

Australasian Health Facility Guidelines

Part B - Health Facility Briefing and Planning 0280 - Oral Health Unit

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Australasian Health Facility Guidelines

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01 INTRODUCTION

01.01 Preamble

PURPOSE OF THIS GUIDELINE

This Health Planning Unit (HPU) has been developed for use by the design team, project managers and end users to facilitate the process of planning and design.

The Oral Health HPU was originally developed for NSW Health and issued for Australasian use in 2006. This revision has been informed by an extensive consultation process conducted during 2013.

01.02 Introduction

GENERAL

This HPU outlines the specific requirements for the planning and design of an Oral Health Unit.

This HPU refers to dental surgeries which is the space, either an enclosed room or open bay, used to undertake dental consultations, examinations and treatments. Each room or bay contains a dental chair.

The requirements for planning mobile oral health services have not been included in the scope of this HPU.

Planners are advised to refer to relevant jurisdictional authority for guidance in technical specifications.

This document should be read in conjunction with AusHFG generic requirements described in:

- Part A: Introduction and Instructions for Use;
- Part B: Section 80 – General Requirements and Section 90 Standard Components, Room Data Sheets and Room Layout Sheets;
- Part C: Design for Access, Mobility, OHS and Security;
- Part D: Infection Prevention and Control; and
- Part E: Building Services and Environmental Design.

It is recognised that statutory and regulatory requirements will vary between jurisdictions but, in general, all provide oral health services to very similar categories of eligible patients within the public health sector, with a significant focus being on prevention activities. This HPU is aimed at ensuring a consistent approach to the design of Oral Health Units to meet the needs of patients and the staff who work in them.

01.03 Policy Framework

SPECIFIC POLICIES/GUIDELINES

Before undertaking a project, planners and project personnel are encouraged to familiarise themselves with individual jurisdiction plans, policies, service specific guidelines and reports.

State and territory specific policy information is contained in the Further Reading and References sections (280.25.00 and 280.26.00) of this HPU.

01.04 Description

DEFINITION OF ORAL HEALTH PLANNING UNIT

An Oral Health Unit provides facilities and equipment to deliver oral health services. Services are delivered in dental surgeries that provide a purpose designed dental chair for patients and specialised furniture, fittings and equipment for staff to use when providing oral health care.

Oral Health Units range from single chair clinics to large teaching hospital units providing complex specialist care. These services can be provided in stand-alone buildings or integrated with other community or hospital facilities. Requirements for the Unit are determined by the role delineation/ service level and range of services provided as described in the Service Plan.

The overwhelming majority of oral health services are provided as outpatient services. In some cases, there may be a requirement in hospital-based units for some inpatient access. This HPU provides the information necessary to plan and design Oral Health Units of varying sizes and complexity.

As a general guide it is envisaged that a four chair Unit would be the minimum size for a unit operating as an Oral Health Unit "hub"; a single chair Unit being the minimum size for an Oral Health Unit "spoke". This

arrangement may vary depending on local factors, such as service provision to remote regions. Final chair numbers will be dependent on service planning.

SERVICE LEVEL/ ROLE DELINEATION

Most jurisdictions will refer to service level/ role delineations to determine the characteristics of the service to be provided. Broadly, services range from:

- general oral health services - providing general and preventative care and including some specialist services via outpatients, offering limited numbers of inpatients, and providing clinical placements for undergraduate and post graduate students;
- dental teaching hospitals - providing a full range of specialist dental services and training for undergraduate and postgraduate oral health trainees; and
- facilities for emergency oral health care.

SERVICES PROVIDED

In accordance with the agreed Service Plan, the Unit may provide the following services:

- dental therapy services;
- hygiene services;
- general, preventive and emergency services;
- denture or prosthesis adjustment and/ or manufacture;
- specialist services - oral surgery, paediatrics, endodontics, orthodontics, periodontics and special needs care;
- community education programmes;
- teaching and training of students and supervision of graduates;
- education of patients; and
- simulation environment for the training of staff and students in a tertiary centre.

As oral health services may be networked across health regions, some of these services may be centralised and/or provided on an outreach basis. Examples include regional administration and call centres, dental laboratories manufacturing dentures and prostheses, and specialist services.

CALCULATION OF NUMBER OF CHAIRS REQUIRED

Calculations for chairs should be based on a multi-factorial approach including the population eligible for care, demand, services capacity, hub and spoke networking arrangements, outsourcing and staffing models. Future needs and student and training requirements should be taken into account in the calculations. Most health jurisdictions will have agreed methodologies for calculating chair requirements.

02 PLANNING

02.01 Operational Models

TYPE OF UNIT

The location and size of the Oral Health Unit will be determined by the Service Plan and may be a:

- stand-alone unit;
- core component of a community health centre or Multipurpose Service (MPS); or
- hospital-based unit.

STAND-ALONE UNIT

While Oral Health Units normally form part of a broader range of services, stand-alone units are provided. Such units need to be planned with a full range of support services as sharing opportunities are limited.

COLLOCATION WITH COMMUNITY BASED UNIT

Most Oral Health Units providing general outpatient services can be colocated with other community-based services to promote easy access and integrated care options for the catchment population. These units are commonly colocated with community health centres and MPSs.

The size of these units may vary from:

- a single chair that is dedicated or arranged as part of a shared treatment room in a MPS; to
- larger services based in community health centres that have permanent staff and may provide training opportunities for students.

A description of a treatment room is provided in the Non-Standard Components section of this HPU.

HOSPITAL BASED UNIT

The main role of a hospital-based Oral Health Unit is the provision of outpatient care. In addition, limited services may be provided to inpatients that require urgent dental care or dental care as part of an inpatient admission.

