised after use on a patient.
- A Disinfection Record form must be completed for each patient and attached to lab-work docket. Refer to Appendix XV for Sample Disinfection Record

11.4.1 Zinc oxide eugenol, silicone and elastomeric impressions:

- Disinfect by immersion in sodium hypochlorite solution (1:10 dilution) for at least 10 and not more than 20 minutes. Solution should be made up fresh for each session and emptied at the end of the clinical session. Leave bath to dry.
- Do not splash excessively as droplet splatter may carry microorganisms.
- Rinse thoroughly and gently agitate to remove any residual disinfectant.
- Place in the laboratory bag for collection. A completed disinfection form must be attached to the bag.

11.4.2 Alginate impressions:

- Rinse the impression carefully under running water to remove debris and place in sodium hypochlorite solution (1:10 dilution) for 10 minutes.
- Rinse the impression again under running water, wrap in wet gauze/paper towel and bag. A completed Decontamination Record form must be attached to the bag. Do not staple through the body of the bag.

11.4.3 Impression trays:

- Single use disposable trays must not be reused.

11.4.4 Metal frame dentures/removable orthodontic appliance:

- Place the metal frame denture/appliance in sodium hypochlorite (1:10 dilution) for 2-3 minutes (but no longer) to avoid metal corrosion
- Rinse thoroughly with water and agitate to remove residual disinfectant.
- Place in the laboratory bag for collection and attach a completed Decontamination Record form to work docket.

11.4.5 Incoming laboratory appliances (including orthodontic appliances)

- Incoming lab made appliances/dentures must be disinfected before delivery to patient by immersing in hypochlorite solution (1:10 dilution) for 2-3 minutes and rinsed thoroughly with water afterwards. A separate disinfection bath should be used for outgoing and incoming laboratory work.
- Trimming of acrylic orthodontic appliances or dentures that have been worn already by the patient: Prior to trimming, disinfect appliance in 1:10 solution for 2-3 minutes and rinse thoroughly with water afterwards. Then trimming can proceed.

11.4.6 Stone working models

- Avoid contact between the stone model and contaminated appliances.
- If contact is unavoidable, the working stone model should be covered with a suitable barrier.

11.4.7 Clinical Photography

- Remove gloves and carry out hand hygiene before handling clinical cameras.
- A sterilised set of cheek retractors, mouth mirrors and retraction forks should be used for each patient when taking clinical photos.
- To prevent fogging of the mouth mirror, hold the mirror under running warm water for a few seconds and dry with paper towel, before placing into the patient's mouth.
- Cheek retractors, mouth mirrors and bite forks are sent for decontamination and sterilisation after each patient.

11.5 Domiciliary care and school screening

- In providing care in these settings standard precautions will apply. These include wearing gloves and other protective clothing and performing hand hygiene techniques.
- Dental staff will need to carry all necessary equipment with them. Instruments and materials must be carried in a sealed clean container to prevent damage or spill.
- After use the instruments must be placed in a rigid container within another rigid sealed container (marked contaminated) for transport back to the surgery for cleaning and reprocessing. Cement should be wiped/removed and instruments should be kept moist or sprayed with enzymatic foam to prevent hardening of debris before transport back to the clinic.
- Waste should be segregated at the point of use. General waste should be disposed of on-site. Contaminated waste must be placed in designated containers and transported back to the clinic for appropriate disposal.

SOP 12 Care of Dental Suction Systems

Recent research (Boyle et al., 2015) has shown that conventional aspiration disinfection without disassembly of the suction handpieces (i.e. the part which is attached to the suction tubing/holds the disposable suction tips/regulates the suction volume), results in inadequate cleaning and disinfection of the suction system components. This inadequate decontamination leaves significant reservoirs of microbial contamination in suction hoses, filters and suction handpieces. Thus, there is a risk of cross-contamination and cross-infection from dental suction systems.

The risk is greater for immunocompromised as opposed to immunocompetent persons. For these reasons, dental suction systems have to be effectively decontaminated. CDC has confirmed that under certain operating conditions there is a potential risk of backflow due to pressure changes that can cause suctioned fluids to be retracted into the patient's mouth. Furthermore, contamination on the internal surfaces of suction handpieces can leak contaminated fluids to the exterior, especially around suction strength regulator valves. Handling such handpieces can transfer contamination to the gloved hands of dental staff.

Dental healthcare personnel should be aware that backflow might occur in the following situations and take measures to avoid this:

- *When they use a saliva ejector holding the tubing above the patient's head*
- *When patients close their lips and form a seal around the tip of the ejector that creates a partial vacuum*
- *When the saliva ejector is used at the same time as other evacuation (high volume) equipment*

12.1 Procedure for Suction System Cleaning

At the start of the day

- Perform hand hygiene and don gloves.
- The suction tubes should be flushed first thing in the morning with a cup of water to flush the disinfectant through from the previous application.

After each patient

- Remove the disposable aspirating tip and the barrier after use and dispose of in healthcare risk waste.
- All suction tubes, when used, should be flushed after each patient with a cup of water.
- Suction handpieces and suction holder should be wiped with approved surface disinfectant.
- Remove gloves and perform hand hygiene. Place new barriers and aspirating tips

After each session

- Each surgery will need a minimum of 3 sets of suction handpieces to ensure service delivery is unaffected.
- Remove suction handpiece which contain a volume regulator having run approved disinfectant through system, disassemble, clean, decontaminate, sterilise and reassemble as per RIMD.
- Care should be taken to reassemble suction handpieces correctly. Prior to this, suction handpiece o-rings should be inspected and replaced if worn or damaged. Damaged o-rings will cause suction handpieces to leak aspirated fluids. O-rings should be periodically lubricated with an appropriate lubricant (silicone).
- Smooth bore suction handpiece without volume regulators are adequately cleaned by aspiration disinfection or according to manufacturer's instructions.

End of the day

- The tubes should be flushed with an appropriate disinfectant at the end of the day and after any particularly bloody procedure.
- The effectiveness of the suction is greatly enhanced by ensuring filters are clean. Filters should be cleaned at the end of the day after disinfection of the suction system. Suction filters should be cleaned according to manufacturer's instructions. Suction filters should be changed if torn or damaged.
- Amalgam trapped in the amalgam filter must be disposed of appropriately in amalgam waste container.
- It is imperative that solutions containing sodium hypochlorite or any foaming detergents are not used to disinfect suction units.
- Flush approved disinfectant solution through the suction handpiece which contains a volume regulator.
- Disassemble suction adaptors, clean, decontaminate, sterilise and reassemble as per RIMD.
- Care should be taken to reassemble suction handpieces correctly. Prior to this, suction handpiece o-rings should be inspected and replaced if worn or damaged.
- Smooth bore suction handpiece without volume regulators are adequately cleaned by aspiration disinfection or according to manufacturer's instructions.
- Dental suction motors must be turned off when the surgery is not in use.
- Worn, damaged or clogged suction tubing should be replaced.

End of life suction motors

- Staff members need to arrange that the waste amalgam is collected by the appropriate waste disposal company, the unit must be disinfected with the appropriate disinfectant prior to disposal by the supplier.

SOP 13 Care of Dental Unit Waterlines (DUWL) and Water Quality

Rationale

Dental Unit Waterlines (DUWLs) can become contaminated by oral and environmental microorganisms and microbial biofilm and this can be a potential source of cross infection for patients and staff. Biofilm build up is continuous and relentless in DUWLs due to the narrow bore tubing, the temperature in the surgery and the long periods of inactivity, approx. 12 hours in normal working day. These factors all promote bacterial growth. Biofilms once built up are very difficult to remove and penetration of disinfectants into biofilms is problematic. Regular cleaning of DUWLs reduces this hazard and helps DUWLs to deliver good quality output water.

- 1. There are a number of products available for DUWL treatments and these should be used according to manufacturer instructions.*
- 2. Staff should ensure the correct dosage of recommended treatment agent is administered into waterline bottle. Waterline treatment agents should be stored in locked and labelled cupboards and staff trained in their use.*
- 3. Regular disinfection of DUWLs will minimise the potential for Legionella contamination. Dental practitioners should contact the manufacturer of their specific Dental Chair Unit (DCU) model for guidance on products and procedures for waterline disinfection. It is vital when using liquid DUWL treatment agents to use the correct dilution (use a measuring device) and ensure that expiry dates are adhered to for the product. The storage of these and all chemicals must be in a locked and labelled cupboard/room and up-to-date material safety data sheets must be available to staff.*
- 4. Routine microbial monitoring of DUWLs will inform the clinician on the quality of the water output from DUWLs and allow corrective action to be taken when necessary.*

13.1 Legionella risk assessment - Summary Table

As per current Irish National Guidelines legislation (HPSC, 2009) each Dental Department is required to carry out an annual *Legionella* risk assessment. This risk assessment should look at the following criteria outlined in the summary table below:

What are the main water risks in the dental surgery for <i>Legionella</i> and other pathogenic microbes?	These include: <ul style="list-style-type: none"> • Aerosolised water from DUWLs which can be swallowed, inhaled or introduced into open wounds • Water temperature between 20-50°C • Stagnant water, infrequently used waterlines and slow handpiece waterline where water is not routinely used • Build-up of deposits in water (hard water minerals) • Wash hand basins and taps 	
Who is at risk?	High risk	Low risk
	Immuno-compromised, medically compromised individuals and the elderly	Patients and those accompanying them Dental staff and patients
How can we reduce DUWL risks in the surgery? Handpiece lines, scalers and air water syringes including cuspidor	Treating/Disinfecting of DUWL	Duration
	Continuous/intermittent biocides	Use according to manufacturer's instructions
	Periodic shocking of lines after periods of inactivity	As required
	Morning flushing of all DUWLs	1 minute
	Flushing DUWLs between patients	15-30 seconds
	Flushing of DUWLs at end of the session	2 minutes
	Disconnection of unused water lines to prevent back contamination e.g. dental chair units	As required
	DUWL bottle hygiene – in relation to the bottle's lifespan refer to manufacturer's instructions	Weekly
	Testing of DUWLs	Duration
	Validated laboratory procedure for <i>Legionella</i> bacteria testing	Annually – provided results are within acceptable limits
	Aerobic heterotrophic bacteria total viable counts <i>Pseudomonas aeruginosa</i> (If both six monthly tests are negative it does not need to be repeated the following year)	Six monthly - provided results are within acceptable limits Six monthly at the same time as aerobic heterotrophic bacteria total viable counts test

<p>How can we reduce risks from wash hand basins?</p> <p>Ideally hand wash basins should have an offset drain outlet that is not impacted by tap water flow. Only clinical pattern hand wash basins with an offset drain outlet that is not impacted by tap water flow should be used in clinical environments.</p> <p>Sensor taps</p> <p>Although sensor taps may improve hand hygiene, evidence suggests that there is a greater risk of internal surfaces and components of these types of taps becoming contaminated with microorganisms and biofilm in comparison to manually operated taps.</p>	<p>Dental surgery wash hand basins</p> <ul style="list-style-type: none"> • Testing of water temperature should be undertaken bi-annually at the same time aerobic heterotrophic count tests are undertaken. • Cold water should be below, <20°C degrees and hot water greater than > 50°C* degrees. • It is permissible to use mixer taps fitted with a TMV set to 38-40°C to avoid scalding. • Daily cleaning of hand basin and taps <ol style="list-style-type: none"> 1) First step: clean and dry tap(s) 2) Second step: clean sink surface 3) Third step: clean the wastewater outlet <p>Use a combined detergent disinfectant wipe</p>
	<p>Infrequently used surgeries/taps (periods in excess of 1 week)</p> <ul style="list-style-type: none"> • All taps should be flushed on Monday mornings or after several days' inactivity (after holidays). • Run the taps weekly/prior to use • 3 minutes hot and 3 minutes cold • Mixer taps 3 minutes in coldest and 3 minutes hottest position.

Table 13: *Legionella* risk assessment - Summary Table

13.2 DUWL testing

The efficacy of the waterline cleaning system should be tested using the following validated test procedures. There are a number of commercial companies and public analyst laboratories who perform this testing. Dental units have dental waterlines supplying several instrument hoses, three-in-one air/water syringes, patient's cup filler and cuspidor bowl rinse outlets. All these waterlines are normally interconnected, however where clinics have deactivated water lines to e.g. slow handpiece and cuspidor it is important that these unused waterlines are disconnected from the dental unit waterline network to prevent back contamination of waterlines supplying other instruments.

