Oral Health: Cleaning, Disinfecting and Sterilizing

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Summary   The purpose of this policy directive is to provide oral health care settings with cleaning, disinfecting and sterilizing standards for the maintenance of a safe and healthy environment of staff and patients.

Replaces Doc. No. Infection Control Guidelines for Oral Health Care Settings [GL2005_037]
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Director-General

This Policy Directive may be varied, withdrawn or replaced at any time. Compliance with this directive is mandatory for NSW Health and is a condition of subsidy for public health organisations.
ORAL HEALTH: CLEANING, DISINFECTING AND STERILIZING

PURPOSE

The purpose of this policy directive is to provide minimum standards for cleaning, disinfecting and sterilizing in oral health care settings for the maintenance of a safe and healthy environment for patients, visitors and staff. This policy must be read in conjunction with NSW Health Infection Control Policy PD2007_036 and Hand Hygiene Policy PD 2010_058.

MANDATORY REQUIREMENTS

NSW Health is committed to ensuring health and safety for patients in the oral health care setting and providing a healthy working environment for all oral health employees. This includes adopting and maintaining infection prevention processes that minimise the risk of oral health patients and oral health providers acquiring a health-care associated or occupational infection. For this to be achieved NSW Local Health Districts must implement the ‘Oral Health: cleaning, disinfecting and sterilizing standard operating procedures’, and:

- successfully promote and implement the Oral Health cleaning, disinfecting and sterilizing procedures through annual auditing processes,
- implement facility wide auditing of oral health practices, which is reported to the Local Health District Chief Executives, and
- set the example: Chief Executives, Health Service Executives, Directors of Clinical Governance, Oral Health Managers and Oral Health Clinical Directors implement and sustain infection prevention practices in all patient care activities.

All health care services and health care workers have a common law duty of care to take all reasonable steps to safeguard patients, staff and the general public from infection. The Work Health and Safety Act 2011 1 (WH&S) prescribe the employer’s duty of care to provide a safe and healthy working environment for all employees and other persons on their premises.

The WH&S Act also prescribes responsibilities for managers (who manage WH&S within the areas they are responsible for) and employees (who must cooperate with the employer and not put anyone at risk by their acts or omissions). There is also a requirement for employers to provide the information, instruction, training and supervision necessary to ensure the health and safety of employees at work.

IMPLEMENTATION

The policy directive and standard operating procedures are to be used in the public dental services, as well as providing guidance to private oral health facilities, such as universities, TAFE and private practices. To implement the policy effectively the following roles and responsibilities are required.

Roles and Responsibilities

*NSW Ministry of Health*

- Ensure the mandatory requirements and standards of this policy are monitored and acted on accordingly.

*Chief Executives of Local Health District*

- Assign responsibility and personnel to implement the cleaning, disinfecting and sterilization processes identified in Oral Health: cleaning, disinfecting and sterilizing standard operating procedures.

*Oral Health Clinical Directors and Oral Health Managers*

- Provide oral health clinicians, patients and visitors with the means to perform infection control processes,
- Provide support to oral health line managers to implement and sustain infection control processes in oral health settings, and
- Manage oral health staff/s who doesn’t comply with the policy, in accordance with NSW Health policy directives for staff performance management.

**REVISION HISTORY**

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<tr>
<th>Version</th>
<th>Approved by</th>
<th>Amendment notes</th>
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<tr>
<td>August 2013</td>
<td>Deputy Director General Population Health</td>
<td>Replaces GL2005_037. Updates infection control standards and changes the document type to a policy directive. This policy directive has been streamlined so not to repeat core components of the NSW Health Infection Control Policy.</td>
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<td>October 2002</td>
<td>Director General</td>
<td>Guideline for infection control in oral health facilities</td>
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**ATTACHMENT**

1. Oral Health: cleaning, disinfecting and sterilizing standard operating procedures.
Oral Health: cleaning, disinfecting and sterilizing

NSW Health
STANDARD OPERATING PROCEDURE

Issue date: August-2013
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1 BACKGROUND

The Oral Health: cleaning, disinfection and sterilizing standard operating procedures’ document has been developed in accordance with the NSW Health Infection Control Policy; Acts and Regulations that define the registration requirements for Dentists, Dental Therapists, Dental Hygienists, Oral Health Therapists, Dental Prosthetists and Dental Technicians; available scientific evidence; and consultations with key stakeholders.