The extent of services provided by dental surgeons in support of other clinical disciplines (for example oral and maxilla-facial surgery) will depend on the role and function of the health service. These dental practitioners will utilise the dental chairs to assess patients and undertake some procedures. Surgical procedures requiring a general anaesthetic will be undertaken in an operating theatre with appropriate support services, such as anaesthetics and recovery.

02.02 Operational Policies

GENERAL

The development of operational policies is integral to defining how a service will operate. These policies impact on the capital and recurrent costs of a facility and will vary from unit to unit depending on a wide range of factors, such as the clinical characteristics of the patients and the defined role of the unit. The cost implications of proposed policies should be fully evaluated to ensure the most cost-effective and efficient design solutions are developed to provide therapeutic and high quality physical environments.

The following clauses detail policies relevant to an Oral Health Unit.

Operational policies should be developed for every unit as part of the project planning process. For further information refer to Part B: Section 80 General Requirements.

HOURS OF OPERATION

The Unit will usually operate Monday to Friday during business hours, but may operate outside these hours. There should be policies and procedures in place for management of emergencies after hours. This will have implications for access, security and safety of practice that need to be considered during the planning and design stages.

DENTAL RECORDS

Current dental records should be stored in a secure and lockable space (fixed shelving or a compactus system that can be easily reached by staff) adjacent to the reception area where possible, so as to enable administrative staff easy access. Archival space for old records may be provided off-site.

Dental records must be retained for the minimum period required by local legislation. Electronic records are increasingly being used as an alternative.

INSTRUMENT PROCESSING AND STERILIZATION - ON SITE

The space allocated and equipment selected will depend on the number of dental surgeries being serviced (including any instrumentation received from outreach services), workplace processes and staffing, mindful of the number of staff requiring access to the sterilizing area at any one time. Consultation with local infection control personnel and sterilization staff is advisable. Planners are also recommended to refer to local policies and guidelines for further details.

In most instances, reusable dental instruments will be reprocessed within the Oral Health Unit by trained staff. Where instruments are reprocessed within the Unit, a dedicated reprocessing area is required to clean, sterilize and store instruments. Processes must comply with the following Australian/New Zealand Standards:

- Standards Australia, 2006, AS/NZS 4815:2006 Office-based health care facilities - Reprocessing of reusable medical and surgical instruments and equipment, and maintenance of the associated environment; and
- Standards Australia / Standards New Zealand, 2014, AS/NZS 4187:2003 Reprocessing reusable medical devices in health care organisations.

INSTRUMENT PROCESSING AND STERILIZATION - OFF-SITE

Used instruments and equipment may be sent to a Sterile Supply Unit within a hub Oral Health Unit or to a local health service for processing. This approach is more commonly adopted when the Oral Health Unit is based on a hospital site.

Processing and sterilizing off-site may reduce the operational and infrastructure outlay (particularly at small facilities) while increasing the service provider's ability to apply monitoring processes and improve quality standards. It is recommended that providers complete a cost benefit analysis of the options in relation to their specific service plan as this model may:

- necessitate a significant increase in dental instruments; and
- require additional resources in order to transport instruments between the Oral Health Unit and the Sterile Supply Unit.

If off-site instrument reprocessing and sterilization is used, the Unit will still require sufficient spaces to rinse and store dirty instruments, and for the receipt and storage of sterile instruments when returned /delivered.

MANUFACTURING OF DENTURES

Denture manufacture may be performed in-house or outsourced.

A cost benefit analysis should be conducted to assess the need for a Dental Laboratory capable of manufacturing dentures. In a hub and spoke service arrangement, the manufacture of dentures is usually centralised. Spoke sites will then (generally speaking) require a minor prosthetic adjustment area for the pouring and trimming of patient moulds, and for denture adjustments. For the purposes of this HPU, this room is referred to as a Dental Workroom.

Additional information relating to requirements for a Dental Workroom and a Dental Laboratory is contained in the Non-Standards Components section.

SEDATION

A range of sedation may be used when undertaking dental treatments. Inhalation sedation using nitrous oxide is commonly used in most Oral Health Units.

Sedation, such as a general anaesthetic or intravenous sedation, will be provided in a dental hospital or an acute hospital operating theatre. A level of infrastructure is required to support these services and it is often uneconomical or unsafe to provide them in an Oral Health Unit. This infrastructure would include dedicated medical (anaesthetists) and nursing staff, associated equipment and recovery space.

MEDICAL EMERGENCIES AND PATIENT RECOVERY

Services located within hospitals may store a resuscitation trolley within the Unit.

PATIENT MANAGEMENT

Patients attending the Oral Health Unit will report to Reception where appointments will be made or confirmed, personal details taken and records retrieved or generated after which patients will be directed to the waiting area. Services will generally be provided to both adults and children.

Consideration must be given to providing adequate space and amenities for support persons (parents, carers etc.). For the purposes of this HPU it is assumed that waiting space is provided at a rate of three spaces per dental surgery. Some jurisdictions across Australia have service co-payments and reception staff will be required to handle money.

Should privacy be required, staff should access a nearby interview room.

MEDICAL IMAGING

There should be capacity for intra-oral radiography in all individual dental surgeries. In open-plan dental surgeries, refer to jurisdictional requirements when determining intra-oral radiography options. These may include one x-ray unit shared between two chairs or a shared imaging room that also provides space for reading and bench-top processing.

The intra-oral x-ray units are wall-mounted with remote exposure switches/panels outside the room.

For the purposes of the Guideline, digital radiography is assumed. Production of images may occur using two approaches including:

- in room processing using a bench-top PC; or
- use of a digital plate scanner which is usually shared by up to six chairs and is located in a central bay.

Access to a bench top processor will provide back-up should digital systems not be operating.

Orthopantomogram (OPG) and other extra-oral radiography facilities, such as 3D Cone Beam CT, may be established in larger units with the option to outsource dental radiography to medical imaging units to be considered. Additional caution is needed regarding radiation shielding in the case of Cone Beam CT.