13.2.1

DUWLs should be tested for:

(a) Aerobic heterotrophic bacterial count (six monthly)

- Testing will usually be carried out by an accredited testing company on your behalf.

Aerobic heterotrophic bacterial counts below	
≤100 cfu/ml	Good
≤500 cfu/ml	Recommended by Centers for Disease Control and Prevention(CDC) and the American Dental Association ADA)

Table 14: Aerobic heterotrophic bacterial counts

- Aerobic heterotrophic bacterial counts should be undertaken at six-monthly intervals for controlled systems (i.e. counts within acceptable parameters), or more frequently if high bacterial counts are recorded.
- Results >500 cfu/ml indicate the system needs to be shocked to reduce bacterial counts and DUWL will need to be re-tested as advised by laboratory.
- If building works in the clinic impact on water systems, DUWL will need to be re-tested for aerobic heterotrophic bacterial counts and *Legionella* bacteria.
- The *Pseudomonas aeruginosa* test should be carried out at the same time as the aerobic heterotrophic counts test (six monthly). The *Pseudomonas aeruginosa* test should be carried out in the first year of accredited laboratory testing. If both six monthly results are negative it does not need to be repeated the following year and testing from then on will be *Legionella* tests and Aerobic heterotrophic culture tests.

(b) *Legionella* bacteria (annually in spring or summer)

- Testing will usually be carried out by an accredited testing company on your behalf.
- Samples should be tested for *Legionella pneumophila* serotype 1, *Legionella pneumophila* other than serotype 1 and *Legionella* species by an accredited laboratory using Buffered Charcoal Yeast Extract Agar (BCYE) according to ISO 11731 (including acid lysis).
- Some accredited laboratories will do the sampling on site. However if not, it is best to send samples by courier to the laboratory within a few hours of collection. Do not store in a fridge.
- It is best to have the water samples taken and tested by public analyst laboratory or accredited laboratory. Ideally water samples should be processed within a few hours.

Legionella Bacteria results	For dental chair units
0	Ideal
<100 (cfu/litre)	Resample immediately consider shock disinfection if in upper end of range
>100 (cfu/litre)	Remedial action required shocking/ Disinfect and retest until satisfactory control level is achieved

Table 15: *Legionella* bacteria results

Refer to Appendix XVI for procedures on testing for Aerobic heterotrophic bacterial count and *Legionella* bacteria.

13.3 Dental unit waterline bottle hygiene

- Appropriate PPE must be worn safety goggles, mask, gloves and apron.
- Cleaning of DUWL bottles should be carried out on a weekly basis on the last schedule day of the individual surgery in use.
- When handling/changing the clean water bottle, clean gloves must be worn. A major source of contamination of water bottles is bacteria and skin cells from operator's hands.

Method A: (follow manufacturer's instructions)	Method B:
<ol style="list-style-type: none"> 1. Clean with non-foaming detergent (not domestic detergent) by swirling soapy water solution in bottle. 2. A soft brush may be used on collar area. This brush should be replaced weekly. 3. Following the cleaning, rinse the bottle thoroughly with clean water, allow it to dry and store inverted. 4. Replace with clean dry bottle on the dental unit (to prevent aerosol contamination). 	<ol style="list-style-type: none"> 1. Some manufacturers have marketed chemical products to aid in the cleaning of the bottle, please use these according to manufacturer instructions 2. An alternative bottle should be attached to waterlines, when undertaking this work (to prevent aerosol contamination).

Table 16: Procedure for DUWL bottle hygiene

- Water bottles have a lifespan and need to be replaced if damaged or according to manufacturer's instructions.

13.4 Care of Dental Unit Waterlines after periods of inactivity (periods in excess of 1 week)

DUWLs must be shocked with a biocide particularly after holidays and periods of inactivity in line with biocide manufacturer's instructions. Residual Disinfectant strip tests are available for checking for residual disinfectants in DUWLs post shocking and flushing and are recommended for use.

13.5 Flushing of Dental Unit waterlines

- DUWLs should be flushed with water for one minute at the beginning and end of a treatment session to flush out retracted oral material and stagnant water.
- DUWLs should be flushed with water for 15- 30 seconds between patients to flush out retracted fluids and particles. All waterlines on the dental unit should be included in the flushing process. Where a water line is not in use, the waterline should be disconnected at source.

13.6 Care of the handpiece/scaler lines

- After use flush/run water through the handpiece/scaler for 15-30 seconds e.g. a disposable cup can be used to collect water or the unit may have an automated flushing system.
- Remove, clean, oil and sterilise the handpiece/scaler as per SOP 10 on decontamination.
- The couplings/tubing must be cleaned with a combined detergent/disinfectant wipe
- Care of Cavitron™ should be treated as a dental unit waterline.

13.7 Care of the 3 in 1 (air/water) water lines

As with the dental handpiece, the dental air/water syringe enters the patient's mouth and is therefore at risk of contamination by oral fluids. The following procedure is recommended for the air/ water syringe:

- After use flush water through the 3 in 1 syringe for 15-30 seconds.
- Disposable tips should be removed.
- The impervious barrier is removed and discarded.
- The air/ water syringe surface is cleaned with appropriate detergent/disinfectant system/wipe.
- The surface is allowed to dry and a new impervious barrier and a new disposable tip is placed for the next patient.

13.8 Sterile water

- Water used in the dental autoclave must be sterile/distilled/RO and deionised and of sufficient quality to meet manufacturer's recommendation.
- Sterile saline is used for irrigation during surgical procedures.
- Sterile water can only be considered sterile until it is opened (assuming it is used before expiry date) - thereafter it will become contaminated.
- It is important that sterile water is used immediately or as soon as is practical after opening (i.e. within one day) if the quality is to be guaranteed.
- Once a sterile water container is opened it should be stored in the fridge.

13.9 Care of the water distiller

Water quality is critical to the decontamination of instruments. Particles and other contaminants must be kept to an absolute minimum. The following procedure will help to keep the water quality up to an adequate standard:

- Appropriate PPE must be worn; safety goggles, mask, gloves and apron.
- Clean the distiller and associated bottle according to manufacturer instructions.
- Clean the distiller before use. A proprietary cleaner as supplied or recommended by the manufacturer of the distiller should be used. Make sure to rinse well after cleaning.
- Do not leave switched on overnight.
- If possible store distilled water in a glass bottle. Otherwise, put the cap on the plastic container immediately after distilling the water. This will stop bacteria and other agents getting into the water. Keep distilled water in a fridge. Use refrigerated distilled water within 24 hours. This may necessitate using sterile water, after weekends and after the surgery has not been used for a number of days, until enough fresh distilled water has been produced.
- It is critical that the bottle/container used to store distilled water is kept clean.
- Do not allow water to come into contact with electrical connections.
- Water distilled on the premises is not recommended for use during a boil water notice.

13.10 Care of Reverse Osmosis (RO) water unit

- Always use RO unit according to manufacturer's instructions
- Membranes should be changed as directed or when RO water quality starts to deteriorate.
- RO water quality should be checked weekly by using a conductivity meter which gives a good indication of water quality. The reading should comply with the unit manufacturer's instructions and be documented.
- Always run the RO supply for 20 seconds before using the water at the beginning of the day.
- Always use fresh RO water and do not store the water.
- Staff must ensure that the machine is regularly serviced and validated according to manufacturer's instructions. Evidence of this should be available for inspection.

13.11 Water (Tap) Flushing Protocol Template for infrequently used dental surgeries

In order to ensure the quality and safety of the water supply it is essential that all infrequently used surgery taps must be flushed weekly and especially before use. (See Section 13.1 Summary Table)

- Run cold tap for three minutes.
- Run hot tap for three minutes once water is hot.
- Mixer tap: run cold side three minutes and hot side 3 minutes.
- A bi-annual temperature test should be performed to ensure cold water is below 20 degrees and hot water is above 50 degrees having run water for 2 minutes.
- Keep a central register of the flushing regimes for each department including frequencies and ensure signed record of the flushing procedure is available in each clinical area.

13.12 Boil water

- A boil water notice when issued to staff and public means that the water is unsafe to drink or for use clinically.
- Patients should rinse with still bottled water/commercially distilled water and these can also be used for hand hygiene.
- Staff can use anti-bacterial hand rubs if hands are not visibly soiled. If visibly soiled, use bottled water with soap for hand washing.
- Use still bottled water/commercially distilled water for rinsing dental impressions and for diluting disinfectant solutions.
- Centers for Disease Control and Prevention (CDC) advise that water is not delivered from the public water system to the patient through any dental equipment. This does not apply if the water source is isolated from the municipal water system (e.g., a separate water reservoir or other water treatment device)
- CDC recommends immuno-compromised patients should be re scheduled during a boil water notice.
- Follow the local water utility's guidance on the flushing of all incoming waterlines from the public water system (e.g. taps, waterlines, and dental equipment). If no local guidance is provided, CDC recommends flushing dental unit waterlines and taps for 1 to 5 minutes before using for patient care. Disinfect DUWL as recommended by manufacturer and change filters in water treatment devices as per manufacturer instructions.
- Further advice can be obtained from the CDC website and <https://www.water.ie/water-supply/water-quality/boil-water-notice/>.

SOP 14 Waste management

14.1 Disposal of healthcare risk waste

“Healthcare waste” is defined as solid or liquid waste arising from healthcare or health related facilities. There are two categories of waste each of which must be segregated and disposed of separately. Each site specific waste management plan must extend to include healthcare risk waste. The dental team is responsible for arranging the safe disposal of healthcare risk waste, thereby protecting patients, staff and public. Each dental area must ensure that it complies with waste legislation including the generation and storage of waste transfer forms.

Non-risk waste	Risk waste
<i>This waste is not hazardous and is disposed of in the usual domestic waste disposal system.</i>	<i>This waste is potentially hazardous to anyone who comes in contact with it (infectious, biological, chemical or radioactive or by being categorised as sharp). Such waste has come in contact with patients’ body fluids such as blood and/or saliva.</i>

Relevant documentation

HSE Waste Management Awareness Handbook

<https://www.hse.ie/eng/services/news/newsfeatures/healthsustainabilityoffice/wasteprevention/waste-management-handbook-2014.pdf>

Waste Management Act 1996

<http://www.irishstatutebook.ie/eli/1996/act/10/enacted/en/html>

S.I. No. 126/2011 European Communities (waste directive) Regulations 2011

<http://www.irishstatutebook.ie/eli/2011/si/126/made/en/pdf>

S.I. No. 349/2011 - European Communities (Carriage Of Dangerous Goods By Road and Use of Transportable Pressure Equipment) Regulations 2011

<http://www.irishstatutebook.ie/eli/2011/si/349/made/en/print>

S.I. No. 277/2019 European Communities (Carriage Of Dangerous Goods By Road And Use Of Transportable Pressure Equipment) (Amendment) Regulations 2019.

<http://www.irishstatutebook.ie/eli/2019/si/277/made/en/print>

14.1.1 Segregation of waste

- This should take place at the point of generation.
- All staff should be familiar with the types of waste being generated within the practice and be trained on appropriate segregation.
- All practices should stock suitable and consistent packaging, which is vital in enabling the different forms of waste to be handled, transported and disposed of in a manner, which is safe and consistent with the nature of the waste.
- The risk of waste spreading infection is very low when handled properly.

14.1.2 Packaging of waste

- Practice staff should use appropriate personal protective equipment (PPE).
- Gloves are always used when handling waste; an apron can be used to protect clothes if handling wet waste.
- Hand hygiene should be carried out after handling waste (even if gloves are worn).
- In general all containers, including wheeled bins carrying bagged waste, should conform to basic requirements relating to:

Manufacturing:

All packaging must be manufactured and tested to the approved UN standards.

Colour coding:

The basic colour put forward for the body of each type of container is yellow. Lid colours are used to indicate the disposal stream.

