☐ ADMINISTRATE POLICY & PROCEDURE (APP)	☐ INSTITUTIONAL POLICY & PROCEDURE (IPP) ☐ INTERDEPARTMENTAL ☐ INTERNAL

TITLE		POLICY NUMBER/V#
Infection Control in Dental Practice		MMC- DENTAL – (01) 01
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APPLIES TO	RESPONSIBILITY
All dental practice	1. Department Head: Ultimate responsibility of ensuring that the Dental Department is adhering to established Infection Control policy. 2. Department Head: Appoints the Dental Department Infection Control liaison Officer. 3. Infection Control liaison Officer: Acts as resource person to other dental staff arranges for quarterly IC in-service. 4. Staff: Have working knowledge of Infection Control policies and Blood borne Pathogen Exposure Control Plan. Adhere to established Infection Control policy and procedures 5. Dental Technicians: All personnel assigned duties in sterilization areas or function as surgical assistants will receive Additional training in aseptic and sterilization techniques.

1. PURPOSE:

1.1 To prevent cross infection to Dental patients and dental healthcare workers who may be exposed to a variety of microorganisms via blood, oral, or respiratory secretions.

2. DEFINITION:

2.1 **DHCP**: dental healthcare personnel

2.2 **Standard Precautions:** are the minimum infection prevention practices that apply to all patient care, regardless of suspected or confirmed infection status of the patient, in any setting where health care is delivered.

2.3 **Transmission-based precautions:** a set of practices that apply to patients with documented or suspected infection or colonization with highly transmissible or epidemiologically important pathogens for which precautions beyond the standard precautions are needed to interrupt transmission in healthcare settings.

2.4 Alcohol-based hand rub: an alcohol-containing preparation designed for application to the hands to reduce the number of viable microorganisms on the hands.

2.5 **Antimicrobial soap:** a soap (i.e., detergent) containing an antiseptic agent.

2.6 **Antiseptic:** a germicide that is used on skin or living tissue for the purpose of inhibiting or destroying microorganisms.

2.7**Antiseptic hand rub:** the process of applying an antiseptic hand-rub product to all surfaces of the hands to reduce the number of microorganisms present.

2.8 **Antiseptic hand wash:** washing hands with water and soap or detergents containing an antiseptic agent.

2.9 **Hand hygiene:** a general term that applies to hand washing, antiseptic hand wash, antiseptic hand rub, and surgical hand antisepsis.

2.10 **Hand washing:** washing hands with plain (i.e., non-antimicrobial) soap and water.

2.11 **Surgical hand scrub:** an antiseptic-containing preparation that substantially reduces the number of microorganisms on intact skin; it is broad-spectrum, fast-acting, and persistent

2.12 **Personal Protective Equipment (PPE):** specialized clothing or equipment worn by an employee for protection against a hazard (e.g., gloves, masks, protective eyewear, and gowns).

2.13 **DHCP:** Dental Health Care Personnel.

3. Policy:

3.1 All dental healthcare personnel to ensure full understanding of application of standard precautions in the dental
And hand hygiene in dental practice.

3.2 to ensure full understanding on the best practice of use of personal protective equipment in dental practice.

3.3 to ensure full understanding on the best practice of contact dermatitis and latex hypersensitivity

3.4 to ensure full understanding on the best practice of respiratory hygiene and cough etiquette in dental practice

3.5 to ensure full understanding on the best practice of sharps safety in dental practice.

3.6 to ensure full understanding on the best practice of safe injection in dental practice.

3.7 l to ensure full understanding on the best practice of Sterilization and Disinfection of Patient-Care Items.

3.8 to ensure full understanding on the best practice of infection control in transporting contaminated Items to CSSD

3.9 to ensure full understanding on the best practice of storing sterile items in clinics.

3.10 To ensure full understanding on the best practice of Opening of Instrument Packages.

3.11 to ensure full understanding on the best practice of environmental infection control in dental settings.

3.12 to ensure full understanding on the best practice of treatment of dental unit waterlines

3.13 To ensure full understanding on the best practice of treatment of water quality monitoring.

3.14 To ensure full understanding on the best practice of Waste Management in dental practice.

3.15 To ensure full understanding on the best practice of aseptic techniques in dental practice.

3.16 To ensure full understanding on the best practice of single-use (disposable) devices in dental practice.

3.17 to ensure full understanding on the best practice of infection control in oral surgery.
3.18 To ensure full understanding on the best practice of immunizations for dental healthcare personnel
3.20 full understanding on the best practice of management of occupational exposures to blood and other
Body fluids in dental practice.
3.21 To ensure full understanding on the best practice of patient screening and evaluation in dental practice.