Refer to section 280.19.20 Radiation Screening for further information.

STORAGE - GENERAL SUPPLIES

General supplies will be obtained through routine imprest and elected direct purchase arrangements. Where Oral Health Units are collocated with other services, delivery of these goods will occur through dedicated goods receipt points such as a loading dock/ bay.

STORAGE - STERILIZED INSTRUMENTS AND EQUIPMENT

Sterilized items must be stored:

- and handled in a manner that maintains the integrity of the packaging material and prevents contamination of the contents;
- in a contained area such as a storage room or cupboard that is controlled for temperature, direct sunlight and humidity; and
- in such a way as to prevent packaging being crushed, bent, compressed or punctured.

Unsterile equipment and consumables should not be stored with sterilized equipment.

WASTE DISPOSAL

General and clinical waste will be managed in accordance with overall health service policies.

Oral Health Units generate a number of waste products that have the potential to be discharged into the waste-water system through dental suction systems. A number of heavy metals can be discharged including silver, cadmium, chromium, copper, mercury, nickel, lead and zinc. Of principle concern (at this stage) is mercury discharge as dental clinics are recognised as significant contributors to mercury contamination of the environment. Project staff should refer to their relevant environmental authority for guidelines on disposal of both liquid and solid mercury waste, back-flow prevention and waste-water disposal.

It is recommended that mercury wastes be returned to metal or precious metal recyclers for reclamation. If necessary the Environment Protection Authority should be contacted for specific requirements for disposal of mercury. For the handling and storage of mercury related dental waste, refer to the report National Health & Medical Research Council (NHMRC), 1999, Report of an NHMRC working party - Dental Amalgam and Mercury in Dentistry.

STAFF STRUCTURE

The staff structure of the Unit will have an impact on the nature, size and location of offices, administrative and teaching spaces, and staff amenities. The staffing structure of the proposed Unit, including students and academic staff, should be developed in the early stages of planning.

02.03 Planning Models

LOCATION

An Oral Health Unit should be located in an area accessible to the community by both public and private transport.

CONFIGURATION

The Unit may have dental chairs arranged as:

- one chair per dental surgery;
- open plan dental surgeries; or
- a mix of the two, with support areas located so as to ensure optimal work flows and efficient and safe working practices.

In all scenarios, the layout of each room must be optimised so that:

- clean and dirty zones are identified within the space;
- clinical staff are in easy reach of all patient treatment equipment when seated;
- patient privacy is maintained; and
- noise is contained.

DENTAL SURGERY - SINGLE ROOM

Single room design incorporates all services and equipment required for the assessment and treatment of one patient and is appropriate in most situations. This configuration ensures patient privacy and contains noise. This type of room will accommodate most ambulant patients and those using walking aids.

A larger single room may be considered where:

- trolley or wheelchair access is needed;
- a patient hoist is required; and
- those with special needs such as a physical or intellectual disability, or who are morbidly obese.

OPEN PLAN DESIGN

When considering an open plan dental surgery design, these spaces are usually arranged in pairs with shared hand washing, x-ray (as per jurisdictional requirements) and storage facilities located between them, and may be separated from each other with partial height partitions for privacy and infection control requirements (e.g. aerosols). Patients will usually be positioned away from the circulation corridor which ensures a level of privacy.

This arrangement of chairs is normally adopted for teaching and supervising students.

Open plan dental surgeries will generally only be incorporated into larger facilities.

DENTAL SURGERY - TWO CHAIR

These facilities will usually include single room dental surgeries accommodating one operating chair and/or surgeries of open plan design accommodating two operating chairs. The final configuration and number of chairs will depend on the population served and the Unit functions e.g. clinical training.

Larger community-based facilities offer the opportunity to:

- engage a dental team consisting of dentist, dental therapists, dental assistants and administration reception staff;
- improve access to services through increased opening hours;
- offer training programs for health professionals and support personnel; and
- provide more flexible models of care.

SHARED AREAS

In small units only the dental surgeries will be a dedicated space. The Entry /Reception /Waiting Area, most support areas and staff areas, may be shared with adjoining units. When a shared Reception is used, it

is likely that a reception space will be dedicated to the oral health service owing to administrative tasks associated with eligibility and/or co-payments.

Even when larger Units are collocated with community health centres and hospitals, opportunities should be explored to share space, including visitor and staff amenities.

02.04 Functional Areas

FUNCTIONAL ZONES

Functional zones will comprise:

- entry / reception / waiting; and
- treatment areas – dental surgeries, support areas; and
- staff areas - offices and amenities.

ENTRY / RECEPTION /WAITING

Where Oral Health Units are collocated with other services patients will enter the facility via a shared entrance. In all but a few cases, a dedicated Waiting Area will be provided with three waiting spaces per dental surgery. This allowance accommodates one to two patients waiting with a support person.

Space should also be considered for prams and patients/ visitors with walking frames. A children's play area may be located adjacent to the main waiting area. Children must be under the supervision of parents/carers not Unit staff.

Inpatients should be called for only when the dental surgery is about to become vacant so that the patient can be transferred directly in via a separate entry.

Reception will accommodate one or two staff depending on the size of the Unit. The Reception will have oversight of the Unit's entry and waiting areas. The counter should have a wheelchair accessible section.

As Reception staff may be responsible for collecting and storing money, consideration should be given to the safety and security of reception staff and fixed duress alarm should be provided.

The acoustic privacy and the confidentiality of patients attending the reception area should be of high priority.

TREATMENT AREA - DENTAL SURGERIES

Whether single room or open-plan, the typical dental surgery has the dental chair positioned close to the centre of the room or cubicle with the foot of the chair facing away from the entry. This orientation of the chair addresses both privacy, and modesty concerns for patients, ensures easy staff movement in and out of the room and ready means of egress for staff if a patient becomes agitated.