Labelling:

All packaging used for healthcare risk waste must be marked with a diamond shaped risk label with class number “6” and biohazard symbol and the relevant 4 digit UN number (e.g. UN3291)

Filling:

Containers must not be over-filled. In general rigid boxes should not be more than three-quarters filled (or beyond manufacturer’s fill line) while bags should not be more than two thirds filled.

Closure and Storage:

It is essential that lids of UN containers are fitted and closed in accordance with the manufacturer’s recommendations. Plastic bags should be closed using a “swan-necking” technique (see 14.1.3) and tied with either tape or a cable-tie. Once closed the person must sign that the container is sealed correctly. Bags/containers that have been appropriately sealed, tagged and labelled should be stored in a designated secure area (inaccessible to the public) awaiting collection.

Traceability:

All waste packages must be tagged with a unique reference number which is traceable to the point of production. Proprietary closure ties which incorporate a reference number system are now extensively used. Each healthcare waste generator should retain records of tags issued to particular locations for a recommended period of not less than three years. Transportation of healthcare risk waste is governed by several sets of regulations (and must conform to ADR* requirements)

*ADR: European Agreement Concerning the International Carriage of Dangerous Goods by Road.

Refer to Appendix XVII for segregation and packaging on Healthcare risk and non-risk waste

14.1.3 Disposal of waste

- Healthcare risk waste must be placed and stored in yellow healthcare risk waste bags.
- Yellow healthcare risk waste bags should be housed within a rigid foot operated bin.
- Apply the swan neck sealing method as demonstrated below.

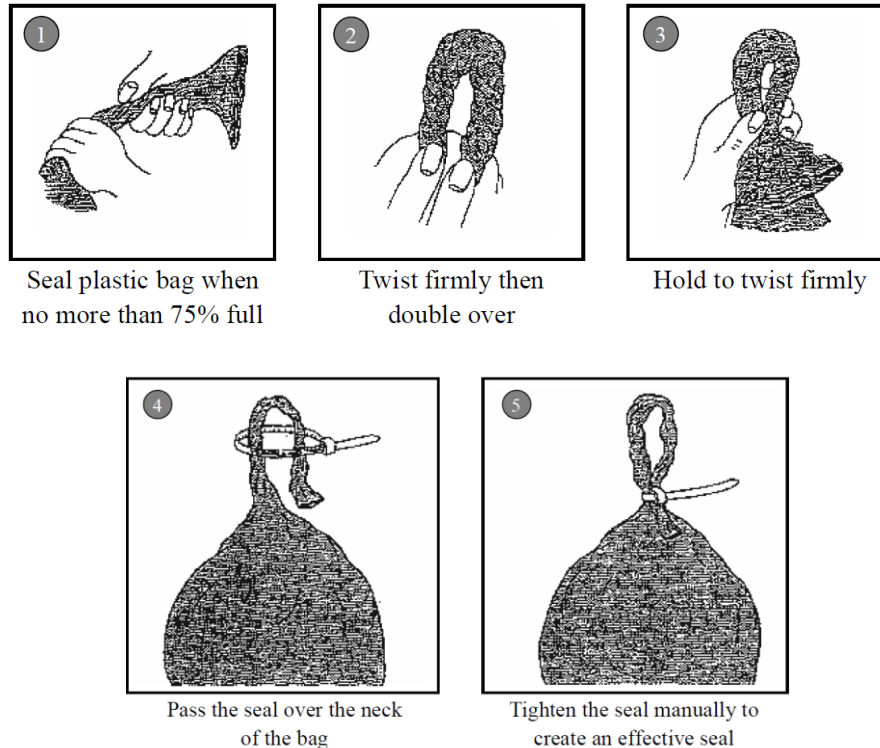


Figure 5: Swan Neck Sealing Method

- It is important that clinical sharps bins are not filled to more than two thirds of their capacity to avoid sharps injuries and they should be in the temporary lock position when not in use.
- Full sharps bins should be locked, signed and stored upright in a secure location awaiting collection.
- It is essential that each healthcare risk waste bag/sharps container is tagged and the tag number recorded for reasons of traceability and accountability.
- Amalgam waste/dappen dishes used to hold amalgam/used amalgam capsules must be placed and stored in the appropriate amalgam waste containers and collected by an authorised waste disposal company.
- Extracted teeth should be placed in specific waste tooth boxes/pots available from the waste contractor. Alternatively they can be cleaned and returned to the patient.

- The following items are suitable for disposal in clinical sharps bins but this list is not exhaustive:
 - Needles
 - Matrix bands/orthodontic bands
 - Orthodontic wires
 - Temporary anchorage devices
 - Removable appliances and fixed appliances
 - Burs
 - Scalpel blades and disposable scalpel blades
 - Endodontic instruments such as files, reamers, broaches
 - Empty local anaesthetic cartridges
 - Etch tips (where possible etchant gel should be placed in a disposable dappen dish and a disposable brush used to apply same).

14.2 Disposal of Pharmaceutical waste

- Pharmaceutical waste should NOT be disposed of in clinical sharps bins.
- Out of date pharmaceuticals e.g. midazolam may be disposed of by arrangement with a local pharmacist or in designated bins – Pharmabin (yellow bin and purple lid).
- Aerosols should be disposed of in the appropriate containers which are supplied by the waste collectors.

14.3 Disposal of end of life instruments

- End of life instruments should be decontaminated.
- Contact the local healthcare risk waste operator for their recommendations regarding disposal.

14.4 Disposal of plaster models (e.g. orthodontic study models, plaster casts) made of plaster containing gypsum

- Gypsum is prohibited from domestic landfill sites.
- Models should be segregated from other waste, anonymised, coded as 18 01 04, and either sent for recycling as gypsum or for disposal in a specifically designated landfill site.
- In a small number of cases, the model may become contaminated with body fluids if the appliance or crown is retriied on the model after insertion in the patient's mouth. In this case models should then be disposed of in a yellow waste bag as an infectious waste.

SOP 15 Service Animals

- A service animal is any animal trained to do work or perform tasks for the benefit of a person with a disability. A service animal is not considered a pet but rather an animal trained to provide assistance to a person because of a disability.
- People with disabilities accompanied by service animals should be allowed access with their service animals to places of public accommodation, including health care facilities.
- No evidence suggests that animals pose a more significant risk of transmitting infection than people; therefore, service animals should not be excluded from such areas unless a patient's situation or a particular animal poses risk that cannot be mitigated through reasonable measures.
- If health care personnel, visitors, and patients are permitted to enter care areas (e.g., inpatient rooms and public areas) without taking additional precautions to prevent transmission of infectious agents (e.g., putting on gloves, gowns, or masks), a clean, healthy, well-behaved service animal should be allowed access with its handler.
- No reports to date have been published regarding infectious diseases that affect humans originating in service dogs. Standard cleaning procedures are sufficient following occupation of an area by a service animal.
(Centres for Disease Control and Prevention 2003 Dental Guideline)

SOP 16 Dental antimicrobial stewardship and Infectious disease and multidrug resistance organisms (MDRO)

Antimicrobial resistance is a major public health issue and has become a global concern. The World Health Organisation informs that about 2 million people become infected with bacteria resistant to antibiotics each year. There are estimated 25,000 deaths in Europe each year from multidrug resistant organisms. A high rate of antibiotic prescribing is associated with increasing levels of antibiotic resistance in hospital and community settings. This can lead to the need for more expensive and broader spectrum antimicrobial use to treat common infections. World experts believe it is unlikely that major new classes of antibiotics will be developed in the near future. Therefore it is necessary that existing classes of antibiotics are managed to reduce the effect of emerging resistance and it is our collective responsibility to ensure correct use of antibiotics.

Dental antimicrobial stewardship is concerned with promoting appropriate antimicrobial selection i.e. the optimal drug, dose and duration. Evidence based dental antimicrobial guidelines have been developed by the Dental Antibiotic Stewardship Working Group, which is a subgroup of the Primary Care Antimicrobial Guideline Expert Advisory Committee associated with the HSE Antimicrobial Resistance and Infection Control Team as a resource to dentists. The dental guidelines facilitate antimicrobial prescription in primary dental care in order to minimise patient adverse events and minimise antimicrobial agent resistance. The guidelines provide advice, taking account of best available evidence. Widespread circulation of the dental guidelines was undertaken by the Dental Council and National Oral Health Office.

Antibiotics are prescribed by dentists for treatment, as an adjunct to treatment and for the prevention of infection. Indications for the use of systemic antibiotics in dentistry are limited, as most dental conditions are best managed by local measures. IPC practices are an important part of an effective response to antimicrobial resistance. Preventing infections reduces the need for antimicrobials and the opportunity for resistance to develop. Vaccination can also reduce antimicrobial resistance through preventing infectious diseases.

16.1 Principles of Antimicrobial Treatment:

Before prescribing antimicrobials clinicians should also consider the following:

- Consider local measures which may obviate the need for an antimicrobial therapeutic agent and prescribe an antibiotic only when there is likely to be a clear clinical benefit.
- Refer to HSE Dental Antibiotic Guidelines
<https://www.hse.ie/eng/services/list/2/gp/antibiotic-prescribing>
- Previous antimicrobial treatment which has been prescribed for the current and previous infections.
- The allergy status of the patient.
- Concurrent medication that the patient is taking.
- Patient's medical history.
- Weigh the patient if appropriate to do so (under weight or over weight for age band).

- It is important to recognise that antibiotics should be administered effectively; the effective ingredient at the correct concentration at the appropriate frequency for the correct duration i.e. avoid under dosing or overdosing -
 - Under dosing has been shown to be associated with increasing resistance. This is especially true of the Macrolides classes e.g. (erythromycins).
 - Overdosing may lead to toxicity issues.
- As antibiotics are used to reduce existing infection, follow up should be arranged for each patient to ensure that infections have resolved and that necessary treatment is completed to resolve the source of infection and to reduce the potential for reinfection and second antibiotics.
- Clinicians should also make patients aware of what they will be taking, why they are being given a prescription, how to identify adverse reactions and who to contact in case of difficulty.

16.2 Infectious disease and multidrug resistance organisms (MDRO)

16.2.1 Carbapenemase Producing Enterobacterales (CPE)

- *CPEs are several Gram-negative bacterial species that can colonise the gut including Klebsiella pneumoniae, Escherichia coli, Enterobacter aerogenes, Enterobacter cloacae complex and Klebsiella oxytoca. CPE bacteria are resistant to carbapenem and often other classes of antibiotics. Bloodstream infections caused by CPEs have an associated mortality of approximately 40%.*
- *CPE sheds in faeces, traces of which are often invisible*
- *Spreads from person to person via faecal oral route*
- *Can be transferred by hands and then to other surfaces by touch*
- *Transferred from unclean hands or contaminated surfaces/food/ utensils to the mouth*

CPE Exposure: Has been identified in a healthcare facility, more likely in-patient in an acute hospital location with a person shedding CPE or an environment contaminated with CPE. Multiple recent outbreaks of infection caused by CPEs in many countries have been linked directly with contaminated wash hand basin and sink drain outlets in hospitals. This is particularly important with units in which the tap water impacts the drain outlet.

CPE Contact: Assessed by IPC Practitioner/Public Health Doctor as having had significant exposure and likely to be at higher risk than most people of carrying CPE because of that exposure

It is appropriate to treat patients carrying CPE in the dental surgery.

There should be consistent application of Standard Precautions to reduce risk of transmission:

- Hand Hygiene done properly at the right time.
- PPE- Gloves, aprons, masks, goggles/visors - when in contact with body fluids.
- Clean environment.
- Clean equipment between uses.
- Management of sharps.
- Management of laundry and waste.