4. PROCEDURE:

The standard precautions and Transmission-based Precautions

4.1 **standard precautions**

4.2.1. The standard precautions should be applied to all patient care, regardless of suspected or confirmed infection status of the patient, in any setting where healthcare is delivered.
4.2.2. These practices are designed to both protect DHCP and prevent DHCP from spreading infections among patients.
4.2.3. Standard precautions should be applied to contact with:
4.2.3.1. Blood; all body fluids, secretions, and excretions (except sweat), regardless of whether they contain blood; Non-intact skin, mucous membranes, saliva has always been considered a potentially infectious material in dental infection control.
4.2.4. Standard Precautions include:
1. Hand Hygiene:
2. Use of personal protective equipment
3. Respiratory hygiene/cough etiquette.
4. Safe injection practices.
5. Sterilization of instruments and devices
6. Cleaning and disinfection of environmental surfaces

4.3. Transmission-based Precautions

In addition to Standard Precautions used for all patients, Transmission-based Precautions are used for patients with specific diseases or pathogens.
Transmission-based Precautions are used alone or in combination and include the following set of precautions, which are recommended to contain highly transmissible and/or epidemiologically important agents and are based on the mode of transmission of the specific pathogen:

4.3.1. Contact Precautions:

A. Contact Precautions are used for diseases transmitted by contact with the patient or the patient's environment.
B. Diseases caused by organisms that have been demonstrated to cause heavy environmental contamination, such as vancomycin-resistant Enterococcus (VRE), methicillin-resistant Staphylococcus aureus (MRSA), Clostridium difficile, or respiratory

syncytial virus (RSV) in infants, children, and immunocompromised adults, require gowns and gloves on room entry.

4.3.1.1. Personal Protective Equipment (PPE):

Wear a gown and gloves on room entry. Change the gown and gloves between patients even if both patients share a room and both are on Contact Precautions.

4.3.2. Droplet Precautions:

Droplet Precautions prevent transmission of diseases caused by large respiratory droplets that are generated by coughing, sneezing, or talking. Diseases transmitted by the droplet route include, but are not limited to, influenza, mumps, and bacterial meningitis due to Neisseria meningitides.

4.3.2.1. Personal Protective Equipment:

Wear a surgical mask on room entry. Handle items contaminated with respiratory secretions with gloves. Change PPE between patients.

4.3.3. Airborne Precautions:

A-Airborne Precautions are used to prevent transmission of infectious organisms that remain suspended in the air and travel great distances.

B. These diseases include measles, smallpox, chickenpox, pulmonary tuberculosis, avian influenza, and possibly severe acute respiratory syndrome (SARS)-associated coronavirus.

Personal Protective Equipment:

1) Wear a fit-tested approved N-95 or higher level respirator for respiratory protection when the patient has suspected or confirmed pulmonary tuberculosis or is undergoing procedures where infectious tuberculosis skin lesions would be aerosolized.

2) Respiratory protection is also recommended for all healthcare workers whether vaccinated or unvaccinated against smallpox because of the possibility of genetically altered smallpox virus.

4.4. Hand Hygiene:

1-Wash hands with soap and water when visibly dirty or visibly soiled with blood or other body fluids or after using the toilet.

2- If exposure to potential spore-forming pathogens is strongly suspected or proven, including outbreaks of Clostridium difficile, hand washing with soap and water is the preferred means.

3-Use an alcohol-based hand-rub as the preferred means for routine hand antisepsis if hands are not visibly soiled.

4-. If alcohol-based hand rub is not obtainable, wash hands with soap and water

4.4.1. Perform hand hygiene: 5 moments of hand hygiene: refer to (figure 1)

4.4.2. Hand Hygiene Techniques:

A- Hand Hygiene Technique with Alcohol-Based Formulation: refer to **(figure 2)**

B-Hand Hygiene Technique with Soap and Water: refer to **(figure 2)**

4.4.3. Surgical hand preparation:

1- Remove rings, wrist-watch, and bracelets before beginning surgical hand preparation.

2-Sinks should be designed to reduce the risk of splashes.

3- If hands are visibly soiled, wash hands with plain soap before surgical hand preparation. Remove debris from underneath fingernails using a nail cleaner, preferably under running water.

4- Brushes are not recommended for surgical hand preparation.

5- Surgical hand antisepsis should be performed using either a suitable antimicrobial soap or suitable alcohol-based hand rub, preferably with a product ensuring sustained activity, before donning sterile gloves.

6- When performing surgical hand antisepsis using an antimicrobial soap, scrub hands and forearms for the length of time recommended by the manufacturer, typically 2–5 minutes. Long scrub times (e.g. 10 minutes) are not necessary.

7- When using an alcohol-based surgical hand rub product with sustained activity, follow the manufacturer's instructions for application times. Apply the product to dry hands only. Do not combine surgical hand scrub and surgical hand rub with alcohol-based products sequentially.

8- When using an alcohol-based hand rub, use sufficient product to keep hands and forearms wet with the hand rub throughout the surgical hand preparation procedure.

9- After application of the alcohol-based hand rub as recommended, allow hands and forearms to dry thoroughly before donning sterile gloves

4.5. Personal Protective Equipment

Use of PPE:

1- Gloves:

- Wear gloves when there is potential contact with blood, body fluids, mucous membranes, non-intact skin or contaminated equipment.

- These are the most important dos and don'ts of glove use

i. Wear gloves that fit appropriately (select gloves according to hand size).
ii. Do not wear the same pair of gloves for the care of more than one patient
iii. Do not wash gloves for the purpose of reuse.
iv. Perform hand hygiene before and immediately after removing gloves.
v. Work from "clean to dirty".

vi. Limit opportunities for "touch contamination" to protect yourself, others, and the environment.
vii. Do not touch your face or adjust PPE with contaminated gloves.
viii. Do not touch environmental surfaces except as necessary during patient care.