The standard operating procedures (SOP) was developed by the Centre for Oral Health Strategy NSW and State Oral Health Executive through a working group consisting of representatives from Department of Health, Local Health Districts and Infection Control Experts. The SOP was reviewed by the NSW Health Healthcare Associated Infections (HAI) Expert Advisory Group and the Clinical Excellence Commission for accuracy.

In this standard the term:
Must – indicates a mandatory action required that must be complied with.
Should – indicates a recommendation action that should be followed unless there are sound reasons for taking a different course of action.

The SOP is to be read in conjunction with the following NSW Health policies and programs:
- Environmental Cleaning
- Hand Hygiene
- Hand Hygiene In Out Patient Care
- HIV, Hepatitis B and Hepatitis C – Management of Health Care Workers Potentially Exposed
- HIV, Hepatitis B or Hepatitis C – Health Care Workers Infected
- Incident Management
- Infection Control Management of Reportable Incidents
- Infection Control Policy
- Infection Control Policy: Animals as Patients in Health Organisations

• Infection Control Policy: Prevention & Management of Multi-Resistant Organisms (MRO)\(^\text{13}\)
• Infection Control Program Quality Monitoring\(^\text{14}\)
• Latex Allergy – Framework and Guidelines for Prevention and Management\(^\text{15}\)
• Lookback Policy\(^\text{16}\)
• Occupational Assessment, Screening & Vaccination Against Specified Infection Diseases\(^\text{17}\)
• Sharps Injuries – Prevention in the NSW Public Health System\(^\text{18}\)
• Waste Management Guidelines for Health Care Facilities\(^\text{19}\)
• Work Health and Safety: Better Practice Procedures\(^\text{20}\)

2 GOAL

The goal of this standard operating procedure document is to identify processes that aim to provide a safe clinical environment that protects the health and wellbeing of all patients who access public dental services and all dental staff.

3 Key definitions

**Anti-reflux valve** is a valve that only allows liquid to flow one direction. Previously known as Anti-retraction value.

**Cleaning** is the physical removal of soil and organic matter from surfaces and other objects using a detergent and water. Cleaning reduces the numbers of microbes on surfaces and prevents multiplication with the production of many organisms by removing organic matter. A clean dry surface is generally hostile to the reproduction of microorganisms.

**Clinical Area** is an area that is made of one or more collocated dental surgeries.

**Clinical Waste** is waste which has the potential to cause sharps injury, infection or offence. When packaged and disposed of appropriately there is virtually no public health

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significance. Clinical waste contains the following types of waste:

- sharps;
- human tissue (excluding hair, teeth and nails);
- bulk body fluids and blood;
- visibly blood stained body fluids and visibly blood stained disposable material
- and equipment;
- laboratory specimens and cultures;
- animal tissues, carcasses or other waste arising from laboratory investigation or for medical or veterinary research21.

Decontamination is a process that renders equipment, or environmental surfaces safe to handle by cleaning and disinfection or sterilization (PD 2007_036).

Disinfection means the destruction of pathogenic and other kinds of micro-organisms by thermal or chemical means. Disinfection is less lethal than sterilization, because it destroys the majority of recognised pathogenic micro-organisms, but not necessarily all microbial forms (e.g. bacterial spores). Disinfection does not ensure the degree of safety associated with sterilization processes. (PD 2007_036 page iv).

Four-handed dentistry is the cooperative action of the treating clinician and assistant to significantly enhance overall productivity, efficiency and effectiveness.

NSW Health Services consists of staff employed in all Local Health Districts, all statutory health corporations, the Ambulance Service of NSW, Institute of Medical Education and Training, Health Technology, Health Support and any declared affiliated health organisations.

Operating Area is the area set aside as the primary working area includes patient’s mouth, bracket table and dental assistant’s kit.

Patient includes (but is not limited to) a person who is accessing medical or health services or who is undergoing any medical or health procedure.

