INFECTION CONTROL PROTOCOL

SRI VENKATESWARA DENTAL COLLEGE AND HOSPITAL

Thalambur, Chennai

CONTENTS

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PREFACE

This document is a summary guide of basic infection prevention recommendations for all dental health professionals in Sri Venkateswara Dental college and Hospital, Chennai. This summary guide is based primarily upon elements of Standard Precautions and represents a summary of basic infection prevention expectations for safe care in dental settings as recommended in the Guidelines for Infection Control in Dental Health-Care Settings (Center for disease control 2003).

Transmission of infectious agents among patients and **dental health care personnel (DHCP)** in dental settings is rare. Transmissions in dental settings, including patient to-patient transmissions, have been documented. All dental settings, regardless of the level of care provided, must make infection prevention a priority and should be equipped to observe Standard Precautions and other infection prevention recommendations contained in CDC's Guidelines for Infection Control in Dental Health-Care Settings—2003

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For the purposes of this document, DHCP refers to all paid and unpaid personnel in the dental health care setting who might be occupationally exposed to infectious materials, including body substances and contaminated supplies, equipment, environmental surfaces, water, or air. This includes

■ Dentists. ■ Dental hygienists. ■ Dental assistants.

■ Dental laboratory technicians (in-office and commercial).

■ Students and trainees.

■ Contractual personnel.

■ Other persons not directly involved in patient care but potentially exposed to infectious agents

(e.g., administrative, clerical, housekeeping, maintenance, or volunteer personnel).

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FUNDAMENTAL ELEMENTS IN INFECTION CONTROL

Key ADMINISTRATIVE RECOMMENDATIONS for Dental Settings

1. Develop and maintain infection prevention and occupational health programs.
2. Provide supplies necessary for adherence to Standard Precautions (e.g., hand hygiene products, safer devices to reduce percutaneous injuries, personal protective equipment).
3. Assign at least one individual trained in infection prevention responsibility for coordinating the program.
4. Develop and maintain written infection prevention policies and procedures appropriate for the services provided by the facility and based on evidence-based guidelines, regulations, or standards.
5. Facility has system for early detection and management of potentially infectious persons at initial points of patient encounter.

Key Recommendations for EDUCATION AND TRAINING in Dental Settings

1. Provide job- or task-specific infection prevention education and training to all DHCP.
   a. This includes those employed by outside agencies and available by contract or on a volunteer basis to the facility.
2. Provide training on principles of both DHCP safety and patient safety.
3. Provide training during orientation and at regular intervals (e.g., annually).
4. Maintain training records according to state and federal requirements.

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Key Recommendations for DENTAL HEALTH CARE PERSONNEL SAFETY

1. Current CDC recommendations for immunizations, evaluation, and follow-up are available. There is a written policy regarding immunizing DHCP, including a list of all required and recommended immunizations for DHCP (e.g., hepatitis B, MMR (measles, mumps, and rubella) varicella (chickenpox), Tdap (tetanus, diphtheria, pertussis).
2. All DHCP are screened for tuberculosis (TB) upon hire regardless of the risk classification of the setting.
3. Referral arrangements are in place to qualified health care professionals (e.g., occupational health program of a hospital, educational institutions, health care facilities that offer personnel health services) to ensure prompt and appropriate provision of preventive services, occupationally-related medical services, and postexposure management with medical follow-up.
4. Facility has well-defined policies concerning contact of personnel with patients when personnel have potentially transmissible conditions.