2-Change gloves:

i. During use if torn and when heavily soiled (even during use on the same patient)
ii. After use on each patient.
iii. Discard in the appropriate receptacle.
iv. Never wash or reuse disposable gloves

Gowns:

a) -Wear a gown to protect skin and clothing during procedures or activities where contact with blood or body fluids is anticipated.
b) -Do not wear the same gown for the care of more than one patient.
c) -Remove gown and perform hand hygiene before leaving the patient's environment (e.g., exam room).

3- Facemasks (Procedure or Surgical Masks):

a) -Wear a facemask when there is potential contact with respiratory secretions and sprays of blood or body fluids (as defined in Standard Precautions and/or Droplet Precautions).
b) -Masks should fully cover the nose and mouth and prevent fluid penetration. Masks should fit snuggly over the nose and mouth. For this reason, masks that have a flexible nose-piece and can be secured to the head with string ties or elastic are preferable.

4- Goggles, Face Shields:

1. Wear eye protection for potential splash or spray of blood, respiratory secretions, or other body fluids.
2. Personal eyeglasses and contact lenses are not considered adequate eye protection
3. Goggles should fit snuggly over and around the eyes or personal prescription lenses.
4. Goggles with anti-fog features will help maintain clarity of vision.
5. When skin protection, in addition to mouth, nose, and eye protection, is needed or desired, a face shield can be used as a substitute for wearing a mask or goggles. The face shield should cover the forehead, extend below the chin, and wrap around the side of the face.

5- Respirators:

-Wear N95-or higher respirators for potential exposure to infectious agents transmitted via the airborne route (e.g. tuberculosis).

- All healthcare personnel that use N95-or higher respirator should be fit tested every (2) years according to MOH requirements.

6- Head and Shoe Covers:

- Head and shoe covers are less frequently used types of PPE, but should be considered if contamination is likely.

- It's not mandated the use of shoe and head covers in dentistry.

-DHCP may want to consider using shoe covers when contamination of footwear is anticipated, such as during surgical procedures where unusually heavy bleeding may be anticipated (e.g., maxillofacial reconstructive surgery and trauma surgery).

-Head covers are optional but may be useful in decreasing contamination of DHCP during ultrasonic scaling, surgical procedures using rotary or ultrasonic instrumentation, and manual decontamination of dental instruments, where spraying and spattering of blood and OPIM may be generated. Head covers also provide maximum protection to patients during surgical procedures.

4.5.1. Sequence of donning PPE (figure 3) and Recommendations for Removing PPE: (figure 4)

4.6. Contact Dermatitis and Latex Hypersensitivity

Contact dermatitis is classified as either irritant or allergic.

4.6.1. Irritant contact dermatitis:

Is common, non-allergic, and develops as dry, itchy, irritated areas on the skin around the area of contact.

4.6.2. Allergic contact dermatitis (type IV hypersensitivity):

- Can result from exposure to accelerators and other chemicals used in the manufacture of rubber gloves (e.g., natural rubber latex, nitrile, and neoprene), as well as from other chemicals found in the dental practice setting (e.g., methacrylate's and glutaraldehyde).
- Allergic contact dermatitis often manifests as a rash beginning hours after contact and, similar to irritant dermatitis, is usually confined to the area of contact. (Refer to table 1).

4.6.3. Latex allergy (type I hypersensitivity to latex proteins):

- It is a serious systemic allergic reaction, usually beginning within minutes of exposure but sometimes occurring hours later and producing varied symptoms.
- More common reactions include runny nose, sneezing, itchy eyes, scratchy throat, hives, and itchy burning skin sensations. -More severe symptoms include asthma marked by difficult
- breathing, coughing spells, and wheezing; cardiovascular and gastrointestinal ailments; and in rare cases, anaphylaxis and death. (Refer to table 1).

4.6.4. Considerations if dental health care personnel are allergic to latex:

- Dental health care personnel who are allergic to latex will need to take precautions at

work and outside the workplace since latex is used in a variety of other common products in addition to gloves.

- If definitively diagnosed with allergy to natural rubber latex (NRL) protein
- Avoid, as far as feasible, subsequent exposure to the protein and only use no latex (e.g., nitrile or vinyl) gloves.
- Make sure that other staff members in the dental practice wear either no latex or reduced protein, powder-free latex gloves.
- Use only synthetic or powder-free rubber dams.

4.6.5. Dental personnel can further reduce occupational exposure to NRL protein by taking the following steps:

- Using reduced protein, powder-free latex gloves.
- Frequently changing ventilation filters and vacuum bags used in latex contaminated areas.
- Checking ventilation systems to ensure they provide adequate fresh or recirculating air.
- Frequently cleaning all work areas contaminated with latex dust.
- Educating dental staff on the signs and symptoms of latex allergies.

4.6.6. Considerations for providing dental treatment to patients with latex allergy:

- Patients with a latex allergy should not have direct contact with latex-containing materials and should be treated in a "latex safe" environment.
- -By obtaining thorough patient health histories and preventing patients from having contact with potential allergens, dental health care professionals can minimize the possibility of patients having adverse reactions.