Sharp is any object capable of inflicting a penetrating injury, which may or may not be contaminated with blood and/or body substances. This includes needles and any other sharp objects or instruments designed to perform

penetrating procedures (PD 2007_036 page v).

**Sterile** is free from all living micro-organisms, usually described as a probability (eg the probability of a surviving microorganism being 1 in 1 million) (PD 2007_036 page v).

**Sterilization** is the destruction of all living organisms, including spores (PD 2007_036 page v)

**Surgery Zones** are developed to keep the surgery as clean as possible during the course of treating patients. The zones are clean, grey and dirty.

**Technical Procedures** are those procedures carried out by dental technicians within the dental laboratory.
4 DENTAL AND CLINICAL PRACTICE

4.1 Surgery Zones

The surgery zones are designated as clean, grey and dirty and are to be identified in the clinical area (refer to picture below). Clean zones are where no contaminated items enter. The grey zone is centred on the patient’s mouth and includes the clinician and assistant work surfaces. Dirty zones are where contaminated instruments are placed to start the cleaning and/or disinfection and/or sterilizing process. Dirty zones are not in the surgery.

![Image of surgery zones]

4.2 Placement of equipment

Equipment should be positioned as follows:

- primary work surface (grey zone), usually on top of the assistant’s cart and on the bracket table, where instruments and equipment of direct relevance to the appointment should be placed,

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22 Nepean Blue Mountains dental clinic Penrith taken by J Conquest
• when using equipment that cannot be sterilized such as amalgamators and curing lights, barrier film/s and/or disinfection must be carried out as per manufacturer’s instructions after each patient,

• all other items that are not involved in the procedure such as the clinical record, patient notes, radiographs, computer key board and mouse must remain in the clean zone. To access these items in the clean zone gloves must be removed and hand hygiene performed.

• if other items, equipment or consumables are required during the procedure they should be retrieved by the assistant by:
  - using transfer forceps that are cleaned and disinfected between patients, or single use only, and stored in the clean zone, or
  - removing gloves and performing hand hygiene before and after retrieving equipment.

Exemptions may occur depending on the design of the dental unit as some equipment may be attached to the unit, such as the curing light and would therefore remain in the grey zone. This equipment must be covered with a barrier film to minimize bacterial/microbial load. Decontamination of this equipment must be carried out as per the manufacturer’s instructions.

4.3 Dental practice processes

Clinicians and assistants should be trained in four handed dentistry techniques to improve safety and performance as it is considered to be the ideal way to deliver of care23 24

4.3.1 Pre-plan, pre-set, pre-dispense, reprocessing, dispense

All instruments should be set up and materials dispensed prior to treatment commencing and remain in their sterile pack until the patient is seated in the dental chair. This reduces the need to enter drawers or cupboards during an appointment.

Adherence to the following guidelines is recommended:

• all materials should be pre-dispensed, where appropriate. (Some volatile materials deteriorate quickly in air, so should be prepared for dispensing, but not dispensed),

• hand hygiene must be performed immediately prior to the procedure commencing and after finishing (refer to 5 moments for hand hygiene25), and appropriate personal protective equipment shall be used. Please refer to NSW Health Hand Hygiene26 and Infection Control Policy – Standard & Additional Precautions for personal protective equipment (PPE) requirements,

• materials that require hand mixing should be mixed on a single sheet of non-porous clean paper, and
• a bib, tray or paper towel should be used to define the work surface. Pre-set/pre-dispensed items should be placed on the primary work surface.

4.4 Methods of Limiting Contamination

4.4.1 Dental dam
The use of dental dam is an effective measure in confining and limiting contamination. Silicone dams must be used for patients who have a known sensitivity or allergy to latex (NSW Health Policy Directive Latex Allergy – Policy Framework and Guidelines for Prevention and Management).

4.4.2 Suctioning
Effective suctioning at the tooth site will markedly reduce contamination from aerosol. This is achieved by:
• using a four-handed technique with a trained dental assistant,
• utilising high speed evacuation suction tips that have a posterior and anterior end. Suction tips must not be reversed during a procedure. If the other end of the tip is required, a new tip must be used, and
• disposable single use low speed suction tips may be pre-bent to increase effectiveness.