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STANDARD PRECAUTIONS

THE FOLLOWING ARE PART OF STANDARD PRECAUTIONS:

1. Hand hygiene.

2. Use of personal protective equipment (e.g., gloves, masks, eyewear).

3. Respiratory hygiene/cough etiquette.

4. Sharps safety (engineering and work practice controls).

5. Safe injection practices (i.e., aseptic technique for parenteral medications).

6. Sterile instruments and devices.

7. Clean and disinfected environmental surfaces.

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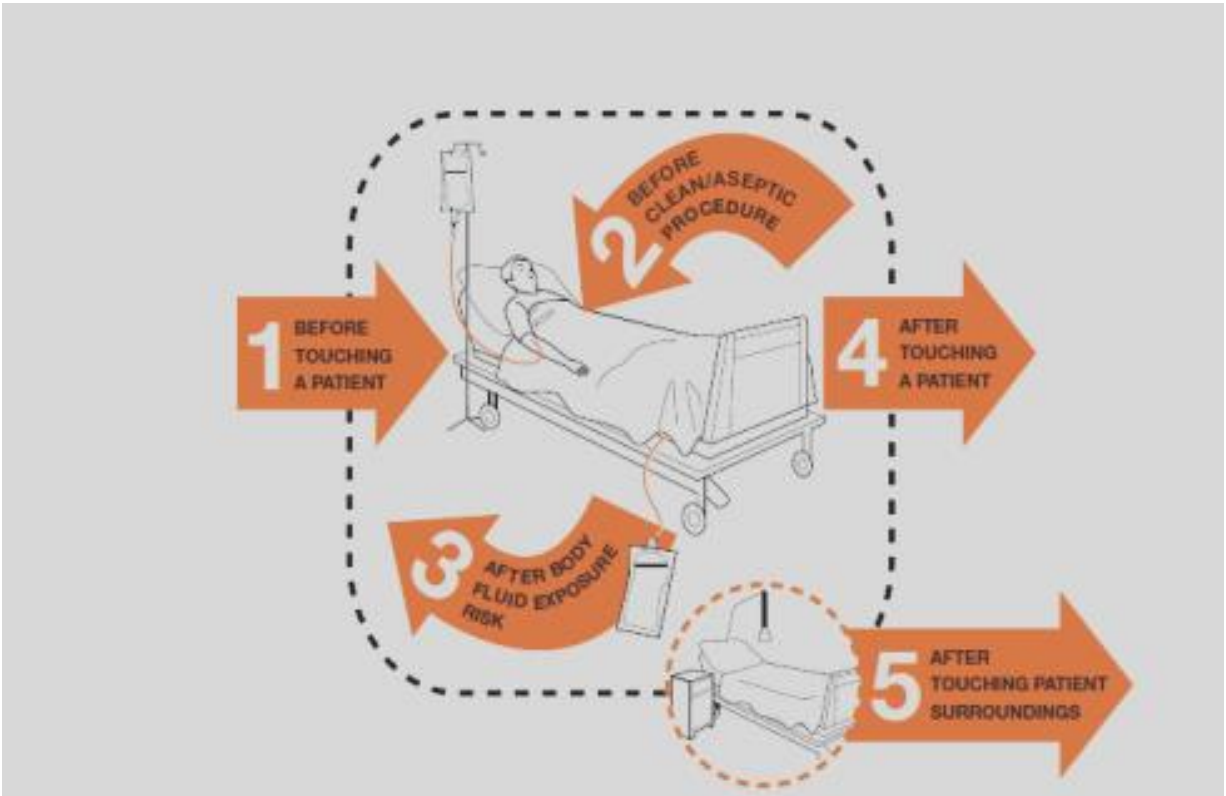
HAND HYGIENE

Key Recommendations for HAND HYGIENE in Dental Settings

1. Perform hand hygiene—
   - **a.** When hands are visibly soiled.
   - **b.** After barehanded touching of instruments, equipment, materials, and other objects likely to be contaminated by blood, saliva, or respiratory secretions.
   - **c.** Before and after treating each patient.
   - **d.** Before putting on gloves and again immediately after removing gloves.
2. Use soap and water when hands are visibly soiled (e.g., blood, body fluids); otherwise, an alcohol-based hand rub may be used.