4.6.7. **Considerations in providing safe treatment for patients with possible or documented latex allergy include (but are not limited to) the following:**

- Screen all patients for latex allergy (e.g., obtain their health history, provide medical consultation when latex allergy is suspected).
- Be familiar with the different types of hypersensitivity—immediate and delayed—and the risks that these pose for patients and staff.
- Consider sources of latex other than gloves. Dental patients with a history of latex allergy may be at risk from a variety of dental products including, but not limited to, prophylaxis cups, rubber dams, and orthodontic elastics.
- Provide an alternative treatment area free of materials containing latex. Ensure a latex-safe environment or one in which no personnel use latex gloves and no patient contact occurs with other latex devices, materials, and products.

4.7. Respiratory hygiene and cough etiquette

4.7.1. Identifying Persons with Potential Respiratory Infection:

A. Facility staff remain alert for any persons arriving with symptoms of a respiratory infection

B. Signs are posted at the reception area instructing patients and accompanying persons to:

1-Self-report symptoms of a respiratory infection during registration

2-Practice respiratory hygiene and cough etiquette (technique described below) and wear a

facemask as needed.

C-The following supplies are provided in the reception area and other common waiting areas:

1- Facemasks, tissues, and no-touch waste receptacles for disposing of used tissues.
1. 2-Dispensers of alcohol-based hand rub.

4.7.2. Respiratory Hygiene and Cough Etiquette:

All persons with signs and symptoms of a respiratory infection (including facility staff) are instructed to:

1- Cover the mouth and nose with a tissue when coughing or sneezing;
2- Dispose of the used tissue in the nearest waste receptacle
3- Perform hand hygiene after contact with respiratory secretions and contaminated objects/materials

Healthcare Personnel Responsibilities:

Healthcare personnel observe Droplet Precautions, in addition to Standard Precautions, when examining and caring for patients with signs and symptoms of a respiratory infection.

These precautions are maintained until it is determined that the cause of the symptoms is not an infectious agent that requires Droplet or Airborne Precautions.

All healthcare personnel are aware of facility sick leave policies, including staff who are not directly employed by the facility but provide essential daily services.

Healthcare personnel with a respiratory infection avoid direct patient contact; if this is not possible, then a facemask should be worn while providing patient care and frequent hand hygiene should be reinforced.

Healthcare personnel are up-to-date with all recommended vaccinations, including annual influenza vaccine.

Staff Communication:

Designated personnel regularly review information on local respiratory virus activity provided by the ministry of health (MOH) to determine if the facility will need to implement enhanced screening for respiratory symptoms

During Periods of Increased Community Respiratory Virus Activity (e.g., Influenza Season):

In addition to the aforementioned infection prevention measures, the following enhanced screening measures are implemented:

When scheduling and/or confirming appointments:

Pre-screen all patients and schedule those with respiratory symptoms to come when the facility might be less crowded, if possible

Instruct patients with respiratory symptoms to don a facemask upon entry to the facility.

If the purpose of the visit is non-urgent, patients with symptoms of respiratory infection are

encouraged to schedule an appointment after symptoms have resolved.

Encourage family members, caregivers, and visitors with symptoms of respiratory infection to not accompany patients during their visits to the facility.

If possible, prepare in advance for the registration staff a daily list of patients with respiratory symptoms who are scheduled for a visit.

Upon entry to the facility and during visit:

At the time of patient registration, facility staff identify pre-screened patients (from the list) and screen all other patients and accompanying persons for symptoms of respiratory infection.

Patients identified with respiratory symptoms are placed in a private exam room as soon as possible; if an exam room is not available, patients are provided a facemask and placed in a separate area as far as possible from other patients while awaiting care.

Patient volume is anticipated to be higher than usual with prolonged wait time at registration:

A separate triage station is established to identify pre-screened patients (from the list) and to screen all other patients and accompanying persons immediately upon their arrival and prior to registration.

Patients identified with respiratory symptoms are registered in a separate area, if possible, and placed immediately in a private exam room; if an exam room is not available, patients are provided a facemask and placed in a separate area as far as possible from other patients while awaiting care.

If possible, encourage family members, caregivers, and visitors with symptoms of respiratory infection to not enter the facility.

4.8. Practice of sharps safety and safe Injection Practices There are (3) basic approaches to preventing sharps injuries:

4.8.1. Applying standard precautions,

The standard precautions should be applied to apply to all patient care, regardless of suspected or confirmed infection

status of the patient, in any setting where health care is delivered.

4.8.2. Applying Engineering Controls:

These controls are frequently technology based and often incorporate safer designs of instruments and devices to reduce the risk of percutaneous and per mucosal injuries.

When dealing with blood-borne pathogens, engineering controls help to eliminate or isolate some of the hazards to DHCP. Examples of such designs include:

A mechanical device designed for holding the needle cap to facilitate one-handed recapping.

Needles with a needle retraction mechanism, Self-sheathing anesthetic needles. Blunt suture needle, Retractable scalpel, Sharps containers.

Tip-protection attachments to protect operator hands during insertion and removal of ultrasonic scaler tips and to shield the tips when resting in the hand piece.