The dentist and dental assistant operate around the head of the chair with the dentist normally positioned on the patient's right (if right-handed). A dental assistant's workstation is needed with allowable operating space and incorporates the storage of dental materials and equipment, disposable items and a work surface for retrieving and mixing dental materials.

In both single room and open-plan dental surgery design, the provision of the dental assistant's workstation and adequate shared storage units for equipment and disposable items is specifically designed for user accessibility, space efficiency, infection control and easy maintenance of a clean, clutter-free work environment. Clean and dirty workflows will be facilitated.

Allowance should be made for changes in practices in relation to technology advancements such as space for IT equipment, digital radiography, telehealth and/or intra-oral cameras. Open plan surgeries will need to consider a suitable location for computer monitors to accommodate the use of the electronic oral health record.

Dental surgery layouts are shown in the Standard Components section. Minimum widths and depths are important to ensure that the dental practitioner can operate effectively.

Seating is usually provided for a carer.

CLINICAL SUPPORT AREAS

The extent to which the following are included will depend on the size and location of the Unit. In small single surgery units serviced by a visiting dentist for example, the full range of facilities will not be appropriate and arrangements will need to be made for sterilizing and laboratory needs. It may also be possible to share some support space if located with other services (e.g. Disposal Room, Cleaner's Room). Broadly speaking room requirements will include:

- dental laboratory or dental workroom;
- plant room;

- instrument reprocessing;
- linen store;
- resuscitation trolley bay - depending on Unit policies;
- store - sterile consumables and instruments;
- store - general
- equipment bays - hoists etc.;
- secure gas cylinder storage;
- clean-up room / disposal room; and
- cleaner's room.

STAFF AREAS – OFFICE SPACE AND AMENITIES

The provision of office space will comply with local policies.

Provision must be made for staff lockers in a secure environment. Depending on the type of unit and location, staff room and toilets may be shared with other units. Access to a staff shower is desirable.

If no dedicated staff room is provided, in the case of stand-alone Oral Health Units, a small beverage bay separate from the clinical facilities may be considered. Alternatively, a staff room may be provided within a community health centre and shared between services.

Access to a meeting room should be provided in Units to support student teaching and staff in-service training.

02.05 Functional Relationships

EXTERNAL

If located on a hospital site, there should be easy access to:

- sterile supply unit if no in-unit service;
- support services such as linen and waste disposal units; and
- a loading dock.

INTERNAL

Reception requires a clear view of entry and exit/egress points of the Unit and of the waiting area.

There must be easy but controlled access from the waiting area to the patient treatment areas. Staff must be able to move between the treatment areas and reception to access patient files etc.

Staff areas, offices and amenities should be separate from patient and public access to provide privacy and quiet areas.

03 DESIGN

03.01 Accessibility

INTERNAL

Entry to the clinic must allow easy barrier free access for ambulant, wheelchair and trolley patients.

A separate entry is to be provided for inpatients, where indicated. If a hospital-based unit, bed /trolley access to at least one surgery is to be provided.

Unit access design must comply with Standards Australia, 2010, AS 1428 (Set) 2010 Design for access and mobility Set (SAI Global).

EXTERNAL

Consideration should be given to public transport availability.

Off street access for vehicles transporting patients should be provided.

All-weather vehicle drop-off points should be provided for easy access by patients who are elderly, frail, have limited mobility or who are wheelchair bound.

Consideration should be given to ambulance access and trolley access to Units located within hospitals.

If the Unit is provided as a stand-alone building on a hospital site, an undercover link should be provided to the main hospital.

03.02 Parking

Ready access to parking for patients and their carers including drop-off parking for people with disabilities.

For further information regarding staff parking, refer to Part C: Section 790, Safety and Security Precautions.

03.03 Disaster Planning

For further information refer to information on disaster planning in Operational Policies section of Part B: Section 80 General Requirements.

03.04 Infection Control

GENERAL

The planning and construction of any facility must incorporate the principles of environmental infection prevention and control to minimise contamination from particulates (solids and aerosols) and micro-organisms.

The general layout of a dental surgery is based on a streamlined design applying infection control principles. Design must focus on minimising the number of surfaces likely to be exposed to aerosols (generated by the dental handpiece and air/water application) by concealing equipment (other than that associated with the dental chair) or locating certain items (such as computer screens and administration areas) away from the zone of aerosol contamination. There must be clear distinction between zones (for example reception/administration and treatment areas) and prevention of crossover of dirty, clean and sterile workflows.

The use of high-volume evacuation suction equipment and providing barriers over surfaces are also important in minimising aerosol effects.

Regular cleaning of the Unit is to be undertaken in order to minimise the number of micro-organisms in the environment and keep all surfaces clean and tidy.

Procedures are to be implemented for the safe handling and appropriate disposal of contaminated materials and waste.

Hand and hygiene facilities are essential in every dental surgery and must be specifically designated for hand washing. Appropriate personal protective equipment (such as gloves, protective eyewear, gowns and facemasks) are to be used to reduce the risk of exposure to aerosols, blood and body fluids. Access to dispensers and storage for personal protective equipment must be considered in each surgery to ensure easy access.

Hands-free access to bins for disposal of paper, clinical waste and sharps is to be provided.

Considerations relating to instrument reprocessing are outlined in clauses 280.006.025 and 280.006.030.

For further information, refer to:

- Australian Dental Association, 2012, ADA Guidelines for Infection Control (Second Edition); and
- NHMRC, 2010, Australian Guidelines for the Prevention and Control of Infection in Healthcare (2010).