The 5 moments for hand hygiene. *Source: WHO (2009).*

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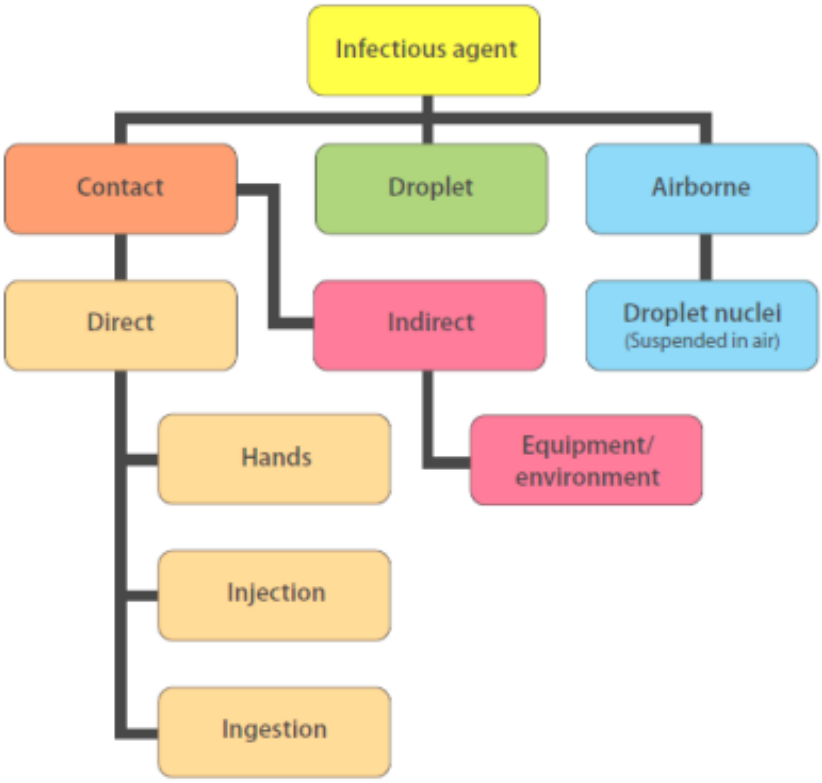
USE OF PERSONAL PROTECTIVE EQUIPMENT



. Transmission based infection sources. Source: Australian infection control guidelines

Key Recommendations for PERSONAL PROTECTIVE EQUIPMENT (PPE) in Dental Settings

1. Provide sufficient and appropriate PPE and ensure it is accessible to DHCP.
2. Educate all DHCP on proper selection and use of PPE.
3. Wear gloves whenever there is potential for contact with blood, body fluids, mucous membranes, non-intact skin or contaminated equipment.
   a. Do not wear the same pair of gloves for the care of more than one patient.
   b. Do not wash gloves. Gloves cannot be reused.
   c. Perform hand hygiene immediately after removing gloves.
4. Wear protective clothing that covers skin and personal clothing during procedures or activities where contact with blood, saliva, or OPIM is anticipated.
5. Wear mouth, nose, and eye protection during procedures that are likely to generate splashes or spattering of blood or other body fluids.
6. Remove PPE before leaving the work area.

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RESPIRATORY HYGIENE/COUGH ETIQUETTE

Key Recommendations for RESPIRATORY HYGIENE/COUGH ETIQUETTE in Dental Settings

1. Implement measures to contain respiratory secretions in patients and accompanying individuals who have signs and symptoms of a respiratory infection, beginning at point of entry to the facility and continuing throughout the visit.
   - **a.** Post signs at entrances with instructions to patients with symptoms of respiratory infection to—
     - **i.** Cover their mouths/noses when coughing or sneezing.
     - **ii.** Use and dispose of tissues.
     - **iii.** Perform hand hygiene after hands have been in contact with respiratory secretions.
   - **b.** Provide tissues and no-touch receptacles for disposal of tissues.
   - **c.** Provide resources for performing hand hygiene in or near waiting areas.
   - **d.** Offer masks to coughing patients and other symptomatic persons when they enter the dental setting.
   - **e.** Provide space and encourage persons with symptoms of respiratory infections to sit as far away from others as possible. If available, facilities may wish to place these patients in a separate area while waiting for care.
2. Educate DHCP on the importance of infection prevention measures to contain respiratory secretions to prevent the spread of respiratory pathogens when examining and caring for patients with signs and symptoms of a respiratory infection.