4.8.3. Apply Work Practice Controls:

4.8.3.1 Work-practice controls are an alteration in the manner in which a task is performed which results in safer behaviors, reducing the likelihood of exposure for Examples:
4.8.3.2 Avoid bending, breaking, or manipulating needles before disposal, because this practice requires unnecessary manipulation.
4.8.3.3 A void removing needles from disposable medical syringes before disposal.
4.8.3.4 Dispose of used needles as soon as possible after use (e.g., at chairside).
4.8.3.5 For procedures involving multiple injections with a single needle, the practitioner should recap the needle between injections by using a one handed scoop technique if no engineering controls are available for reheating the needle or holding the needle cover.
4.8.3.6 Used needles should never be recapped or otherwise manipulated by using both hands, and any other technique that involves directing the point of a needle toward any part of the body.
4.8.3.7 Avoid hand-passing sharps to another person.
4.8.3.8 Use tongs or cotton pliers (rather than fingers) to pick up sharps from the floor.
4.8.3.9 Organize sharp instruments in trays/cassettes so that their tips are not pointing up.
4.8.3.10 Make sure headpieces in their holders have the bur pointing away from the operator.
4.8.3.11 Use instrument cassettes thick enough to avoid sharps from protruding out of the cassette.
4.8.3.12 Place sharp instruments back in a stable fashion when returning them to trays, cassettes, or bracket table. Look before reaching for a sharp instrument or instrument package
4.8.3.13 Carefully check instrument packages for protruding instruments before handling.
4.8.3.14 Do not reach blindly into a container of sharp items.
4.8.3.15 Use puncture-resistant, closable, labeled sharps containers for sharps disposal.
4.8.3.16 Close sharps containers before moving them to avoid spillage if dropped
4.8.3.17 Fill sharps containers only ¾ full to avoid sharps protruding from the top
4.8.3.18 Do not routinely hand scrub sharp instruments.
4.8.3.19 If an instrument must be hand-scrubbed on occasion, use a long-handled brush.
4.8.3.20 Consider using tongs or cotton forceps rather than fingers to remove burs from the high-speed headpieces.

4.8.4. Dental practitioners should adhere to the following injection practices that are critical for patient safety:

4.8.4.1 Prepare injections using aseptic technique in a clean area.
4.8.4.2 Disinfect the rubber septum on a medication vial with alcohol before piercing.
4.8.4.3 Do not use needles or syringes for more than one patient (this includes manufactured prefilled syringes and other devices such as insulin pens).
4.8.4.4 Medication containers (single and multi-dose vials, ampules, and bags) are entered with a new needle and new syringe, even when obtaining additional doses for the same patient.
4.8.4.5 Use single-dose vials for parenteral medications when possible.
4.8.4.6 Do not use single-dose (single-use) medication vials, ampules, and bags or bottles of intravenous solution for more than one patient.
4.8.4.7 Do not combine the leftover contents of single-use vials for later use.

4.9. Sterilization of Patient Care Items

- No repressing o dental instruments should be carried inside the clinics.
- All the instruments should be sent to the central sterilization department
- Use only MOH-approved medical devices for sterilization and follow the manufacturer's instructions for correct use.
- Clean and sterilize critical dental instruments before each use. (Refer to Table 2).
- Clean and sterilize semi-critical items before each use. (Refer to Table 2).
- Allow packages to dry in the sterilizer before they are handled to avoid contamination.
- Use of heat-stable semi-critical alternatives is encouraged.
- Reprocess heat-sensitive critical and semi-critical instruments by using sterilant/high-level disinfectants or a low-temperature sterilization method. Follow manufacturer's instructions for use of chemical sterilant/high-level disinfectants.
- Single-use disposable instruments are acceptable alternatives if they are used only once and disposed of correctly.
- Do not use liquid chemical sterilant/high-level disinfectants for environmental surface disinfection or as holding solutions.

4.9.1. Storage Area for Sterilized Items and Clean Dental Supplies:

4.9.1.1 Implement practices on the basis of event-related shelf-life for storage of wrapped, sterilized instruments and devices.
4.9.1.2 Even for event-related packaging, at a minimum, place the date of sterilization, and if multiple sterilizers are used in the facility, the sterilizer used, on the outside of the packaging material to facilitate the retrieval of processed items in the event of a sterilization failure.
4.9.1.3 Examine wrapped packages of sterilized instruments before opening them to ensure the barrier wrap has not been compromised during storage.
4.9.1.4 Re-clean, repack, and re-sterilize any instrument package that has been compromised.
4.9.1.5 Store sterile items and dental supplies in covered or closed cabinets.

4.9.2. Implant Devices:

4.9.2.1 Implantable devices should not be sterilized unwrapped.

4.9.2.2 A biological indicator should be used for every sterilizer load that contains an implantable device.

4.9.2.3 The results should be verified before using the implantable device.

4.9.3. Opening of Instrument Packages

4.9.3.1. The following recommendations should be applied prior to opening of instrument packages:

4.9.3.1.1 Before opening instrument packages, the packages must be examined to ensure the seal is intact, and the integrity of the package is not broken in any way (e.g. through tears, perforations, or wetness).

4.9.3.1.2 The instrument packages should be opened without touching the instruments.

4.9.3.1.3 The packages should be opened with clean, ungloved hands after the patient is seated and then put on gloves just before first contact with the patient's mouth.

4.9.3.1.4 If the instrument package was opened with gloved hands, the gloves will become contaminated with any microorganisms on the outside of the packaging. If it's necessary to manipulate instruments just before patient treatment begins (e.g., arranging bagged instruments on the bracket table), the instruments should be handled with sterile tongs.

4.9.3.2. The following recommendations should be applied after opening of instrument packages:

4.9.3.2.1 The internal chemical indicator must be checked to ensure the sterilization conditions have been reached within the package.