Further guidance available here: <https://www.hse.ie/eng/about/who/healthwellbeing/our-priority-programmes/hcai/resources/acute-hospital-cpe-toolkit/guidance-for-community-healthcare-workers-caring-for-people-colonised-or-infected-with-antimicrobial-resistant-organisms-including-cpe.pdf>

16.2.2 Methicillin Resistant *Staphylococcus aureus* (MRSA)

- It is appropriate to treat patients carrying the MRSA organism in the dental surgery.
- There is no requirement to separate the patient from other people in the waiting room.
- MRSA is spread by direct and indirect contact so in theory there is a chance that a staff member can acquire MRSA onto their skin or uniform following close contact with the patient.
- Standard precautions and a plastic apron should be used to protect uniform from contamination. If a patient is colonized with MRSA wearing of an apron can be risk assessed.
- The most fundamental element of managing the risk of spread of microorganisms is the consistent application of Standard Precautions in all healthcare settings and with all people all of the time.
- Further guidance on outpatient day care for persons colonised with Anti-Microbial Resistant Organisms (AMRO) is available with following link:
http://www.hpsc.ie/az/microbiologyantimicrobialresistance/strategyforthecontrolofantimicrobialresistanceinirelandsari/carbapenemresistantenterobacteriaceae/guidanceandpublications/Hospital%20Out%20Patient%20and%20Day%20Care%20for%20people%20with%20AMRO%20or%20CPE_15Sept2018.pdf

16.2.3 Creutzfeldt-Jakob disease CJD and Transmissible spongiform encephalopathy TSEs

- Seek the guidance of a specialist consultant microbiologist or Infectious Disease Physician prior to commencing clinical treatment.
- Further information is available at <https://www.hse.ie/eng/health/az/b/bse/causes-of-creutzfeldt-jakob-disease.html>

16.2.4 Measles, mumps and tuberculosis

- Infection with measles, mumps and tuberculosis (TB) can occur by airborne transmission of respiratory secretions. In addition, TB has been transmitted as a result of dental treatment
- Patients suspected with suffering from any of these illnesses should have their dental treatment deferred until they are no longer infectious.
- In an emergency situation transmission-based precautions must be used. Seek the guidance of a specialist consultant microbiologist or Infectious Disease Physician prior to commencing clinical treatment.

16.2.5 Herpes Simplex (cold sore)

- Patients who have a history of recurrent herpetic lesions should be advised to contact their oral health care provider if they have a herpetic lesion present before their appointment.
- Rescheduling of the appointment prevents the inconvenience of dismissing the patient should they attend with a lesion.
- No elective treatment should be performed and treatment should be limited to relief of pain/infection.

16.2.6 Patients with fever of uncertain origins

Patients with history of fever (of uncertain origin) above 38 degrees centigrade and have travelled outside of Europe need to be medically assessed prior to dental treatment.

- A patient with a fever or history of a fever and arrived from an Ebola affected area within 21 days of onset of symptoms can be referred for further assessment in hospital, without undertaking a clinical examination. A “talk, don’t touch” approach is recommended.

Further information and patient leaflets available here;

<https://www.hse.ie/eng/about/who/healthwellbeing/our-priority-programmes/hcai/>

PART B: Guideline Development Cycle

1.0 INITIATION

1.1 Purpose

Successful management of dental infection prevention and control involves applying a risk management approach. This Guideline for Infection Prevention and Control (IPC) in the HSE Dental and Orthodontic Services is based on the best available evidence which aims to assist dental staff in their daily work. This document condenses current knowledge and recommendations on many aspects of IPC in the dental and orthodontic surgery.

In a world of ever evolving evidence-based practice, it is essential that dental and orthodontic staff continue to involve themselves in continuing education in relation to IPC. Dental and orthodontic staff members have an obligation to be aware of and adopt current best practice. With time, the Standard Operating Procedures in this Guideline will require updating to ensure that it is consistent with emerging evidence. Until then it represents the procedures to be followed in all dental and orthodontic clinics in the HSE.

1.2 Scope

This document gives national guidance to all HSE dental and orthodontic staff on IPC procedures in the community dental and orthodontic clinics, domiciliary and school settings. IPC is an integral part of clinical care and risk management.

1.2.1 Out of Scope: This document does not include guidance on Dental Inpatient acute hospital services

1.2.2 Target users; This document is applicable to all HSE Dental Staff members, Dentists, Specialist Dentists, Consultant Orthodontists, Specialist Orthodontists, Orthodontic Therapists, Oral Surgeons, Hygienists and Dental Nurses (including agency, locum and temporary staff or session staff). It is envisaged as a reference document to provide guidance and direction to all dental and orthodontic staff on infection prevention and control procedures.

1.2.3 Population to whom it applies;
Service users (and those accompanying them) attending HSE Dental and Orthodontic Services

1.3 Objective(s)

- To provide guidance and direction to all HSE dental and orthodontic staff in relation to IPC in dental and orthodontic clinical environments
- To ensure each staff member recognises the importance of their individual role in the maintenance of a high standard of IPC throughout the dental clinical environment.

1.4 Outcome(s)

This National Guideline will provide a consistent approach to IPC across all dental settings. By following the Standard Operating Procedures for IPC, all HSE dental and orthodontic staff will ensure they provide dental care and support in clean and safe clinical environments that minimises the transmission of healthcare associated infections.

1.5 PPPG Development Group

See Appendix II for Membership of the PPPG Development Group

Leo Burke, Regional Dental Inspector, HSE South.
Aine Clyne, Quality & Patient Safety Manager, HSE
Padraig Creedon, Principal Dental Surgeon, HSE, Waterford/Wexford
Niamh Galvin, Assistant National Oral Health Lead, Quality and Risk, HSE
Fiona Garvey, Quality Standards & Compliance, HSE
Sheila Hagan, Specialist Orthodontist, HSE
Dermot Monaghan, Head of Service, Primary Care CHO 1, HSE (Chairperson)
Mary O'Donnell, Assistant Professor Infection Prevention and Control, Dublin Dental University Hospital
Deirdre Ryan, Secretariat, National Oral Health Office.

See Appendix III for PPPG Conflict of Interest Declaration Form are signed and held in the Master Copy.

1.6 PPPG Governance Group

1.6.1 See Appendix IV for Membership of the Approval Governance Group.

1.7 1.7.1 Policies, Publications and Legislation

Further important and detailed information is available in a range of documents including the following national and international guidance documents:

Australian Government; Guidelines for prevention and Control of infections in healthcare settings (2019)
Australian Dental Association; Guidelines for Infection Control Third Edition (2015)
Centre for Disease Control; Guidelines for infection control in healthcare settings (2003)
Dental Council Code of Practice Relating to Infection Prevention and Control, Dental Council of Ireland (2015).
DOHC Segregation Packaging and Storage Guidelines for Health Care Risk Waste, Department of Health and Children (2004)
HIQA; National Standards for Safer Better Healthcare, (2012)
HIQA ; National Standards for the prevention and control of healthcare-associated infections in acute healthcare services (2017)
HIQA; National Standards for Infection Prevention and Control in Community Services (2018)
HPSC; National Guidelines for the Control of Legionellosis in Ireland (2009)

HPSC; National Guidelines for the Prevention and Control of Infection from Water systems in Healthcare Facilities (2015)
HPSC; Prevention of Transmission of Blood Borne Disease in the Health Care Setting (2006)
HSA (Health and Safety Authority); Safety Health and Welfare at Work Act, (2005)
HSE Quality and Patient Safety Division; Guidance for the Application of Standards and Recommended Practices for Local Decontamination Units (LDUs) in Primary Care, Dental, Podiatry and GP Practice (2016)
HSE Quality and Patient Safety Division; Guidelines for Hand Hygiene in Irish Healthcare Settings update (2015)
HSE Quality and Patient Safety Division, Healthcare Associated Infections and Antimicrobial resistance https://www.hse.ie/eng/about/who/healthwellbeing/our-priority-programmes/hcai/
HSE Quality and Patient Safety Division, Infection Prevention and Control for Primary Care in Ireland – A Guide for General Practice, HCAI/AMR Healthcare Associated Infections and Antimicrobial Resistance (2013)
HSE Code of Practice for Decontamination of Reusable Invasive Medical Devices – Part 5b: Dental Decontamination- Recommended Practices for Dental Services in a Local Decontamination Area, HSE Quality and Patient Safety Division (2007)
HSE Policy on the Prevention of Sharps Injuries, HSE Quality and Patient Safety Division (2016)
HSE Incident Management Framework (2018)
HSE Quality and Patient Safety Division CPE Expert Group, Hospital Out-Patient and Day Care for people colonised with Antimicrobial Resistant Organisms including Carbapenemase Producing Enterobacterales, (2018)
Lemass H et al.; Infection Prevention and Control for Primary care in Ireland. A Guide for General Practice (2014)
Medical Device Equipment Management Policy (Incorporating Medical Equipment Management Best Practice) 2016.
Scottish Dental Clinical Effectiveness Programme Sterilisation of Dental Instruments, SDCEP (2011)
Statutory Instrument (S.I.) No. 135 of 2014, EU Prevention of Sharp injuries (2014)

1.7.2 This HSE National Infection Prevention and Control Guideline for HSE Dental and Orthodontic Services is new and supersedes all local PPPGs on infection prevention and control.

1.8 Glossary of Terms

Asepsis	<i>'Freedom from infection or infectious (pathogenic) material'</i> (Weller 1997) There is a distinction between Surgical Asepsis (sterile) which means free from pathogenic microorganisms and General Or Standard Asepsis (Clean) which involves procedures to reduce the number and transmission of pathogens. General or Standard Asepsis is used in the Dental setting.
ANTT (Antiseptic Non Touch Technique)	ANTT (Aseptic Non Touch Technique) is based on the achieving asepsis by the novel concept of Key-Part and Key-Site Protection: Key-Parts (aseptic parts of equipment (syringe tips) that come into direct or indirect contact with other Key-Parts (e.g. Cannula ports, giving sets) and Key-Sites (e.g. wounds and cannula insertion sites) must not be touched.
Biocide	A chemical substance used to significantly reduce the microbial burden on surfaces. Examples include chlorhexidine.
Biofilm	A complex polymicrobial community consisting of single cells, microcolonies and inorganic substances encased in a matrix of bacterial polysaccharides. Examples of biofilms include those that form on the interior surfaces of dental unit waterlines, which can cause the quality of output water to deteriorate rapidly.
Bowie-Dick test	The Bowie-Dick test is a standard operational test which can demonstrate proper steam penetration from a pre-vacuum autoclave chamber. It is primarily useful for testing pre-vacuum cycles that are sterilising wrapped goods or packs. In general dentistry the Helix test is used for hollow instruments such as dental handpieces.
Community Healthcare Organisation (CHO)	CHOs cover services provided outside of the acute hospital system including primary care, social care, mental health, and health and wellbeing services.
Cleaning	This is the physical removal of foreign material, for example dust, soil, organic material such as blood, secretions, excretions and micro-organisms. Cleaning removes micro-organisms and the organic material on which they thrive. It is a necessary pre-requisite of effective disinfection or sterilisation
Dental clinician	Dental and Orthodontic health care professional
Decontamination	The removal of microorganisms or foreign matter (or both) from contaminated materials. Three processes for decontamination are commonly used: cleaning, disinfection and sterilisation
Disinfection	The inactivation of non-spore forming microorganisms using chemical means
Disinfectant	Disinfection does not necessarily result in the destruction of all microorganisms, especially microbial spores, but results in a significant reduction in the density of contaminating microorganisms.
Flushing of basin	The process of expelling water from the sink taps for a period of time to flush out stagnant water in the line.
Flushing of DUWL	The process of expelling water from DUWL at start of day and between patients to flush out stagnant water, retracted material and oral fluids from lines.