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SHARPS SAFETY - PROTOCOL ON NEEDLESTICK INJURY

(ADAPTED FROM AIIMS, DELHI, 2017)

Immediate measures:

For Injury: Wash with soap and running water.

For Non intact Skin Exposure: Wash with soap and water.

For Mucosal Exposure: Wash thoroughly.

Reporting

All sharps injury and mucosal exposure MUST be reported to the immediate supervisor, and to the Medical Officer, SIVMH to evaluate the injury. Details of the needle-stick injury should be filled by the supervisor and handed over to the nurse for further follow-up.

Management

Management is on a case to case basis.

Follow-Up

Follow-up and statistics of needle-stick injury are done by the nurse on a regular basis.

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POST-HIV EXPOSURE MANAGEMENT / PROPHYLAXIS (PEP)

Occupational exposure:

Occupational exposure refers to exposure to potential blood-borne infections (HIV, HBV and HCV) that occurs during performance of job duties.

"Exposure" which may place an HCP at risk of blood-borne infection is defined as:

- a percutaneous injury (e.g. needle-stick or cut with a sharp instrument),
- contact with the mucous membranes of the eye or mouth,
- contact with non-intact skin (particularly when the exposed skin is chapped, abraded, or afflicted with dermatitis), or
- contact with intact skin when the duration of contact is prolonged (e.g. several minutes or more) with blood or other potentially infectious body fluids.

Protocol:

It is necessary to determine the status of the exposure and the HIV status of the exposure source before starting post exposure prophylaxis (PEP).

Step 1: Immediate measures

For skin — if the skin is broken after a needle-stick or sharp instrument:

· Immediately wash the wound and surrounding skin with water and soap, and rinse. Do not scrub.

· Do not use antiseptics or skin washes (bleach, chlorine, alcohol, betadine).

After a splash of blood or body fluids on unbroken skin:

· Wash the area immediately

· Do not use antiseptics

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For the eye:

· Irrigate exposed eye immediately with water or normal saline. Sit in a chair, tilt head back and ask a colleague to gently pour water or normal saline over the eye.

· If wearing contact lens, leave them in place while irrigating, as they form a barrier over the eye and will help protect it. Once the eye is cleaned, remove the contact lens and clean them in the normal manner. This will make them safe to wear again

· Do not use soap or disinfectant on the eye.

For mouth:

· Spit fluid out immediately

· Rinse the mouth thoroughly, using water or saline and spit again. Repeat this process several times

· Do not use soap or disinfectant in the mouth

· Consult the designated physician of the institution for management of the exposure immediately.

Don'ts
· Do not panic
· Do not put pricked finger in mouth
· Do not squeeze wound to bleed it
· Do not use bleach, chlorine, alcohol, betadine, iodine or any antiseptic or detergent

Step II: Prompt reporting:

a) All needle-stick/sharp injuries should be reported to the immediate supervisor, and then to the Casualty Medical Officer.

b) An entry is made in the Needle-Stick Injury Register in the Casualty.

Step III: Post exposure treatment:

The decision to start PEP is made on the basis of degree of exposure to HIV and the HIV statusof the source from where the exposure/infection has occurred. More so, it should begin as soon as possible preferably within two hours, and is notrecommended after 72 hours.