4.9.3.2.2 If the chemical indicator does not indicate that sterilization parameters have been met, the items should not be used for patient care and the package, along with the internal indicator, must be returned to the CSSD and the incident reported to the CSSD supervisor

4.10. Environmental Surfaces Infection Control

Based on the potential risk of contamination, the various environmental surfaces can be divided into clinical contact surfaces and housekeeping surfaces. These two types of surfaces require different types of cleaning/disinfecting agents and protocols.

4.10.1. Clinical Contact Surfaces:

Surfaces are those surfaces which risk being contaminated with aerosols and spatter or touched with contaminated gloves during operation.

Such surfaces include, but are not limited to,

The dental chair, light handles, switches, dental radiograph equipment, dental chair-side computers, reusable containers of dental materials, drawer handles, sinks and faucet handles used for processing contaminated items, countertops, pens, telephones, and doorknobs.

4.10.1.1. The spread of microorganism from these surfaces can be minimized by:

1- Using impervious barriers to cover the surfaces during treatment,
2- Cleaning and disinfecting such surfaces after patient treatment.

There are two methods for cleaning and disinfection:

A- **Spray-Wipe-Spray Technique:**
1) The spray-wipe-spray method is used on any environmental surfaces and equipment contacted, or that have the potential for splash or splatters of OPIM.
2) Electrical switches or the x-ray master control should not be sprayed with disinfectant because this may cause short circuiting.
3) In this technique, the detergent/disinfectant is sprayed onto the surface, wiped clean, then sprayed on the same surface again and left untouched for the contact time specified by the manufacturer of the solution.
4) Chairside equipment such as curing lights, air abrasion systems, ultrasonic scalers, intraoral cameras,
intraoral scanners, and computer keyboards can potentially be damaged with sprays; therefore, barriers or a two-wipe method should be employed.

B- **Wipe-Discard-Wipe:**
1) Disinfectant wipes are preferred to spray-on products because of the generation of unnecessary aerosols, which may cause sensitization of staff and patients.
2) Obtain a disinfectant towelette from its container, close the container lid and vigorously wipe (clean) the surface.
3) Discard the towelette and obtain a fresh towelette and wipe the surface again for disinfection.
4) Discard the towelette and let the surface dry.

4.10.2. Housekeeping Surfaces

Housekeeping surfaces are those surfaces, which are less likely to be contacted with contaminated gloves but may become contaminated with aerosols, spatter, or spills.

Examples of such surfaces are floors, walls and sinks.

For more information, refer to IC Guidelines for Housekeeping

4.10.3. Managing Blood and Body Fluid Spillages:

All work locations where employees may come into contact with blood or other potentially infectious material must have blood spill biohazard equipment/kits available to safely and effectively clean up any spills.

4.10.3.1. The spill kit must include the following:

Personal protective equipment (PPE) such as gown, gloves, eyewear, mask.

Supplies such as forceps, plastic scoop and scraper, absorbent granules or absorbent pads, hospital-approved disinfectant, yellow plastic bag and sharp container.

The steps described below should be taken when cleaning and decontaminating spills of blood or other potentially infectious materials:

Control access to area:

Prevent people from walking through affected area and spreading the blood or other potentially infectious material to other areas. Use the signage for wet floor sign.

Contain spill: Use other absorbent granules or absorbent pads to contain the spill. Put on appropriate PPEs.

Use plastic scoop or other mechanical means to remove any broken glass or other sharp objects from the spill area, and dispose into the sharp container, sprinkle absorbent granules over the spill and leave for two minutes or as per the manufacturer's recommended contact time.

Allow the spill to solidify before removing. Remove the solidified waste material using the scoop and scraper and carefully dispose all contaminated materials into the infectious waste bag. If there are no available absorbent granules, contain the

spill by placing absorbent pads (i.e. paper towel) on top of the spill and apply the appropriate disinfectant.

To avoid creating aerosols, never spray disinfectant directly onto the spilled material. Instead, gently pour disinfectant on top of paper towels covering the spill or gently flood the affected area, first around the perimeter of the spill, then working slowly toward the spilled material.

If sodium hypochlorite solution (5.25% household chlorine bleach) is used, prepare a fresh solution on a daily basis.

Leave for the recommended contact time. Pick up all absorbent material and carefully place in the infectious yellow bag for disposal. Remove PPEs and place in a yellow bag for disposal. Seal the yellow bag. Wash hands thoroughly with soap and water.

Contact housekeeping to clean the affected area with hospital-approved disinfectant

4.11. Waste Management:

There are two basic types of waste found in the dental setting:

4.11.1. Non-regulated dental healthcare waste:

It is described as waste that is generated by administrative departments and general cleaning work within healthcare facilities, similar to normal household or municipal waste. It includes Domestic waste: such as food, drinks, cans, bottles, plastics, ink cartridges, shredded document papers, cardboard and paper towels. This type of waste is to be collected in black plastic bags.

4.11.2. Regulated Medical Waste:

Regulated medical waste requires special storage, handling, neutralization, and disposal

4.11.3. Waste can be categorized:

A- Infectious waste. This is the waste that contains biological agents such as bacteria, viruses, parasites, and fungi which might cause a disease for individuals susceptible to get infected.