Function test ultrasonic cleaner	To check cavitation usually done with a foil test or wand metre or sono check.
Function test of ultrasonic cleaner/washer disinfectant	To verify removal of contamination use either soil test or load check indicator
Healthcare associated infection	Healthcare associated infection (HCAI) refers to harm to service users/patients as a result of acquiring an infection due to the process of healthcare delivery (HSE Corporate Risk Register).
Healthcare worker	Refers to all health care professionals
Helix test	This test verifies steam penetration in hollow/lumened instruments. It is performed using a helix Process Challenging device on the Bowie-Dick/ Helix test cycle in a vacuum autoclave.
Immuno-compromised patients	An immunocompromised host is a patient who does not have the ability to respond normally to an infection due to an impaired or weakened immune system. This inability to fight infection can be caused by a number of conditions including illness and disease (e.g., diabetes, HIV), malnutrition, and drugs
Invasive procedure	Any procedure that pierces skin or mucous membrane or enters a body cavity or organ.
Local Decontamination Unit (LDU)	A LDU is the dedicated area in a dental clinic that is used for decontamination of dental Removable Invasive Medical Devices (RIMD).
Medical Device	Any instrument, apparatus, appliance, material or other article intended by the manufacturer to be used for human beings in the provision of healthcare.
MRSA	MRSA stands for meticillin-resistant Staphylococcus aureus. Staphylococcus aureus (S. aureus or SA) is a bacteria or germ which many people carry in their nose or on their skin. MRSA is a type of S. aureus that is resistant to a range of antibiotics including meticillin. 'Meticillin-resistant' means the bacteria cannot be killed by meticillin, a type of antibiotic that used to be able to kill them.
Reprocessing	See Decontamination.
Reusable item	An item designed or intended by the manufacturer to be suitable for reprocessing and reuse.
Sharp	Objects or instruments necessary for the exercise of specific healthcare activities, which are able to cut, prick, cause injury and/or infection. This is including, but not limited to, scalpels, needles, cannulae, extracted teeth, orthodontic wires etc.
Shock disinfection of waterlines	The addition of chemical disinfectant agents (e.g. hydrogen peroxide) to waterlines for defined time periods to significantly reduce microbial contamination. Shock dosing is warranted when the microbiological quality of output water deteriorates despite routine control measures.

Sterilisation	A process used to render an object free from viable microorganisms including viruses and bacterial spores.
Validation	Documented procedure for obtaining, recording, and interpreting the results required to establish that a process will consistently yield an outcome complying with predetermined specifications. Validation broadly encompasses three activities – commissioning, verification of a process specification and performance qualification.

2. DEVELOPMENT OF GUIDELINE

2.1 Clinical question

Due to awareness of a variation in the practice across Dental settings, it was apparent that a standardised guideline was required at national level. For the purposes of drafting a national guideline, copies of all existing local procedures were requested and reviewed. Available clinical guidelines were reviewed.

The clinical question asked in the development of this guideline was:

1. What is current best practice in Infection Prevention and Control (to include all areas as outlined below), applicable to Dental and Orthodontic Services?

1	Hand Hygiene
2	Respiratory Hygiene and Cough Etiquette
3	Personal Responsibilities
4	Vaccinations/Immunisation
5	Personal Protective Equipment
6	Management of Sharps/Prevention of Sharps Injuries
7	Management of Occupational blood and body fluids exposures
8	Routine Management of the Physical Environment (including domiciliary and school settings)
9	Appropriate Use of Single-Use Items
10	Decontamination of Reusable Invasive Medical Devices
11	Disinfection of Patient Care Equipment and domiciliary care
12	Care of Dental Suction Systems
13	Care of Dental Waterlines and Water Quality
14	Waste Management
15	Service Animals
16	Dental Antimicrobial stewardship, Infectious disease and multidrug resistance organisms (MDRO)

2.2 Literature search strategy

The standard operating procedures incorporated in this national guideline are based on the best available evidence and expert knowledge on clinical procedures. They draw from other work in the area including Dental Council Code of Practice, CDC, HSE, HPSC and HIQA guidelines and on Infection Prevention and Control in the community. Previous regional dental standard operating procedures and national and international IPC guidance were considered. In addition expert opinion was sought on emerging IPC issues. Clinakey and Medline were also searched. A steering group guided the development process.

2.3 Method of appraising evidence

The sub group critically appraised the quality, validity and relevance of the most recent national and international guidelines. During the appraisal period HIQA released the National Standards for infection prevention and control in community services 2018, which the group took into account in completing the document. The HSE Guidance for the Application of Standards and Recommended Practices for Local Decontamination Units (LDUs) in Primary Care, Dental, Podiatry and GP Practice also informed these standard operating procedures

2.4 Process the PPPG Development Group used to formulate recommendations

The sub group examined a range of scientific research papers, relevant guidelines and recommendations. Following discussion by the group and expert guidance as necessary the standard operating procedures were developed by consensus.

2.5 Summary of the evidence from the literature

See 1.7 Table of support evidence.

2.5.1 Infection prevention and control

Preventing and controlling healthcare associated dental infection will continue to be an ongoing challenge for all dental staff. Many immune-compromised persons seek primary dental care in community dental clinics. These persons are at greater risk of developing infections from microbes considered generally of low pathogenicity. Therefore all patients need to be cared for in a dental environment that is safe and clean where the risk of them contracting an infection is kept as low as possible. Failure to implement effective policies and procedures and to risk assess treatment delivered could result in significant transmission of infection. Implementation of Standard precautions is vital in treating all patients safely.

In dental practice microbes may be inhaled, injected, ingested and implanted. They may also be splashed on skin or mucosa. Microbes may spread by direct contact from one person to another, or indirectly with equipment or environment. They may also be spread by air or contaminated waterlines. Effective dental infection prevention helps prevent the transmission of pathogenic microbes from; patient to patient, staff to patients, patients to staff.

By understanding how diseases are transmitted and applying IPC standards, the transmission of infection can be interrupted.

2.5.2 Standard Precautions

Standard precautions are designed to break the chain of infection. They are a set of minimum infection prevention practices where the same IPC procedures must be followed for all patients. Furthermore all patients must be regarded as potentially infectious in any setting where health care is delivered.

Standard precautions now integrate and expand the elements of previous universal precautions into a standard of care designed to protect health care staff and patients from pathogens that can be spread. Sources of (potential) infection include blood and other body fluids/ secretions or excretions (excluding sweat), non-intact skin or mucous membranes and any equipment or items in the care environment that could have become contaminated.

From a dental point of view there is no practical difference between standard precautions and universal precautions. A thorough medical history process must be completed for each patient and regularly updated. Direct questioning and discussion between the dental surgeon and the patient must support the medical history process.

2.6 Resources necessary to implement the PPPG recommendations

The implementation plan for this Guideline will require a training plan to run concurrent with the publication of the document. Plan outlined in 5.2

2.7 Guideline Recommendations

Refer to Part A

3.0 GOVERNANCE AND APPROVAL

3.1 Formal Governance Arrangements

3.1.1 Refer to Appendix IV for Membership of the Approval Governance Group. The final document is submitted to the National Community Operations Management team. Once approved the final version is converted to a PDF document to ensure the integrity of the PPPG.

A signed and dated master copy is retained within National Oral Health Office Department.

A signed copy of the checklist is attached to the master copy.

3.2 Method for assessing the Guideline in meeting the Standards outlined in the HSE National Framework for developing PPPGs.

The approved HSE PPPGs Checklist was used for assessing the Guideline in meeting the standards. This signed checklist is held in the master copy.

4.0 COMMUNICATION AND DISSEMINATION

4.1 Describe communication and dissemination plans.

Consultation and feedback on the draft Guideline were sought from relevant stakeholders prior to publication.

The National Director Community Operations will ensure widespread awareness of the Guideline to relevant audiences of HSE services and other stakeholders using existing communications channels:

- Service users via the HSE website
- HSE Dental and Orthodontic staff via Chief Officers in CHO/Orthodontic areas

Responsible Persons are required to make this Guideline available to all relevant employees in the HSE Dental and Orthodontic Service. Electronic and other communication means can be used to maximise distribution. Managers must create an awareness of the Guideline throughout their services and ensure that employees under their supervision have read and understand the Guideline. A signature sheet is provided for this purpose.

5.0 IMPLEMENTATION

5.1 Implementation plan

An implementation plan was developed to incorporate the consultation, communication and training plans. Timelines and responsible persons were identified in the implementation plan which is available as an appendix in the master copy.

Procedures should be adopted by each CHO/Orthodontic Area from the date of approval and publication.

5.2 Education/training plans required to implement the PPPG

5.2.1 Online Training

It is considered essential that all staff should undertake infection prevention eLearning training on induction. Below are the essential HSE Land courses that need to be completed. On completion of courses certificates should be given to line manager.

- HSE 'Breaking the Chain of Infection
- Seasonal influenza vaccine e learning module on induction.
- HSE 'Hand Hygiene' programme

5.2.2 Face to face training

A series of face to face briefings will take place nationwide across all dental and orthodontic areas. Content will be developed directly from the Guideline in the format of Powerpoint Presentation, Discussion and a 'Train the trainer/Infection Control Champion' approach to implement the Guideline to all relevant staff.

5.2.3 Staff Meetings

Infection prevention and control should be an item on all staff meeting agendas as a rolling item for discussion

5.3 Lead person(s) responsible for the implementation of the PPPG.

Chief Officers of CHO areas
Saoita Hospital Group
Heads of Service – Primary Care
Principal Dental Surgeons
Consultant Orthodontists
Acting Heads of Departments
Oral Surgeons
Senior Administrative Dental Surgeons
Senior Clinical Dental Staff
Senior Dental Nurses
Other staff nominated/delegated in this role

5.4 Specific roles and responsibilities.

Implementing safe and effective IPC is the responsibility of the whole dental team. Management and clinicians have ultimate responsibility to ensure that each member of his/ her team understands and practices procedures correctly and routinely.

Members of the public are entitled to and increasingly aware of the need for dental teams to practice good IPC. HIQA has legislative authority to publish guidelines and its inspection reports are available to the public. All members of the team must be familiar with IPC guidance and be competent and confident to answer patients' queries or refer them to the clinician.

Teamwork

The aim of the HSE dental service is to provide dental treatment for children and designated groups of adults in a clean and safe environment. The provision of dental care is very much a team exercise. All members of the dental team must be clear in their role. Everyone has a vital role to play as the quality of each patient's care depends as much upon the care and expertise of the team around the clinician as the treatment provided by that clinician. Delivering a quality service is not just about the clinician's technical ability. It also incorporates the importance of creating a culture of reporting and of learning. Quality is also determined by the standards of hygiene and IPC and the administrative procedures in place for dealing with all patients, schools and special needs groups. It is also about the courtesy with which patients, parents, carers and colleagues are treated. There are many tasks that must be carried out in the dental surgery to ensure that treatment can be carried out in a safe environment. It is essential to establish an appropriate patient work flow system.

Excellence in IPC practice is best delivered by a team whose members are clear in their roles. Whilst the clinician is directly responsible for the provision of treatment and disposal of used sharps, none of the other IPC tasks is exclusively the task of either clinician or dental nurse – either person can do the task – the important thing is that the tasks are completed safely and that, within each team, each person is clear about her/his role.

Management of records and confidentiality

All staff must comply with the HSE Data Protection Policy to ensure compliance with the GDPR and relevant Irish legislation. <https://www.hse.ie/eng/gdpr/hse-data-protection-policy/hse-data-protection-policy.pdf> .

Good patient records are an essential part of quality care and governance. The medical history-taking process is an important part of infection control in order determine a patient risk status.

- The patient's dental record is completed contemporaneously to ensure accuracy of records.
- Record keeping is also an important part of the decontamination process.
- Infection control tracing and test sheets (Appendix XI – XIII) must be completed and stored.

Confidentiality

- All information disclosed by a patient during dental visits is confidential.
- Conversations with patients must be conducted in environments where the patients' confidentiality is protected. Patient details cannot be discussed outside the HSE service environment.
- Telephone calls involving patient or staff details should be handled discreetly, with cognisance taken of people in adjacent waiting rooms or surgeries who may overhear conversations.
- Desktop computers should be locked when left unattended, e.g. during breaks and lunchtimes.

Ensuring Governance and Compliance	Complying
<p>Those responsible for ensuring compliance with the standard operating procedures for infection prevention and control in the dental surgery are as follows;</p> <ul style="list-style-type: none"> ○ Principal Dental Surgeons ○ Consultant Orthodontists ○ Acting Heads of Departments ○ Oral Surgeons ○ Senior Administrative Dental Surgeons ○ Senior Clinical Dental Staff ○ Senior Dental Nurses ○ Other staff nominated/delegated in this role 	<p>The roles and responsibilities of staff are clearly defined and those responsible for complying with and implementing the standard operating procedures for infection prevention and control in the HSE Dental and Orthodontic service follows;</p> <ul style="list-style-type: none"> ○ All Dental Staff: Dentists, Orthodontists, Specialist Orthodontists, Orthodontic Therapists, Oral Surgeons, Hygienists, and Dental Nurses (including agency, locum, session and temporary staff).