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PEP is not needed for all types of exposures: The HIV seroconversion rate of 0.3% after an AEB (accidental exposure to blood) (for percutaneous exposure) is an average rate. The risk of infection transmission is proportional to the amount of HIV transmitted, which depends on the nature of exposure and the status of the source patient. A baseline rapid HIV testing of exposed and source person must be done for PEP. However, initiation of PEP should not be delayed while waiting for the results of HIV testing of the source of exposure. Informed consent should be obtained before testing of the source as per national HIV testing guidelines.

First PEP dose within 72 hours

A designated person/trained doctor must assess the risk of HIV and HBV transmission following an AEB. This evaluation must be quick so as to start treatment without any delay, ideally within two hours but certainly within 72 hours; PEP is not effective when given more than 72 hours after exposure. The first dose of PEP should be administered within the first 72 hours of exposure. If the risk is insignificant, PEP could be discontinued, if already commenced.

Step IV: Counselling for PEP

Exposed persons (clients) should receive appropriate information about what PEP is about and the risk and benefits of PEP in order to provide informed consent for taking PEP. It should be clear that PEP is not mandatory.

Step V: Psychological support

Many people feel anxious after exposure. Every exposed person needs to be informed about the risks, and the measures that can be taken. This will help to relieve part of the anxiety. Some clients may require further specialised psychological support.

Step VI: Documentation of exposure
Documentation of exposureis essential. Special leave from workshould be considered initially for a period of two weeks. Subsequently, it can be extended based on the assessment of the exposed person's mental state, side effects and requirements.

IMPORTANT: Seek expert opinion in case of

· Delay in reporting exposure (> 72 hours).

· Unknown source

· Known or suspected pregnancy, but initiate PEP

· Breastfeeding mothers, but initiate PEP

· Source patient is on ART

· Major toxicity of PEP regimen.

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Step VII: Follow-up of an exposed person

Whether or not post-exposure prophylaxis is started, a follow up is needed to monitor for possible infections and to provide psychological support.

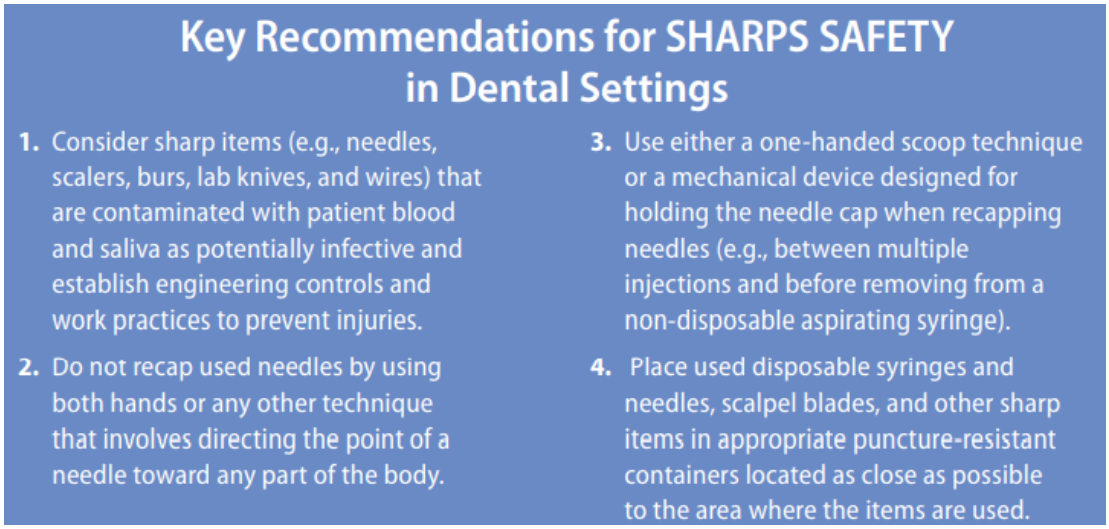
Clinical follow-up

In the weeks following an AEB, the exposed person must be monitored for the eventual appearance of signs indicating an HIV seroconversion: acute fever, generalized lymphadenopathy, cutaneous eruption, pharyngitis, non-specific flu symptoms and ulcers of the mouth or genital area. These symptoms appear in 50%-70% of individuals with an HIV primary (acute) infection and almost always within 3 to 6 weeks after exposure. When a primary (acute) infection is suspected, referral to an ART centre or for expert opinion should be arranged rapidly.