03.05 Environmental Considerations

ACOUSTICS

Noise can be a frequent source of complaint from patients and consumers. The following should be considered by project teams:

- exclusion of disturbing or distracting noises from other patients or equipment during treatment where possible;
- minimising noise by the use of acoustic ceiling tiles;
- isolating noisy areas or equipment from patient treatment and waiting areas;
- using acoustics covers for compressors, dental plant and suction units; and
- preferably accommodate all mechanical plant in a separate service specific Plant Room.

LIGHTING

Natural light is highly desirable in dental surgeries as light and views do much to alleviate patient anxiety and staff morale.

Colour-corrected lighting will be required in surgeries and laboratories where shading / matching of teeth colour is undertaken.

Dental examination lights can be mounted on the dental chair or on the ceiling.

PRIVACY

The planning and design of oral health units must ensure that every consumer has the right to have his or her privacy respected.

The Unit should be designed to:

- ensure confidentiality of patient discussions and records; and
- appropriately configure dental surgeries to optimise patient privacy.

INTERIOR DECOR

Interior decor includes furnishings, style, colour, and use of textures. Good interior decor can assist in relaxing patients by providing a non-intimidating and child friendly atmosphere.

Some colours and patterns can be disturbing to some patients and also interfere with teeth matching. Bold primary colours and green should be avoided in treatment areas.

Consideration may be given to providing visual interest points on the ceiling.

Cleaning, infection control, fire safety, and the perception of a professional environment must be considered while avoiding an institutional atmosphere.

03.06 Space Standards and Components

HUMAN ENGINEERING

Human engineering covers those aspects of design that permit effective, appropriate, safe and dignified use by all people, including those with disabilities. It includes occupational ergonomics, which aims to fit the work practices, fixtures, fittings and equipment (FF&E) and work environment to the physical and cognitive capabilities of all persons using the building.

As the requirements of Occupational Health and Safety (OHS) and antidiscrimination legislation will apply, this section needs to be read in conjunction with the section on Safety and Security in these Guidelines in addition to OHS related guidelines.

Issues to be considered in Oral Health Units include:

- electric dental chairs that can be operated to adjust for height and position;
- access to hoists for patient lifting; and
- the use of a larger dental surgery for those with special needs, such as those in wheelchairs or bariatric patients. These special needs will impact on chair types and the weight capacity of

dental chairs. This larger surgery will be located so that access is easy and direct from the waiting room.

ERGONOMICS

Oral Health Units should be designed and built in such a way that patients, staff, visitors and maintenance personnel are not exposed to avoidable risks of injury.

Configuration of dental surgeries is important so staff work within easy reach of all instruments and equipment used in patient care.

For more details regarding ergonomic design and accessibility refer to Part C: Section 730, Design for Access, Mobility, OHS and Security.

ACCESS AND MOBILITY

Where relevant, comply with Australian Standards relating to designing for access and mobility. Refer to:

- Part C: Section 730, Design for Access, Mobility, OHS and Security; and
- Standards Australia, 2010, AS 1428 (Set) 2010 Design for access and mobility Set (SAI Global).

BUILDING ELEMENTS

Building elements include walls, floors, ceilings, doors, windows and corridors.

Doorways must be sufficiently wide and high to permit the manoeuvring of wheelchairs, trolleys and equipment without risk of damage or manual handling risks. The larger dental surgery will accommodate entry by a bariatric wheelchair.

For more information and guidance refer to Part C: Section 710, Design for Access, Mobility, OHS and Security.

03.07 Safety and Security

SAFETY

The facility must provide a safe working environment which will not cause any risks to the health and safety of the occupants. In addition to those risks and hazards commonplace in health care environments, there are specific OHS issues associated with Oral Health Units that include:

- staff leaning over reclined patients to provide treatment;
- aerosol contamination;
- working with infectious materials;
- working with medical gases and hazardous chemicals in laboratories;
- heat and noise associated with sterilizing procedures and in laboratories;
- manual handling;
- potential for patient aggression and violence; and
- radiological hazards.

It will be important to identify, assess and control risks or hazards that exist within the Unit to produce a safer and healthier Unit design. For further information refer to Part C: Section 790, Safety and Security Precautions.

SECURITY

Issues to be considered in Oral Health Units include:

- barrier requirement for controlled access between waiting areas and clinical and administrative areas;
- controlled after-hours access should extended hours services be provided;
- security of reception areas, patient records and cash storage; and
- the safety of staff and property.

03.08 Finishes

GENERAL

Finishes in this context refer to walls, floors, windows and ceilings.

The use of smooth, easily cleaned surfaces (not tiles) is required. Avoid joined laminated and textured surfaces on bench tops and walls.

WALL PROTECTION

Refer to Part C: Section 710, Space Standards and Dimensions.

FLOOR FINISHES

Refer to Part C: Section 710, Space Standards and Dimensions.

CEILING FINISHES

Refer to Part C: Section 710, Space Standards and Dimensions.

03.09 Fixtures, Fittings & Equipment

DEFINITION

The Room Data and Room Layout Sheets in the Australasian Health Facility Guidelines contain standard rooms as described in this HPU.

Major medical equipment used in Oral Health Units should be consistent with Australian Standards where available.

For more detailed information refer to the Room Data Sheets (RDS) and Room Layout Sheets (RLS), and to:

- Part C: Section 710, Design for Access, Mobility, OHS and Security; and
- Part F: Section 680 Furniture Fittings and Equipment.

03.10 Building Service Requirements

GENERAL

All services should satisfy the Unit's specific service level and procedure requirements. Services should be designed and installed in a manner that will allow easy access for maintenance and cause only minimal disruption when maintenance is required.

INFORMATION TECHNOLOGY / COMMUNICATIONS

Planning of IT systems to support clinical and operational activities is an essential component of any facility design. Systems to consider include:

- patient management system;
- 'chair-side' computing to support electronic oral health records and digital imaging;
- telecommunications; and
- other technology, such as digital radiography, telemedicine and instrument tracking and inventory management systems.