“Failure to provide and use adequate sterilisation facilities may lead to proceedings for professional misconduct before the Fitness to Practice Committee of the Dental Council” (Irish Dental Council 1993)

Overall responsibility and accountability for IPC and implementation of this Guideline and Standard Operating Procedures rests with the senior management of the specific dental and orthodontic services. This accountability includes a responsibility for communication of SOPS, for ensuring staff have access to recommended vaccines, equipment and training to implement effective and safe IPC. This accountability must be replicated locally in individual dental/orthodontic clinics. Clinics must have strong and effective local management arrangements to ensure a sustainable delivery of safe and effective IPC. (Theme 5 HIQA Community Standards 2018) The Clinician/Senior person is responsible for patient safety.

6.0 MONITORING, AUDIT AND EVALUATION

6.1 Lead person(s) responsible for the following processes:

6.1.1 Monitoring

Those responsible for monitoring the Guideline on a day-to-day operational level include:

- Principal Dental Surgeons
- Consultant Orthodontists
- Specialist Orthodontists
- Acting Heads of Departments
- Oral Surgeons
- Senior Administrative Dental Surgeons
- Senior Clinical Dental Staff
- Senior Dental Nurses
- Other staff nominated/delegated in this role

6.1.2 Audit.

It is recommended that a regular audit be carried out in the Dental/Orthodontic Surgery to monitor compliance of Standard Operating Procedures for Infection Prevention and Control within this Guideline. Auditing to measure compliance with IPC policies and procedures can occur through:

1. direct observation
2. examining logs and registers of specific activities (e.g. sterilisers)
3. monitoring use of PPE or hand hygiene products.

The Dental Council (2015); recommends that the following practice protocols be audited annually.

- Decontamination of dental instruments
- Healthcare risk waste
- Hand hygiene
- Staff training in infection prevention control

Refer to associated downloadable Audit Tool

6.1.3 Evaluation.

The effectiveness of the Guideline will be evaluated using a number of processes

- Monitoring feedback from responsible persons
- Audit results
- Surveys
- Evaluation of incidents and complaints

7.0 REVISION/UPDATE

7.1 Procedure for the update of the Guideline

This Guideline will be reviewed in 3 years from the date of publication unless otherwise indicated.

7.2 Method for amending PPPG if new evidence emerges.

If and when research, legislation, standards and current practices significantly alter, this Guideline will be reviewed accordingly. For example, the environmental impact of healthcare waste management and the segregation of healthcare risk waste in the dental setting is a dynamic area where emerging evidence and/or a change in professional guidelines will guide future procedures.

7.3 Disclaimer

The standard operating procedures outlined in this guideline are designed to reduce the number of infectious agents in the dental practice environment; prevent or reduce the likelihood of transmission of these infectious agents from one person or item / location to another; and make items and areas as free as possible from infectious agents.

They are based on the best available evidence and will be subject to review if and when new evidence emerges.

Professional judgement is essential in determining the necessary application of these guidelines to the particular circumstances of each individual dental practice.

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HSE National Guideline for Infection Prevention and Control in HSE Dental and Orthodontic Services

PPPG Reference Number:
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9.0 APPENDICES

Appendix I	Signature Sheet
Appendix II	Membership of the PPPG Development Group Template
Appendix III	Conflict of Interest Declaration Form Template
Appendix IV	Membership of Approval Governance Group Template
Appendix V	Alcohol Based Hand Rub Technique Poster
Appendix VI	Hand Washing Technique Poster
Appendix VII	Respiratory Hand Hygiene Posters
Appendix VIII	Cleaning Checklist for contract cleaner
Appendix IX	Appendix IX Decontamination of RIMD in single surgeries
Appendix X	Testing of RIMD equipment – Glossary
Appendix XI	Ultrasonic Cleaner tracing and test sheet
Appendix XII	Washer Disinfector tracing and test sheet
Appendix XIII	Steriliser tracing and test sheet
Appendix XIV	Procedure for the manual cleaning of dental instruments
Appendix XV	Sample Disinfection Record
Appendix XVI	Procedure for Testing Dental Unit Waterlines
Appendix XVII	Segregation and Packaging of Healthcare Risk and Non Risk Waste poster

10.0 ACKNOWLEDGEMENTS

This guideline is based on an adaptation of the Australian Guidelines for the Prevention and Control of Infection in Healthcare (2019). The permission of the National Health and Medical Research Council of Australia to use and adapt this guideline is gratefully acknowledged. The Australian Guidelines for the Prevention and Control of Infection in Healthcare (2019) is available at the following link <https://www.nhmrc.gov.au/about-us/publications/australian-guidelines-prevention-and-control-infection-healthcare-2019> and is also available at <https://app.magicapp.org/app#/guideline/3333>

This guideline differs in a number of points from the Australian Guidelines for the Prevention and Control of Infection in Healthcare (2019). The responsibility for issue of this document in its entirety as the National Guideline for Infection Prevention and Control in HSE Dental and Orthodontic Services rests with the Clinical Standards for Oral Health Subgroup.

Further acknowledgements:

The Clinical Standards for Oral Health Subgroup acknowledges all those who engaged in the stakeholder consultation process.

The Clinical Standards for Oral Health Subgroup acknowledges the following people in particular, whose expert opinion was sought on IPC issues;

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Caroline Conneely, Quality Improvement Division -National Decontamination Safety Programme Lead (HSE)
Professor Martin Cormican, HCAI National Clinical Lead (HSE)
Dr Anne Sheehan, Public Health Lead (HSE)

Appendix II:

Membership of the PPPG Development Group (Template)

Please list all members of the development group (and title) involved in the development of the document.

Type Name here Type Title here	Signature: _____ Date: _____
Type Name here Type Title here	Signature: _____ Date: _____
Type Name here Type Title here	Signature: _____ Date: _____
Type Name here Type Title here	Signature: _____ Date: _____
Chairperson: Type Name here Type Title here	Signature: _____ Date: _____



CONFLICT OF INTEREST DECLARATION

This must be completed by each member of the PPPG Development Group as applicable

Title of PPPG being considered:

Please circle the statement that relates to you

1. I declare that I DO NOT have any conflicts of interest.

2. I declare that I DO have a conflict of interest.

Details of conflict (Please refer to specific PPPG)

(Append additional pages to this statement if required)

Signature

Printed name

Registration number (if applicable)

Date

The information provided will be processed in accordance with data protection principles as set out in the Data Protection Act. Data will be processed only to ensure that committee members act in the best interests of the committee. The information provided will not be used for any other purpose.

A person who is covered by this PPPG is required to furnish a statement, in writing, of:

(i) The interests of the person, and

(ii) The interests, of which the person has actual knowledge, of his or her spouse or civil partner or a child of the person or of his or her spouse which could materially influence the person in, or in relation to, the performance of the person's official functions by reason of the fact that such performance could so affect those interests as to confer on, or withhold from, the person, or the spouse or civil partner or child, a substantial benefit.

Appendix IV:


Membership of the Approval Governance Group (Template)

Please list all members of the relevant approval governance group (and title) who have final approval of the PPPG document.

Type Name here Type Title here	Signature: _____ Date: _____
Type Name here Type Title here	Signature: _____ Date: _____
Type Name here Type Title here	Signature: _____ Date: _____
Type Name here Type Title here	Signature: _____ Date: _____
Chairperson: Type Name here Type Title here	Signature: _____ Date: _____

How to Handrub?

RUB HANDS FOR HAND HYGIENE! WASH HANDS WHEN VISIBLY SOILED

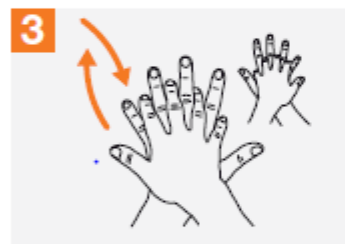
 Duration of the entire procedure: 20-30 seconds



1a Apply a palmful of the product in a cupped hand, covering all surfaces;



2 Rub hands palm to palm;



3 Right palm over left dorsum with interlaced fingers and vice versa;



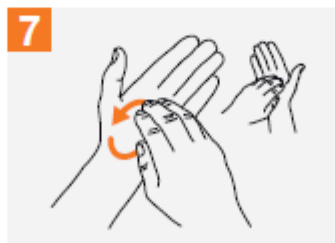
4 Palm to palm with fingers interlaced;



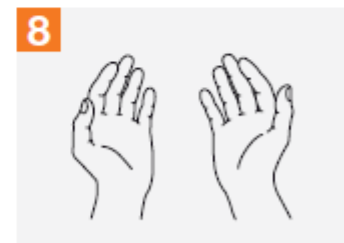
5 Backs of fingers to opposing palms with fingers interlocked;



6 Rotational rubbing of left thumb clasped in right palm and vice versa;



7 Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



8 Once dry, your hands are safe.



World Health Organization




Patient Safety
A World Alliance for Safer Health Care



SAVE LIVES
Clean Your Hands

How to Handwash?

WASH HANDS WHEN VISIBLY SOILED! OTHERWISE, USE HANDRUB

 Duration of the entire procedure: 40-60 seconds



0 Wet hands with water;



1 Apply enough soap to cover all hand surfaces;



2 Rub hands palm to palm;



3 Right palm over left dorsum with interlaced fingers and vice versa;



4 Palm to palm with fingers interlaced;



5 Backs of fingers to opposing palms with fingers interlocked;



6 Rotational rubbing of left thumb clasped in right palm and vice versa;



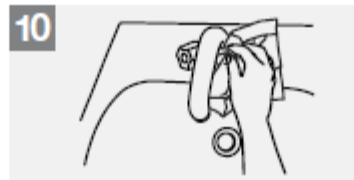
7 Rotational rubbing, backwards and forwards with clasped fingers of right hand in left palm and vice versa;



8 Rinse hands with water;



9 Dry hands thoroughly with a single use towel;



10 Use towel to turn off faucet;



11 Your hands are now safe.

Guidelines for hand hygiene in Irish healthcare settings - Update of 2005 guidelines (January 2015)
Royal College of Physicians of Ireland/HSE 2015

COVER YOUR COUGH AND SNEEZE THE RIGHT WAY



DO

Use a tissue and place it immediately in the bin.
Wash your hands or use a hand sanitiser.



DO

Cough or sneeze into your upper sleeve.
Germs won't spread through your clothing.



DON'T

Cough or sneeze into your hands. You'll end up
spreading germs to everything you touch.



Building a
Better Health
Service

Seirbhís Sláinte
Níós Fearr
& Forbairt



COVER YOUR COUGH AND SNEEZE



Stop the spread of germs that make people sick



When you cough or sneeze
cover your nose and mouth
with a tissue



or

Cough or sneeze into your
elbow, not your hands.



Throw away your tissue!

Clean your hands after
coughing or sneezing.

Thanks!