-Infectious waste includes any discarded contaminated instruments or materials that have been in contact with blood or body fluids of infected persons (i.e. contaminated clinical waste such as gloves, aprons, masks, disposable bibs, swab, gauze, cotton, used impression and bite registration materials, single -use materials and instruments, used custom trays, sutures, and disposable gowns).

- According to the standard precautions concept, all patients should be considered as potentially infective.

- All clinical waste produced from the treatment of patients should be considered infectious waste.

B- Pathological Waste: This is the waste that contains human tissues (including extracted teeth), blood, blood components, and body fluids.

C-Sharps Waste: This is the waste that contains sharp items such as needles, glass vials, scalpels, orthodontic wires, broken glass, or any other sharp object that has the potential to cut or puncture through the body.

d- Chemical Waste: This is the waste that contains discarded solid, liquid or gaseous chemicals resulting from diagnostic, therapeutic (including local anesthetic solutions), and laboratory activities or those used in cleaning and disinfecting or sterilizing procedures.

- It also includes photographic and radiographic chemicals (developer and fixer), lead foil (within intraoral radiographic film packets), and waste amalgam.

E-**Health-Care Waste Management:** The effective management of health care waste must consider the basic elements of waste which include: Segregation, Collection, Storage, and Transport.

4.11.4. Segregation of hazardous healthcare waste inside the health care facility:

Considering the transmission routes for infection, good health care waste segregation requires that:

1) Waste should be placed in containers (e.g. bins, boxes, strong disposable bags) to prevent direct contact.

2) Containers should be kept covered to prevent contact with the open air.

3) Sharps and potentially infectious waste should be kept in separate containers in each

medical area and located well away from patients.

4) Sharps containers should be clearly labeled.

5) A color-coding system should be established or clear signs placed on containers and bags to differentiate between general and hazardous health care waste.

Each healthcare waste generator must segregate hazardous from nonhazardous waste at the generation site (e.g. clinic, laboratory, CSSD, radiology department).

4.12. The waste generator holds the responsibility of segregating and collecting waste in containers specially made for this purpose within the health care facility and its department's as follows:

A. Non-hazardous healthcare waste:

1) This type of waste required to be collected in black plastic bags. These bags are not always doubled but double bags should be used when bags are not sturdy.

2) it should be treated separately and must be segregated from the hazardous healthcare waste in all stages (packaging, collection and transporting inside the facility and storage) until it joins the stream of domestic refuse or municipal solid waste, and transported to the final disposal places in the landfill (e.g. municipal landfill).

B. Infectious Waste:

1) This type of waste is collected in orange/yellow- colored plastic bags bearing the phrase "Hazardous Healthcare Waste" (in Arabic and English) along with the biohazard logo (Figure 4).

2) It therefore needs to be packaged in bags that are compatible with the proposed treatment process.

C. Pathological waste:

1) In dentistry this type includes extracted teeth.

D. Sharps wastes:

a) This type should all be collected together, regardless of whether or not they are contaminated.

b) They are to be disposed of in color-coded containers (usually made of metal or high-density plastic), fitted with covers and bearing the phrase "Hazard - Sharp Items" (in Arabic and English) and the biohazard logo.

c) The containers should be rigid, leak proof, and puncture proof.

E). Pharmaceutical Waste (Medications):

1) Quantities of expired medications/materials should be returned to the Pharmacy Department for proper disposal.

2) Trace medications and pharmaceutical items likely to be contaminated are to be disposed of by collecting them in leak-proof containers, then in color-coded plastic bags bearing the phrase "Chemical Waste-Medications" in (Arabic and English) as well as the biohazard logo.

F. Chemical Waste:

1) This type of waste should be packed in chemical resistant containers and sent to specialized treatment facilities (if available).

2) The identity of the chemicals should be clearly marked on the containers. Hazardous chemical wastes of different types should never be mixed.

3) Liquid Chemical Waste is collected inside color-coded and thick hermetically sealed, leak proof containers, bearing the phrase “Chemical Waste” in (Arabic and English) as well as the biohazard logo.

Meanwhile, solid chemicals such as powder materials’ waste are to be collected in color-coded plastic bags bearing the phrase” Chemical Waste-Medications” in (Arabic and English) as well as the biohazard logo.

4) Waste with a high content of heavy metals (e.g. cadmium or mercury) should be collected separately. These wastes can be sent to a waste treatment facility available in the area.

G. Dental Amalgam:

1) The following are best management practices for amalgam waste:

a. Amalgam waste, amalgam capsules and extracted teeth that contain amalgam restorations should not be placed in biohazard containers, infectious waste containers or regular garbage.
b. Amalgam waste should not be flushed down the drain or toilet.
c. Devices containing amalgam should not be rinsed under running water over drains or sinks as this could introduce dental amalgam into the waste stream.
d. Line cleaners that minimize dissolution of amalgam should be used.
e. The use of bleach or chlorine-containing cleaners to flush wastewater lines should be avoided.
f. Amalgam waste should be stored in wide-mouthed, covered, rigid plastic container.
g. After mixing amalgam, the empty capsules should be placed in a wide-mouthed, container that is marked “Amalgam Capsule Waste for Recycling.” The container lid should be well sealed. When the container is full, it should be sent to a recycler.

I. Lead Foils, Shields and Aprons:

1) Any packaging containing residues of, or contaminated by, dangerous substances are classified as hazardous waste. In dentistry this includes the lead foil present in radiographs.