Unit layout must include appropriate data cabling and connection lines to support internal and external networks and a server room will/may be required.

Cabling for patient management systems and telecommunications should be available in all dental surgeries and administration and teaching areas.

In addition access may be required to support:

- a building maintenance system;
- a taxi phone;
- master antenna television (MATV) in waiting rooms and possibly in surgeries;
- closed circuit television (CCTV) if indicated;
- public address system;
- background music;
- duress alarm system; and
- nurse / emergency call systems.

RADIATION SCREENING

All medical imaging equipment and rooms where x-rays are taken must meet the radiation safety requirements of state and local authorities.

State guidelines will determine the use of lead aprons and where required should be provided for patient and operator. Lead apron hangers to be installed within the room.

Requirements for shielding may differ for digital radiography with shorter exposures.

Radiation shielding, including requirements for wall shielding, must comply with the Radiation Health Committee (ARPANSA), 2005, Radiation Protection in Dentistry - Code of Practice and Safety Guide.

AIR-CONDITIONING, VENTILATION AND HEATING

Air-conditioning is required in all areas during standard operating hours. Capacity to override air-conditioning to provide emergency service in either one surgery or the total unit after hours is required. Staff working in individual dental surgeries should be able to adjust the temperature of each room to maintain the comfort of practitioners and patients.

If a Dental Laboratory is included, special consideration should be given to the specialised equipment requiring removal of noxious fumes, dust, and heat. Many Units will be provided with specialised proprietary equipment and benching requiring extraction and other services. High quality exhaust/extraction system is required for the burn-out oven.

Provision also needs to be made for exhaust from the sterilizer in the Instrument Processing Room.

Refer to:

- Part E: Building Services and Environmental Design; and
- Department of Health, NSW, 2013, Technical Series TS11 - Engineering Services and Sustainable Development Guidelines.

WATER

Potable water filtered for particulate matter is required for dental units. Metering of water to clinical area is required for waste management purposes.

All dental operating units have integral suction systems which remove contaminated water and body fluids from the operation site. This waste requires coarse filtering (usually integral to the unit), separation of heavy metals and then disposal.

Equipment must comply with technical regulations in each jurisdiction to ensure that cross contamination is eliminated.

MEDICAL GASES

All surgeries will require compressed air and dental suction and may require medical oxygen and medical suction. Services should ideally be piped if sufficient volumes are used, but may be provided via portable cylinders in small units. Compressed air will also be needed in instrument reprocessing room.

Depending on the operation policies with regard to level of sedation and care/treatments provided, medical air, nitrous oxide and scavenging may also be required.

DENTAL SUCTION

Everything from the patient's mouth is extracted via the dental suction system. This material is contaminated biologically and will contain mercury when amalgam fillings have been removed. The extracted solids are trapped, either within the chair-side unit or in the Dental Plant Room. The suction containers from the chair-side units must be emptied on a regular basis; Plant Room traps are emptied by maintenance staff / contractors, during routine servicing.

Dental suction systems must not be confused with medical suction systems.

PLANT ROOM AND SUPPLY LINES

A plant room of sufficient size is required to accommodate all the mechanical and electrical plant. Service supply lines (compressed air, vacuum, extraction systems etc.) and hydraulics may be run under a suspended floor slab to allow for easy service maintenance and future alteration, expansion or upgrade of equipment. For an on-the-ground concrete slab, services should be placed in a covered (removable) services trench, or consideration given to running services through ceiling and wall spaces where possible.

The distance between the plant room and Oral Health Unit, must not exceed the equipment manufacturer's recommendations. This includes vertical distances as well.

04 COMPONENTS OF THE UNIT

04.01 Standard Components

Rooms / spaces are defined as:

- *standard components* (SC) which refer to rooms / spaces for which room data sheets, room layout sheets (drawings) and textual description have been developed;
- *standard components – derived rooms* are rooms, based on a SC but they vary in size. In these instances, the standard component will form the broad room 'brief' and room size and contents will be scaled to meet the service requirement;
- *non-standard components* which are unique rooms that are usually service-specific and not common.

The standard component types are listed in the attached Schedule of Accommodation.

The current Standard Components can be found at: www.healthfacilityguidelines.com.au/standard-components

04.02 Non-Standard Components

Non-Standard Components are generally unit-specific. Provide the Non-Standard Components as identified in this section and in the Schedule of Accommodation, according to the Operational Policy and Functional Brief.

DENTAL SURGERY – 16m²

Description and Function

A larger surgery to accommodate patients with special needs such as the disabled, morbidly obese and those on a trolley.

All other detail is consistent with the Standard Component of a 14m² Dental Surgery.

Location and Relationships

This room should be located so that the entry is a direct run from the entry to the Treatment Area. This will avoid manoeuvring of wheelchairs and trolleys through corridors.

Considerations

There should be sufficient space beside the dental chair to accommodate a trolley or wheelchair.

Consideration should be given to the use of a "knee-break" chair in a room such as this to make the transfer of the patient from a wheelchair easier.

Doorways will accommodate trolleys and bariatric wheelchairs.

DENTAL SURGERY – 2 CHAIR

Description and Function

A room that accommodates two dental chairs. Often used by dental therapists and for work with children.

An optional frosted glass barrier is possible between the two chairs. This will provide for noise control and privacy.

Other fit-out details will be in line with the Dental Surgery – 14m².

ORTHOPANTOMOGRAPHY (OPG) ROOM

Description and Function

OPG and other extra-oral radiography facilities are specialised medical imaging procedures.

Location and Relationships

Located in direct access of dental surgeries.

Considerations

Will only be established in large, hospital-based units. The option to outsource dental radiography from Medical Imaging Units should be considered.

Shielding issues will need to be considered during design to ensure the safety of staff and general public.