An exposed person should be advised to use precautions (e.g., avoid blood or tissue donations, breastfeeding, unprotected sexual relations or pregnancy) to prevent secondary transmission, especially during the first 6–12 weeks following exposure. Condom use is essential.Drug adherence and side effect counselling should be provided and reinforced at every follow-up visit. Psychological support and mental health counselling is often required.

Laboratory follow-up

Exposed persons should have post-PEP HIV tests. HIV-test at 3 months and again at 6 months is recommended. If the test at 6 months is negative, no further testing is recommended.



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Key Recommendations for SAFE INJECTION PRACTICES in Dental Settings

1. Prepare injections using aseptic technique[2] in a clean area.
2. Disinfect the rubber septum on a medication vial with alcohol before piercing.
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. Medication containers (single and multidose vials, ampules, and bags) are entered with a new needle and new syringe, even when obtaining additional doses for the same patient.
5. Use single-dose vials for parenteral medications when possible.
6. Do not use single-dose (single-use) medication vials, ampules, and bags or bottles of intravenous solution for more than one patient.
7. Do not combine the leftover contents of single-use vials for later use.
8. The following apply if multidose vials are used—
   a. Dedicate multidose vials to a single patient whenever possible.
   b. If multidose vials will be used for more than one patient, they should be restricted to a centralized medication area and should not enter the immediate patient treatment area (e.g., dental operatory) to prevent inadvertent contamination.
   c. If a multidose vial enters the immediate patient treatment area, it should be dedicated for single-patient use and discarded immediately after use.
   d. Date multidose vials when first opened and discard within 28 days, unless the manufacturer specifies a shorter or longer date for that opened vial.
9. Do not use fluid infusion or administration sets (e.g., IV bags, tubings, connections) for more than one patient.

STERILIZATION AND DISINFECTION

Key Recommendations for STERILIZATION AND DISINFECTION OF PATIENT-CARE DEVICES for Dental Settings

1. Clean and reprocess (disinfect or sterilize) reusable dental equipment appropriately before use on another patient.
2. Clean and reprocess reusable dental equipment according to manufacturer instructions. If the manufacturer does not provide such instructions, the device may not be suitable for multi-patient use.
   a. Have manufacturer instructions for reprocessing reusable dental instruments/equipment readily available, ideally in or near the reprocessing area.
3. Assign responsibilities for reprocessing of dental equipment to DHCP with appropriate training.
4. Wear appropriate PPE when handling and reprocessing contaminated patient equipment.
5. Use mechanical, chemical, and biological monitors according to manufacturer instructions to ensure the effectiveness of the sterilization process. Maintain sterilization records in accordance with state and local regulations.

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ENVIRONMENTAL INFECTION PREVENTION AND CONTROL

Key Recommendations for ENVIRONMENTAL INFECTION PREVENTION AND CONTROL in Dental Settings

1. Establish policies and procedures for routine cleaning and disinfection of environmental surfaces in dental health care settings.
   a. Use surface barriers to protect clinical contact surfaces, particularly those that are difficult to clean (e.g., switches on dental chairs, computer equipment) and change surface barriers between patients.
   b. Clean and disinfect clinical contact surfaces that are not barrier-protected with an EPA-registered hospital disinfectant after each patient. Use an intermediate-level disinfectant (i.e., tuberculocidal claim) if visibly contaminated with blood.
2. Select EPA-registered disinfectants or detergents/disinfectants with label claims for use in health care settings.
3. Follow manufacturer instructions for use of cleaners and EPA-registered disinfectants (e.g., amount, dilution, contact time, safe use, disposal).