2) The lead foil that shields X-ray film, protective lead shields, and lead aprons should not be placed into the trash or into biohazard bags. They should be disposed of by suitable licensed or permitted waste treatment and disposal facilities.

3) Manufacturer recommendations should be followed for recycling possibilities for lead aprons that become worn out or damaged.

4) Documentation should be obtained from the company handling the lead waste confirming that the waste has been disposed of properly.

J. Chemical Sterility Solutions:

1) The label directions on the product container should be followed for guidance.

2) The spent solution should be diluted with at least 4 parts of water (4 parts water to one-part solution) or more before discharging down the drain.

3) The solution should not be washed down the drain undiluted and should not be placed in the garbage.

4.13. Single-Use (Disposable) Devices

-Use single-use devices for one patient only and dispose of them appropriately.

-Single-use devices in dentistry (e.g., needles, prophylaxis cups and brushes, and plastic orthodontic brackets.) are not heat-tolerant and cannot be reliably cleaned.

-Certain items (e.g., prophylaxis angles, saliva ejectors, high-volume evacuator tips, and air/water syringe tips) are

commonly available in a disposable form and should be disposed of appropriately after each use.

-Handle disposable items aseptically. (Refer to policy number: GDIPC-IPP-DN- 21)

-If an item is stored in a bulk container or package, use an aseptic technique when retrieving it (e.g., use sterile cotton pliers to retrieve an item for use).

-Dispense disposable items in small amounts (i.e., unit dose) sufficient for care of one patient before treatment begins and discard whatever is not used.

-Any single-use device or item (e.g., cotton rolls, gauze, and irrigating syringes) used during oral surgical procedures should be sterile at the time of use.

- For more information refer to waste management policy

4.14. **Dental Handpieces and other intra oral devices attached to air or waterlines**

4.14.1. Handpieces:

-Dental handpieces and other intra oral devices attached to air or waterlines should be sterilized between patients.

-Surface disinfection or immersion in high-level disinfectants is insufficient to adequately and safely process such devices.

-Furthermore, restricted physical access to the internal surfaces of the handpiece limits sterilization with chemicals; therefore, handpieces must be heat sterilized (autoclaved) between patients.

-Handpieces that cannot be sterilized should not be used.

-The manufacturer's instructions for cleaning, lubrication, and sterilization of handpieces and reusable prophylaxis angles should be followed to ensure effective sterilization and longevity of the instruments.

-Run high-speed handpieces to discharge water and air for a minimum of 20 to 30 seconds after use on each patient. If possible, use an enclosed container or high velocity evacuation during discharge procedures to minimize the spread of spray, spatter, and aerosols.

-Remove handpieces and allow water lines to run and discharge water for several minutes to reduce overnight microbial accumulation at the beginning of each clinic day.

4.14.2. Reusable intraoral instruments attached to, but removable from, the dental unit air or water lines:

- Clean and sterilize reusable intraoral instruments attached to, but removable from, the dental unit air or water lines (e.g., ultrasonic scaler tips and their component parts and air/water syringe tips) in the same manner as hand pieces after treatment of each patient. Follow the manufacturer's instructions for reprocessing.

4.14.3 Heat sensitive instruments or permanently attached to dental unit water lines:

- Some dental instruments have components that are heat sensitive or are permanently attached to dental unit water lines. Other instruments (e.g., handles or dental unit attachments of saliva ejectors, high-speed air evacuators, and air/water syringes) that do not enter the patient's mouth can become contaminated whit oral fluids during treatment procedures.

- These instruments should be covered with impervious barriers that are changed after each use or, if possible, clean and then disinfect them with a "hospital disinfectant".

4.14.4. Preparation of Handpieces, Motors, and Couplings:

- New handpieces (including scalers) should be sterilized before being used for patient treatment for the first time

4.15. Oral Surgical Procedures:

-Perform surgical hand antisepsis should be by using an antimicrobial product (e.g., antimicrobial soap and water, or soap and water followed by alcohol-based hand scrub with persistent activity) before donning sterile surgeon's gloves.

- Wear sterile surgeon's gloves when performing oral surgical procedures.

- Wearing two pairs of gloves during surgical procedures is not recommended.

- The fluid used for irrigation of surgical wounds and during surgical procedures should be sterile water or saline solution.

- Furthermore, the maximum acceptable level of endotoxins in sterile water used for irrigation is 0.25 EU /mL, and for airborne endotoxins is 50 EU/m3.

- Use devices specifically designed for delivering sterile irrigating fluids (e.g. single-use

disposable products).

- When sterile irrigating solutions are used, the date of opening of the water bottle must be noted on the bottle. The bottle should no longer be considered sterile at the end of the day, or sooner if contamination is suspected.

4.16. Immunizations for Dental Healthcare Personnel: For more information refer to Work Restrictions for Staff with Communicable Diseases policy

4.17. Work Restrictions for Staff with Communicable Diseases: For more information refer Post-exposure Management policy

5. RESOURCES:

5.1 NA

6. CROSS REFERENCE:

6.1 Communicable diseases policy
6.2 waste management policy

7. REFERENCES:

7.1 CBAHI National Standards for Ambulatory Care Centers, Effective Jan, 2020.
7.2 The Joint Commission International (JCI), 7th Edition, Effective Jan 2021.

8. FORMS & ATTACHMENT:

8.1 NA

9. Approved

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