Cleaning of suction is guided by the manufacturer’s ‘Instructions for Use’. Detergents and disinfectants must be registered with the Therapeutic Goods Administration (TGA) and listed on NSW State Contract.

5 DENTAL CLINIC EQUIPMENT

5.1 Chair controls
The chair should be pre-set at the commencement of treatment. Where possible the chair should be foot controlled allowing adjustment at any time, however if the chair is hand controlled then barrier film must be used.

The entire chair including the controls located on the back of the head rest or the side of the chair must be wiped clean with neutral detergent and water and/or detergent wipes at the conclusion of the appointment. Single use barrier film may be used in addition to this procedure, but must not be used instead of this procedure.

5.2 **Lights**

The patient light should be pre-set at the commencement of treatment. Only the handles of the overhead light should be touched, and these must be covered with barrier film where light sensor controls are not in place. The barrier film must be changed between patients. The light and handles must then be wiped clean with neutral detergent and water at the conclusion of the appointment and between patients (NSW Health Infection Control Policy).

5.3 **Mouth rinsing**

Spittoons must not be used. If mouth rinsing is required the mouth can be rinsed with a triplex and high-speed suction or a funnel connected to the high speed suction. Funnel attachments must be sterilized between patients or single use only. Following impressions, a two-cup technique may be used by patients to rinse their mouth. The used cups are to be disposed of into general waste whilst their contents can be discarded into a designated dirty sink in a utility/disposal room or by suction.

5.4 **Hand Hygiene - Clinical Sinks**

‘Hand washing should be undertaken in dedicated (clean) sinks preferably fitted with non-touch taps (or done with a non-touch technique) and not in the (contaminated) sinks used for instrument cleaning. If touch taps are used the taps may be turned on and off with a paper towel’ (ADA 2008a).

Hands must not be washed in a sink which is used for processes such as:

- instrument cleaning
- disposal of blood, body substances or chemicals
- cleaning of impressions and impression bowls
- flushing of lines
- where bleach or other antiseptic solutions are disposed

5.5 **Air, water and suction lines**

Air, water and suction lines must be flushed for a minimum of **2 minutes** at the start of the day and for **30 seconds** after each patient.\(^{31}\)

5.5.1 **Air**

Triplex heads must be wiped clean with neutral detergent and water and covered with a barrier film after each use.

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Triplex tips must be changed after each patient use and sterilized or if disposable these need to be discarded after each use.

5.5.2 Suction
Suction lines should be non-convoluted with a flat bore and not covered with woven fabric. Suction lines should be flushed thoroughly with water after each patient and at the end of the day using neutral detergent or following manufacture’s ‘Instructions for Use’.

5.5.3 Water
All dental equipment which supplies water to the oral cavity is to be fitted with anti-reflux valves. Routine maintenance of anti-reflux valves is necessary to ensure their effectiveness. Manufacturer’s ‘Instructions for Use’ must be considered to establish an appropriate maintenance routine.

Australian Dental Association Inc. state that ‘sterile irrigants such as sterile water or sterile saline as a coolant are required for surgical procedures such as dentoalveolar dental implant placement’.

Water for tooth irrigation during cavity preparation and for ultrasonic scaling should be of no less than potable standards as identified in the Australian Drinking Water Guidelines 2011. When treating immunocompromised patients, it is recommended that water from dental unit waterlines contain less than 200 colony forming units per mL. Bacterial levels can be tested using commercially available test strips or through commercial microbiology laboratories.

5.6 Transportation of Instruments
Where dental care is provided in a location separate to the sterilization, all sterilized instruments and equipment must be transported in metal or rigid plastic (puncture proof) containers with secure lids to prevent damage and/or spillage. There are to be separate dedicated containers for sterile and contaminated instruments/equipment that are clearly labelled and in a different colour to identify its contents.

The labels must be worded ‘clean’ or ‘dirty’. These containers should be cleaned with neutral detergent and water and are to be dedicated for this purpose only. All transport equipment shall be maintained in a clean, dry state, and in good working condition.

Public Dental Services must provide all staff with personal protective equipment to undertake this task.