DENTAL UNIT WATER QUALITY

Key Recommendations for DENTAL UNIT WATER QUALITY in Dental Settings

1. Use water that meets EPA regulatory standards for drinking water (i.e., ≤ 500 CFU/mL of heterotrophic water bacteria) for routine dental treatment output water.
2. Consult with the dental unit manufacturer for appropriate methods and equipment to maintain the quality of dental water.
3. Follow recommendations for monitoring water quality provided by the manufacturer of the unit or waterline treatment product.
4. Use sterile saline or sterile water as a coolant/irrigant when performing surgical procedures.

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PLANNED MEASURES

Administrative Measures

1. Develop and maintain written infection prevention policies and procedures appropriate for the services provided by the facility and based upon evidence-based guidelines, regulations, or Standards.

2. Infection prevention policies and procedures to be reassessed at least annually or according to statutory requirements.

3. Assign at least one individual trained in infection prevention responsibility for coordinating the program.

4. Provide supplies necessary for adherence to Standard Precautions (e.g., hand hygiene products, safer devices to reduce percutaneous injuries, personal protective equipment).

5. Facility to develop system for early detection and management of potentially infectious persons at initial points of patient encounter.

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Specific measures

Respiratory Hygiene/Cough Etiquette

1. Implement measures to contain respiratory secretions in patients and accompanying individuals who have signs and symptoms of a respiratory infection, beginning at point of entry to the facility and continuing throughout the visit.

2. Post signs at entrances with instructions to patients with symptoms of respiratory infection to—

- Cover their mouths/noses when coughing or sneezing.
- Use and dispose of tissues.
- Perform hand hygiene after hands have been in contact with respiratory secretions.

3. Provide tissues and no-touch receptacles for disposal of tissues.

4. Provide resources for performing hand hygiene in or near waiting areas.

5. Offer masks to coughing patients and other symptomatic persons when they enter the dental setting.

6. Provide space and encourage persons with symptoms of respiratory infections to sit as far away from others as possible. If available, facilities may wish to place these patients in a separate area while waiting for care.

7. Educate DHCP on the importance of infection prevention measures to contain respiratory secretions to prevent the spread of respiratory pathogens when examining and caring for patients with signs and symptoms of a respiratory infection.

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Safe Injection Practices

1. Prepare injections using aseptic technique in a clean area.

2. Disinfect the rubber septum on a medication vial with alcohol before piercing.

3. Do not reuse needles or syringes to enter a medication vial or solution, even when obtaining additional doses for the same patient.

4. Do not use single-dose (single-use) medication vials, ampules, and bags or bottles of intravenous solution for more than one patient.

5. Dedicate multidose vials to a single patient whenever possible.

6. If multidose vials will be used for more than one patient, they should be kept in a centralized medication area and should not enter the immediate patient treatment area to prevent inadvertent contamination.

7. If a multidose vial enters the immediate patient treatment area it should be dedicated for single-patient use and discarded immediately after use.

8. Date multidose vials when first opened and discard within 28 days unless the manufacturer specifies a shorter or longer date for that opened vial.

Sterilization and Disinfection of Patient-Care Items and Devices

1. Have manufacturer instructions for reprocessing reusable dental instruments/equipment readily available, ideally in or near the reprocessing area.

2. Label sterilized items with the sterilizer used, the cycle or load number, the date of sterilization, and (if applicable) the expiration date.

3. Ensure routine maintenance for sterilization equipment is performed according to manufacturer instructions and maintenance records are available.

REFERENCES

Guidelines for Infection Control in Dental Health-Care Settings—2003 www.cdc.gov/mmwr/PDF/rr/rr5217.pdf

2007 Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings www.cdc.gov/hicpac/pdf/isolation/Isolation2007.pdf

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