Building a
Better Health
Service

Seirbhíse Sláinte
Níosa Fearr
& Forbairt



Appendix VIII Sample Cleaning Checklist for contract cleaner

Element	Daily	Weekly	Monthly	Other
High Risk: Clinical areas including dental surgery, local decontamination unit (LDU)				
Dental patient chair - excluding upholstery	√			
Manual handling equipment e.g. hoists, ramps		Spot Check		Full clean 6 monthly
High surface of patient overhead dental light		Spot Check		Clean on request and as per instruction from dental staff
Non clinical worktops/countertops	√			
Alcohol Hand Gel/Soap Containers/Dispensers/Brackets and Paper Towel Holders	√			
Replenishment of consumables	√			Local policy will dictate who does this and how
Sinks and basins	√			
Switches, sockets and data points	√			
Waste receptacles (non-clinical) (inside and out)	√			
Walls	Spot Check			Full clean six monthly
Ceiling	Spot Check			Full clean annually
All doors (except handles)		√		Spot clean as required
Door handles, push plates and keypads	√			
All internal glass and glazing, including partitions and insides of window glass		√		Spot clean as required
Mirrors and pictures	√			
Radiators (including the backs of radiator)		√		

Ventilation grilles extract and inlets			Spot clean as required	Full clean 6 monthly
Floors (hard and soft)	√			
Electrical items e.g. overhead lights, radios, clocks, televisions			√	Spot clean as required
Medical Fridge (external surface only)		√		
High surfaces		√		
Low surfaces	√			
Seating/Chairs/Stools		√		
Lockers			√	
Tables/Desks		√		Spot clean as required
Notice Boards			√	
Cupboards/cabinet/drawer including handles and knobs (external surfaces)			√	Spot clean as required
All dispensers/holders/display units			√	Spot clean as required
Computers/Telephones/Office Equipment		√		
Curtains (windows and cubicle) and blinds			√	Spot clean as required Full clean 6 monthly
Step ladder, foot stools etc.			√	Spot clean as required Full clean 6 monthly
Fans		Spot check		Full clean 6 monthly
Pest control devices			√	Spot clean as required

HSE National Guideline for Infection Prevention and Control in HSE Dental and Orthodontic Services

 PPPG Reference Number:
 NOHO PPPG 001

 Version No:
 1

 Approval Date:
 November 2019

 Revision Date:
 November 2022

Significant risk: X-ray room, recovery room				
Manual handling equipment e.g. hoists, ramps		Spot Check		Full clean 6 monthly
Non clinical worktops/countertops	√			
Alcohol Hand Gel/Soap Containers/Dispensers/Brackets and Paper Towel Holders	√			
Replenishment of consumables	√			Local policy will dictate who does this and how
Sinks and basins	√			
Switches, sockets and data points	√			
Waste receptacles (non-clinical) (inside and out)	√			
Walls	Spot Check			Full clean annually
Ceiling	Spot Check			Full clean annually
All doors (except handles)		√		Spot clean as required
Door handles, push plates and keypads	√			
All internal glass and glazing, including partitions and insides of window glass		√		Spot clean as required
Mirrors and pictures		√		
Radiators (including the backs of radiator)			√	
Ventilation grilles extract and inlets			Spot clean as required	Full clean 6 monthly
Floors (hard and soft)	√			
Electrical items e.g. overhead lights, radios, clocks, televisions			√	Spot clean as required

HSE National Guideline for Infection Prevention and Control in HSE Dental and Orthodontic Services

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Medical Fridge (external surface only)		√		
High surfaces		√		
Low surfaces	√			
Seating/Chairs/Stools		√		
Lockers			√	
Tables/Desks		√		Spot clean as required
Notice Boards			√	
Cupboards/cabinet/drawer including handles and knobs (external surfaces)			√	Spot clean as required
All dispensers/holders/display units			√	Spot clean as required
Computers/Telephones/Office Equipment		√		
Curtains (windows and cubicle) and blinds			√	Spot clean as required Full clean 6 monthly
Step ladder, foot stools etc.			√	Spot clean as required Full clean 6 monthly
Fans		Spot check		Full clean 6 monthly
Pest control devices			√	Spot clean as required

HSE National Guideline for Infection Prevention and Control in HSE Dental and Orthodontic Services

 PPPG Reference Number:
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 Version No:
 1

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Moderate risk: Waiting room, store room, dental personnel offices, changing/locker room, dental plant room				
Non clinical worktops/countertops	√			
Alcohol Hand Gel/Soap Containers/Dispensers/Brackets and Paper Towel Holders	√			
Replenishment of consumables	√			Local policy will dictate who does this and how
Sinks and basins	√			
Switches, sockets and data points	√			
Waste receptacles (non-clinical) (inside and out)	√			
Walls	Spot clean			Full clean annually
Ceiling	Spot clean			Full clean annually
All doors (except handles)	Spot clean		√	
Door handles, push plates and keypads	√			
All internal glass and glazing, including partitions and insides of window glass		√		Spot clean as required
Mirrors and pictures	Spot Check	√		
Radiators (including the backs of radiator)			√	
Ventilation grilles extract and inlets			Spot clean as required	Full clean 6 monthly
Floors (hard and soft)	√			
Electrical items e.g. overhead lights, radios, clocks, televisions			√	Spot clean as required
Medical Fridge (external surface only)		√		

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High surfaces		√		
Low surfaces	√			
Seating/Chairs/Stools		√		
Lockers			√	
Tables/Desks	Spot clean	√		
Notice Boards			√	
Cupboards/cabinet/drawer including handles and knobs (external surfaces)			√	Spot clean as required
All dispensers/holders/display units			√	Spot clean as required
Computers/Telephones/Office Equipment		√		
Curtains (windows and cubicle) and blinds			√	Spot clean as required Full clean 6 monthly
Step ladder, foot stools etc.			√	Spot clean as required Full clean 6 monthly
Fans		Spot check		Full clean 6 monthly
Pest control devices			√	Spot clean as required

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Sample cleaning checklist for dental and orthodontic staff

Element	Frequency	Comments
Clinical work surfaces contaminated zone	Between patients	
Dental surfaces environmental zone	Start and end off day	
All clinical and decontamination sinks	End of day	
Dental chair upholstery/controls	Between patients	
Patient overhead light	Between patients	
Delivery unit	Between patients	
Dental unit tubing	Between patients	
X-ray machine, CR Reader, Radiographic processor and panels	Only if used (external - Spot clean as required)	
Aspirating unit, tubing and spittoon	Between patients	
Curing light surface	Between patients	
Amalgamator surfaces and apex locator	Between patients	
Cavitron surfaces	Between patients	
Operatory/Nurse stool upholstery	Daily	
Base unit shelves/cup board	Monthly	
Dental suction unit tubing/tubing	Between patients	
Ultrasonic Cleaner	End of the day Refer to 10.2. (external - Spot clean as required)	
Washer disinfecter (external - Spot clean as required)	End of the day Refer to 10.3. (external - Spot clean as required)	
Steriliser (external - Spot clean as required)	End of the day Refer to 10.5. (external - Spot clean as required)	

The above is not intended to be an exhaustive list of all items or equipment used. The manufacturer instructions must always be followed for decontamination.

Appendix IX Decontamination of RIMD in single surgeries

Single surgeries with an Ultrasonic Cleaner

Zoning

- The dental surgery must have clearly designated zones to facilitate the decontamination and sterilisation of instruments. Decontamination begins in the “dirty/contaminated” zone and follows a flow to the bagging and sterilisation of clean instruments in the “clean” zone.
- Dirty instruments after use should be placed in a sealed container located in the “contaminated” zone.
- In a single surgery the location of the sealed container of contaminated instruments should indicate the start of the flow from contaminated to a clean zone.
- The flow from contaminated to clean must not be interrupted.

Use of sink

- A single surgery must have a designated Hand Hygiene sink and an instrument rinsing sink.
- The sink which is used for rinsing instruments should not be used as a designated Hand Hygiene sink.

Decontamination process

- Dirty instruments are removed from the sealed container and placed directly into the basket of the Ultrasonic Cleaner
- They can be rinsed if visibly soiled prior to the ultrasonic cleaning cycle.
- After ultrasonic cleaner cycle, if instruments are still dirty they are returned to the ultrasonic cleaner for further cleaning.
- Once satisfactorily cleaned, the instruments are then rinsed in the sink and must be visibly checked under task lighting.
- If unavoidable, retained debris can be manually removed. Refer to Appendix XIV Manual Cleaning of Instruments.
- Where no washer disinfector is in use, instruments once cleaned should be dried with lint free paper towel before bagging.
- Cleaned instruments once bagged and labelled are placed in the autoclave for sterilisation.

Single surgeries with a Washer Disinfector (Refer to 10.3)

- If a Washer Disinfector is available in the surgery, the instruments should be processed through the Washer Disinfector, bagged, and sterilised.

Appendix X Testing of RIMD equipment – Glossary

<p>Cleaning Efficacy Visual Test</p>	<p>This happens after the washer disinfectant or ultrasonic cleaner and before the autoclave. Each instrument that has been cleaned must be inspected under an illuminated magnifier to ensure that all dirt and debris has been successfully removed. Any instruments that are found to still have debris must go through the cleaning stage again.</p>
<p>Automatic Control Test</p>	<p>This test is used to determine that all the stages of the steriliser are consistent with previous days. If the steriliser has a printer or data logger this is carried out automatically, providing that cycle monitoring is present (please consult the manufacturer if you are unsure). If not, this test will involve the user timing each stage and recording the times in a log book. The test will then be signed off daily but only if the results are consistent with the previous day.</p>
<p>Cleaning Efficacy Test</p>	<p>This test is designed to challenge the cleaning efficacy of the washer disinfectant and ultrasonic cleaner and tests if the equipment's ability to perform adequately. A test soil strip is placed into the equipment and a cycle is commenced. Once finished the test strip is checked for any remaining soil residue and the results are recorded e.g. Browns load checker, washcheck.</p>
<p>Protein residue test</p>	<p>This test is used to ensure that the instruments which have been cleaned are free from protein that is not visible to the naked eye. Washers may fail to clean for many reasons. Tests should provide a means of monitoring the variables that influence the effectiveness of a washer. Some of these variables are water quality, time, detergent, enzyme, temperature, pH level, agitation, speed, initial temperature, drying time, obstructions, and insufficient amount of chemicals. After the cleaning process a random instrument is taken from the load and a protein detection method is used to determine the cleanliness using products such as Resistest (Steris) Clean-Trace (3 M), Pyromol (Pereg) valisafe and Medi Check.</p>
<p>Ultrasonic Activity Test Foil Wand Sono check</p>	<p>This is designed to ensure that the cavitation effect of the ultrasonic is working effectively and evenly throughout the ultrasonic cleaner.</p> <p>Foil test Using strips of adhesive tape across the top of the cleaner, suspend nine strips of prepared foil in the cleaner in a 3x3 grid. Ensure that the rolled bottom end of each foil strip is no more than 10mm above, but not touching the bottom of the cleaner. Run the cleaner for a pre-determined time, remove the foil strips and blot dry and record the results. The strips should all reflect similar erosion patterns.</p>

Wand test

Ultrasonic Activity Meter (wand) should be used to measure the level of ultrasonic activity throughout the tank.

1. It is recommended that the tank be divided into 9 sections and measurements taken at just below the surface and at least 3 cm from the base of the cleaner, where the depth of the tank allows.
2. Insert the probe into the cleaning fluid inside the tank. To take a reading press and hold the button on the meter. Record the results displayed on both the Frequency and Power displays.
3. Repeat this in the 9 specified places at the two different depths throughout the cleaner, including each corner.
4. Record the results so that future tests can be compared. If there is a reduction in the readings over time, your ultrasonic cleaning system may not be working at full efficiency and may need validation and servicing

Sono Check

1. Select the appropriate number of SonoCheck TM vials that matches the size of the equipment to be tested.
2. Place the SonoChecks in an empty ultrasonic basket and place the basket in the ultrasonic cleaner that has been de-gassed.
3. Run the equipment as directed by the ultrasonic manufacturer and record the test results on the "Log Sheet".
4. All SonoChecks should change from blue/green to yellow within specified time. The time needed for the colour change will indicate the level of energy and degree of cavitation provided by the ultrasonic cleaner.
5. A change slower than average will indicate a weak spot.
6. A negative result will indicate a blind spot of ultrasonic energy. In case of an unsatisfactory result, refer to the SonoCheck guide.

Interpretation of results:

- Colour change from blue/green to yellow indicates presence of cavitation energy.
- Time for colour change indicates the strength of cavitation energy.
- Failure for colour change to yellow indicates a failure to achieve sufficient cavitation energy to clean.
- Ultrasonic energy is localised and failure to achieve colour change may indicate one or more sonic transducers are failing.

Steam Penetration Test	<p>This test is designed to ensure that a successful vacuum has been achieved so the steam is able to penetrate the internal lumen (Helix) or wrapped devices (Bowie/Dick). Helix test is preferable in Dental settings unless Bowie/Dick recommended by autoclave manufacturer.</p> <p>Please consult with the autoclave manufacturer as to which test is needed.</p>
Air Leakage Test	<p>The test is designed to show that, should a leak be detected, the machine should fail the cycle.</p> <p>Dependent on the age of the autoclave this may be carried out automatically. If you are unsure please consult the manufacturer.</p>

Appendix X (i) Process Challenge Device and Chemical and Biological Indicators

- **Process Challenge Device (PCD):** A process challenge device (PCD) is a test device intended to provide a challenge to the sterilisation process (Bowie and Dick and Helix)
- **Steam Chemical indicators (CI):** (internal and external): use sensitive chemicals to assess physical conditions such as time, temperature and presence of **steam**. **Chemical indicators** are used outside and inside of packages to show that it has undergone a sterilisation cycle.
- **Biological indicators (BI):** are designed to demonstrate whether the conditions during a **steam** (autoclave) cycle were adequate to achieve a defined level of microbial inactivation

The chemical indicators described in ISO 11140 are classified into six groups. The classification has no hierarchical significance.