The motor vehicles used to transport equipment should have adequate means of segregation between ‘clean’ and ‘dirty’ instruments.

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6 DENTAL PROSTHETICS / LABORATORY

6.1 Clinical Area

6.1.1 Mixing of impressions
For mixing of impressions, a flexible bowl and spatula are used. The flexible bowl and spatula must be cleaned with neutral detergent and water and dried after use.

6.1.2 Cleaning of Impressions / Prosthesis
When taking an impression either single use trays or sterilized metal trays must be used. All impressions must be rinsed clean with neutral detergent and running water to remove all debris. A neutral detergent must be used according to the manufacturer’s instructions for the cleaning of impressions and dental prostheses. This process must occur prior to transportation from the clinical area. If a designated sink is not available in the clinical area an alternative location must be provided.

Public Dental Services must consider the DOHA guideline statement; ‘Although the efficacy of disinfection of dental materials is still undetermined, standard precautions must be applied whenever people handle dental material. The most important step is the thorough cleaning of material that has contacted oral tissue (e.g. impressions). Thorough rinsing with tepid running water, followed by the application of a neutral detergent and further rinsing, should continue until all visible contamination is removed’.

6.1.3 Transportation of Dental Prosthesis Impressions
Transportation to the laboratory of any items is to be placed in a designated container with a lid or single use sealable plastic bag. Such containers and lids or bags must be single use or cleaned and decontaminated before and after use. The container/s or bag/s must be marked identifying the disinfecting procedure for the impression or dental prostheses that has been undertaken.

6.1.4 Polishing
For all items and appliances it is recommended that:

- fresh pumice must be used to polish each patient’s dental prostheses and must be discarded after use,
- the pumice tray must be cleaned after each use,
- denture polishing brushes and denture mops should be cleaned as per the manufacturer’s ‘Instructions for Use’, and

34 http://www.nhmrc.gov.au/node/30290
• detergents and disinfectants must be registered with the Therapeutic Goods Administration (TGA) and listed on NSW State Contract.

6.1.5 Minor Adjustments
Where possible, denture adjustments are to be done in the laboratory. Dentures and dental prostheses are to be cleaned with a neutral detergent and water before extra oral adjustments. Minor adjustments may be performed at the chair side in the surgery over a bin. Reusable burs used for adjustments must be cleaned and sterilised after use in accordance with manufacture’s ‘Instructions for Use’. Single use burs must be discarded at the chair-side in the sharps container.

6.1.6 Return to the Clinic
Dental prostheses and appliances must be cleaned with neutral detergent and water before leaving the laboratory for patient areas.

Items must be transferred in sealed containers or in single use sealable plastic bags with appropriate identification. If disposable containers are not used and reusable containers are used, they must be cleaned between uses.

6.2 Radiographs
Between patients the head of the x-ray tube must be wiped down with neutral detergent and water after each use. Single use barriers must be used on parts that come into contact with non-intact skin or mucous membrane. All parts including lead aprons must be thoroughly cleaned with neutral detergent and water after each use and stored dry.

Radiographic films should be covered by single use barrier envelopes or be single use films, which are wiped over with neutral detergent prior to processing.

6.3 Extra-Oral Radiological Equipment
Single use barrier film must be used for extra-oral radiological equipment, such as bite piece for OPG, chin rests, head frames, cephalostat earpieces and extra-oral cassettes and are to be thoroughly cleaned with neutral detergent and water after each use.

6.4 Use of Covers or Sheaths on Radiological Equipment
Single use barrier film designed to protect the equipment must be disposed of between patients. Barrier film use does not negate the need to clean the equipment after each patient. Manufacture’s ‘Instructions for Use’ must be followed.

7 REFERENCES


Australia/New Zealand Standards (1992), 4031:1992—Non-reusable containers for the collection of sharp medical items used in health care areas’.

Australia/New Zealand Standards (1994), AS/NZS 4261:1994 Reusable containers for the collection of sharp items used in human and animal medical applications


Australian Dental Association Inc (2008a) Guidelines for Infection Control www.ada.org.au

Australian Dental Association Inc (2008b) Infection Control Policy Statement 5.1


Dental Board of Queensland (2005) Policy on Infection Control Guidelines