INSTRUMENT REPROCESSING

Description and Function

The instrument reprocessing area will be used to wash, decontaminate and sterilize dental instruments. The room is organised in two distinct areas: 'dirty' and 'clean'.

The 'dirty zone' is the area where dirty instruments are received and washed using manual methods, ultrasonic cleaning or a washer/ disinfectant.

Once these instruments are decontaminated, they are passed through to the 'clean zone' where they are packed and sterilized.

Location And Relationships

This area needs to be in close proximity of dental surgeries to facilitate the easy movement of clean and dirty instruments.

Considerations

There will be clean and dirty separation with a one-way flow from where dirty instruments are received. If the Oral Health Unit is located on a hospital site, instruments may be transferred to the Sterile Supply Unit for reprocessing. Should this solution be adopted, space will still be required in the Oral Health Unit to accommodate dirty instruments (the Clean-up Room) and store instruments that are returned, ready for use. For further information relating to design, health technology and mechanical service requirements refer to HPU190 Sterile Supply Unit.

DENTAL LABORATORY

Description and Function

An area for adjusting and polishing dentures and for the construction of prosthetic appliances and other items related to dental treatment (unless outsourced).

This room is not routinely provided in an Oral Health Unit as the manufacture of dentures etc. is usually centralised. Instead, a Dental Workroom is usually provided (refer to 208.21.40)

Location and Relationships

The Dental Laboratory should be located with ready access to the Dental Surgery Rooms but sufficiently removed to minimise transfer of dust, noise and fumes.

Considerations

- Lighting - natural / fluorescent mix for colour matching.
- Moisture-resistant joinery - all surfaces including drawers must be laminated or moulded plastic or stainless steel for ease of cleaning.
- Storage area for models.
- Inclusion of a plaster trap under the sink is advised if there is a high denture workload envisaged.
- Non-slip vinyl flooring.
- Mechanical debris/dust extraction (external exhausting) through hoods in polishing bays and at desk-tops is required.

DENTAL WORKROOM

Description and Function

An area for:

- preparing plaster models;
- trimming models;
- trimming dentures; and
- undertaking minor repairs of dentures.

This room is routinely provided in an Oral Health Unit to provide a dedicated space to undertake the tasks as described above.

Location and Relationships

The Dental Workshop should be located with ready access to the Dental Surgeries but sufficiently removed to minimise transfer of dust, noise and fumes.

Considerations

Lighting - natural / fluorescent mix for colour matching.

Moisture-resistant joinery - all surfaces including drawers must be laminated or moulded plastic or stainless steel for ease of cleaning.

Storage for equipment and materials.

Inclusion of a plaster trap under the sink is advised if there is a high denture workload envisaged.

Non-slip vinyl flooring.

Mechanical debris/dust extraction (external exhausting) through hoods is needed.

PLANT ROOM

Description and Function

Plant specific to the provision of dental service.

Location and Relationships

This plant cannot be located remotely from chairs. External access required.

Considerations

The equipment located in the plant, including suction power unit can be noisy and this must not impact on staff and/or patient treatment areas.

GOODS RECEPTION/ RECEIVING

Description and Function

An external point to receive and despatch goods such as consumables and waste.

Location and Relationships

Located nearby storage areas to promote the movement of consumables from the point of delivery to storage areas.

Considerations

Generally only provided in large hospitals or community health centres owing to staff resources associated with receipt and distribution.

TREATMENT ROOM

Description and Function

In cases where there is low utilisation of a dental chair, health services may instead provide a treatment room that is sized to accommodate a dental chair with a fixed light but is large enough to be used for other patient services (e.g. wound care, podiatry, ophthalmology) when a supine position is required. A size of 16m² is recommended.

The use of portable equipment such as the dental cart and dental suction is recommended so it can be stored when not in use. Lockable storage, either fixed or portable, will be required for other dental materials.

Location and Relationships

Ready access to reception and waiting areas. Ready access to Clean-up Room or Dirty Utility to wash and store used instruments.

Considerations

The dental chair must still be positioned with enough circulation to allow the safe and effective delivery of oral health services.

An assessment should be made as to whether a mobile dental x-ray unit could be utilised in place of a fixed unit should a fixed solution impede access for alternate patient care. This assessment will need to consider Environmental Protection Agency (EPA) restrictions on use of portable x-ray.

A dental chair with knee-brake should be considered as it provides a more flexible solution to deliver other patient care.

AX APPENDICES

AX.01 Schedule of Accommodation

A schedule of accommodation is shown below and lists generic spaces for this HPU.

Quantities and sizes of spaces will need to be determined in response to the service needs of each Unit on a case-by-case basis.

The 'Room/ Space' column describes each room or space within the Unit. Some rooms are identified as 'Standard Components' (SC) or as having a corresponding room which can be derived from a SC. These rooms are described as 'Standard Components –Derived' (SC-D). The 'SD/SD-C' column identifies these rooms and relevant room codes and names are provided.

All other rooms are non-standard and will need to be briefed using relevant functional and operational information provided in this HPU.

In some cases, Room/ Spaces are described as 'Optional' or 'o'. Inclusion of this Room/ Space will be dependent on a range of factors such as operational policies or clinical services planning.