Class 1 Process Indicators	<ul style="list-style-type: none"> • Process Indicators that differentiates processed from non-processed items • Used with individual units (e.g., packs, containers) to indicate that the item has been directly exposed to the sterilisation process • Usually applied to the outside of packages • Respond to one or more critical process variables • Indicator tapes and Indicator labels
Class 2 Indicators For use in Specific Tests	<ul style="list-style-type: none"> • Indicator for use in specific test procedures as defined in steriliser/sterilisation standards (e.g., air-detection, steam penetration) • Used for equipment control to evaluate the sterilizer performance • Bowie-Dick test/ Helix
Class 3 Single Variable Indicators	<ul style="list-style-type: none"> • Single Variable Indicator that reacts to a single critical variable in the sterilisation process to indicate when a specified value has been reached (e.g., temperature at a specific location in the chamber) • May be used for monitoring process control but not as useful as class IV or class V indicators • May be used for exposure control monitoring (e.g., temperature at a specific location in the chamber) • Temperature tubes
Class 4 Multi-variable Indicators	<ul style="list-style-type: none"> • Multi-variable Indicator that reacts to two or more critical variables in the sterilisation cycle under the conditions specified by the manufacturer
Class 5 Integrating Indicators	<ul style="list-style-type: none"> • Integrating Indicator that reacts to all critical variables in the sterilisation process (time, temperature, presence of steam) and has stated values that correlate to a BI at three time/temperature relationships • Responds to critical variables in the same way that a BI responds • Equivalent to, or exceeds, the performance requirements of BIs • Used for process control
Class 6 Emulating Indicators	<ul style="list-style-type: none"> • Emulating Indicator that reacts to all critical variables (time, temperature, presence of steam) for a specified sterilisation cycle (e.g., 3.5, 10 min., 18 min., 40 min.) • Used as internal CI for process control • A different Class VI emulating indicator is required for each sterilisation cycle time and temperature used

116

HSE National Guideline for Infection Prevention and Control in HSE Dental and Orthodontic Services

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Appendix XIV Procedure for the manual cleaning of dental instruments.

The Dental Council Code of Practice Relating to: Infection Prevention and Control (2015) states 'Manual cleaning is the least acceptable of the three methods of cleaning instruments, but it 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 practiced, staff must be 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*
- *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.*

- Always maintain a contaminated to clean workflow as this will help the cleaning process.
- Perform Hand Hygiene
- Wear PPE, heavy duty gloves and protective glasses.
- Prepare sink(s) and setting down area.
- Dismantle and open instruments as applicable for immersion.
- Fill the sink with the correct amount of water and HSE approved detergent as advised by the manufacturer. Use the correct temperature for the cleaning solution. A thermometer can be used to monitor the temperature during the cleaning procedure as advised by manufacturer. The water temperature should be below 45 C to avoid coagulating proteins.
- Fully immerse the instruments in the solution and keep under the surface during the cleaning process to prevent the creation of aerosols.
- Scrub the instruments with the long handles nylon bristle brush (soft to medium bristles).
- Following cleaning, drain the water and avoid splashing. If the water is heavily soiled it may be necessary to repeat the cleaning process. Drain off any excess cleaning solution before rinsing.
- After each use brushes should be washed in hot water using the manufacturer's recommended detergent to remove soil and then stored dry head up. (If disposable brushes are used they should be disposed of after use). Reusable brushes should be replaced as advised by manufacturer or when worn.
- The final rinse can be carried out in the clean sink (if two sinks) or if there is only one sink a bowl placed in the sink can be used for the final rinse. Soft water, RO water or distilled water can be used for the final rinse. After rinsing the instruments should be dried.
- Inspect instruments under task lighting. Instruments that are not clean must be cleaned again.
- Lubricate instruments as required and wrap for sterilisation.
- Dispose of cleaning materials as appropriate.
- Replace cleaning solution and the rinse water after use
- Complete any relevant documentation.

Appendix XVI Procedure for Testing Dental Unit Waterlines

a) Aerobic Heterotrophic Bacterial Count (six monthly)

The following outlines the procedure for testing Dental Unit Waterlines for Aerobic Heterotrophic Bacterial Count if sampling done by clinic staff. This may be carried out by the testing company on your behalf.

Label sample water bottle (usually 50-100 ml tubes/bottles containing neutraliser supplied by laboratory doing the testing). The labelling information should contain details of each waterline to be sampled, sender's reference, person sampling, date and time of sampling. Waterline disinfection chemicals leave a residue in waterline output water that requires neutralisation prior to determination of bacterial counts (e.g. sodium thiosulphate is used to neutralise chlorine etc.) Therefore the laboratory should be advised of the waterline treatment system in use prior to testing so that they can supply the correct neutraliser as this can influence the result.

- Flush the 3:1 air/water syringe waterline, instrument hose waterline, patient cup filler waterline (where present) and cuspidor rinse waterline (where present) outlets of the dental unit for 2 minutes before collecting water samples.
- Samples taken from clinic source water and either the 3:1 air/water syringe or high speed waterline.
- Wearing gloves open the tube/bottle and collect 20 ml of water from chosen outlet, and holding the bottle at an angle while collecting sample. Close and label sample.
- These water samples should be tested for aerobic heterotrophic bacterial count on R2A agar at 22°C and 37°C following 7 to 10 days incubation. There is no standard in Ireland for aerobic heterotrophic bacterial counts for dental water supply. For dental units, cfu counts below 100 colony forming units (CFUs) per ml of water are considered good. Counts should not exceed 500 CFU/ml.

Pseudomonas aeruginosa

The *Pseudomonas aeruginosa* test should be carried out at the same time as the aerobic heterotrophic counts test (six monthly). The *Pseudomonas aeruginosa* test should be carried out in the first year of accredited laboratory testing. If both annual results are negative it does not need to be repeated the following year and testing from then on will be *Legionella* tests and aerobic heterotrophic culture tests.

b) Legionella

The following outlines the procedure for testing Dental Unit Waterlines for Legionella bacteria if sampling done by clinic staff; Annual Testing. This may be carried out by the testing company on your behalf.

- Take 1 litre water sample from the test waterlines (from clinic source water and either the 3:1 air/water syringe or high speed waterline) without flushing.
- Temperature of sample should be recorded.
- Samples for *Legionella* testing should not be refrigerated.
- These water samples should be taken into a sterile sample container containing a neutralisation agent (sodium thiosulphate to neutralise chlorine and/or hydrogen peroxide; other neutralisers may need to be used depending on the waterline disinfectant used).
- If dental water supply contains no *Legionella* bacteria or if counts are low (<100 cfu/litre) the system is under control. *Legionella* tests should be undertaken annually in the spring when water temperatures are more favourable for growth.

Guidance on testing Dental Chair Units (DCU)

Ideally every dental chair unit should be tested. However in a dental multi-clinic a sampling of chairs will be acceptable provided results indicate good quality water and the source water is always tested.

Single Surgery	Test DCU
Double Surgery	Test both DCUs
Triple Surgery	Test 2 DCU's (Rotate next testing cycle)
Four Surgeries	Test 2 DCUs (Alternative 2 DCUs next testing cycle)
Five Surgeries	Test 3 DCUs (Rotate next testing cycle)
Six Surgeries	Test 3 DCUs (Rotate next testing cycle)
Seven Surgeries	Test 3 DCUs (Rotate next testing cycle)
Eight Surgeries	Test 4 DCUs (Rotate next testing cycle)
Nine Surgeries	Test 5 DCUs (Rotate next testing cycle)
10 Surgeries	Test 5 DCUs (Rotate next testing cycle)

Appendix XVII Segregation and Packaging of Healthcare Risk and Non Risk Waste poster

http://www.rcsi.ie/files/facultyofnursingmidwifery/20190208094954_waste%20poster%20edition%202014.pdf

SEGREGATION & PACKAGING OF HEALTHCARE RISK & NON-RISK WASTE

RISK WASTE		
YELLOW BAG	YELLOW SHARPS BIN (with blue or red lid)	YELLOW 30/60 LITRE RIGID BIN (with yellow lid)
 <ul style="list-style-type: none"> All blood-stained items and all items soiled with body fluids assessed as infectious Suction catheters & tubing Incontinence waste from known or suspected enteric infections <p style="color: red; font-weight: bold; margin-top: 10px;">* NO SHARPS OR FREE LIQUIDS</p>	 <ul style="list-style-type: none"> Needles, Syringes & Scalpels Contaminated slides & glass Sharps tips of clear IV giving sets Blood stained glass Stitch cutters Razor wires/trocars Razors <p style="color: red; font-weight: bold; margin-top: 10px;">* NO FREE LIQUIDS</p>	 <ul style="list-style-type: none"> Blood administration sets (never disconnect line from bag) Contained blood and body fluids Non-cultured laboratory waste (including autoclaved microbiological cultures) Disposable suction liners Redivac drains (ensure drain closure sealed) Sputum containers Chest drains <p style="color: red; font-weight: bold; margin-top: 10px;">* NO SHARPS OR FREE LIQUIDS</p>
RISK WASTE		
YELLOW 30/60 LITRE RIGID BIN (with purple lid)	YELLOW SHARPS BIN (with purple lid)	YELLOW RIGID BIN (with black lid)
 <ul style="list-style-type: none"> Cytotoxic drugs including infusion lines, left over drug preparations and personal protective equipment used. Small quantities of residual medicines or pharmaceuticals left over after administration to patients. <p style="color: red; font-weight: bold; margin-top: 10px;">* NO SHARPS OR FREE LIQUIDS</p>	 <ul style="list-style-type: none"> Contaminated cytotoxic sharps, needles, syringes, sharp instruments and broken glass <p style="color: red; font-weight: bold; margin-top: 10px;">* NO FREE LIQUIDS</p>	 <ul style="list-style-type: none"> Non-autoclaved microbiological cultures Large / recognisable anatomical body parts Placentas with additional leak proof containment Large solid metal objects and instruments <p style="color: red; font-weight: bold; margin-top: 10px;">* NO SHARPS OR FREE LIQUIDS</p>
NON-RISK WASTE	RECYCLABLE WASTE	
CLEAR BAG	GREEN BAG	
 <ul style="list-style-type: none"> Incontinence wear (from non-infectious patients) Oxygen face masks Empty urinary drainage and empty ostoma drainage bags Clear tubing (e.g. oxygen, urinary catheters, ventilator, nasogastric, IV lines with tips removed) Enteral feeding equipment Non contaminated gloves, aprons and masks Empty continuous ambulatory peritoneal dialysis (CAPD) bags All other household non-risk, non-recyclable waste <p style="color: red; font-weight: bold; margin-top: 10px;">* NO SHARPS OR LIQUIDS</p>	 <ul style="list-style-type: none"> Mixed Dry Recyclables - Paper, Cardboard, Tetra Packs, Plastic Packaging / Wrappings, Tins/Cans, Plastic Bottles <p style="color: red; font-weight: bold; margin-top: 10px;">* NO SHARPS OR LIQUIDS</p>	

PLEASE NOTE:

- 1) Do not use waste bags for sharp or breakable items or for liquids
- 2) Close healthcare risk waste bags using "swan neck" when 2/3 full
- 3) Sign and seal sharps bins correctly when 3/4 full or at manufacturers fill line
- 4) Label all healthcare risk waste appropriately at point of generation
- 5) Apply traceability tags to all healthcare risk waste at point of generation
- 6) Use long sharps bins for large trocars, knives, stapling guns etc.
- 7) For all 30/60 litre rigid bins, add absorbent material or gelling agent in sufficient quantities to hold the fluid and prevent leakage.
- 8) For further details on healthcare risk waste, please refer to www.dohc.ie/publications



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