ENTRY / RECEPTION/ WAITING

AusHFG Room Code	Room / Space	SC / SC-D	Qty x m2 2 Chairs	Qty x m2 4 Chairs	Qty x m2 6 Chairs	Remarks
AIRLE-10	Airlock - Entry, 10m2	Yes	1 x 10	1 x 10	1 x 10	Optional depending on location and scale of development.
RECL-10 / RECL-12	Reception / Clerical	Yes	1 x 9	1 x 9	1 x 12	1 and 2 staff
STFS-10	Store - Files	Yes	1 x 6	1 x 8	1 x 10	
STPS-8	Store - Photocopier / Stationery, 8m2	Yes	Share	1 x 8	1 x 8	
WAIT-10 / WAIT-20	Waiting	Yes	1 x 10	1 x 16	1 x 24	Based on 3 people per dental chair
PLAP-10	Play Area - Paediatrics	Yes	Incl. in Waiting	1 x 10	1 x 10	Optional
BMEQ-4	Bay - Mobile Equipment	Yes	Share	1 x 2	1 x 2	1 -2 wheelchairs
WCPU-3	Toilet - Public, 3m2	Yes	Share	1 x 3	1 x 3	Optional as visitor amenities may be shared with other services
WCAC	Toilet - Accessible, 6m2	Yes	Share	Share	1 x 6	Optional as visitor amenities may be shared with other services.

TREATMENT AREAS

AusHFG Room Code	Room / Space	SC / SC-D	Qty x m2 2 Chairs	Qty x m2 4 Chairs	Qty x m2 6 Chairs	Remarks
DENSR-14	Dental Surgery, 14m2	Yes	2 x 14	3 x 14	3 x 14	
DENSR-16	Dental Surgery, 16m2	Yes	0	1 x 16	1 x 16	Bed access, only if required. An additional 2m2 may be required should a wheelchair lifter be needed.
	Dental Surgery - 2 chairs		0	0	1 x 34	
PBTR-H-6	Patient Bay - Holding, 6m2	Yes			6	Optional. Provide 6m2 per chair for patient recovery if a dedicated service provided.
BHWS-B	Bay - Handwashing, Type B	Yes		1 x 1	1 x 1	Collocate with Recovery if provided
BRES	Bay - Resuscitation	Yes	Share	1 x 1.5	1 x 1.5	Optional - dependent on Unit policy.

SUPPORT AREAS

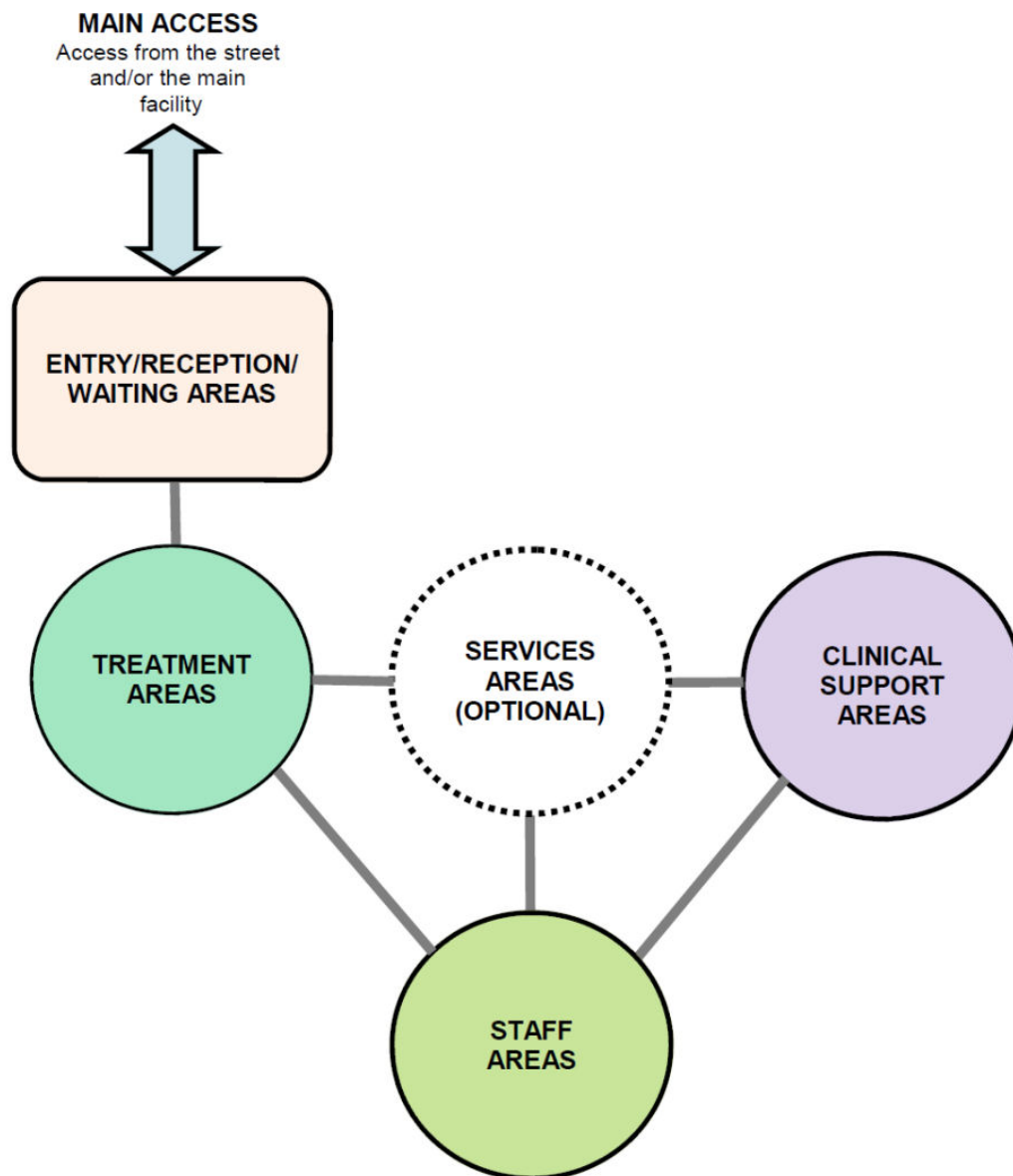
AusHFG Room Code	Room / Space	SC / SC-D	Qty x m2 2 Chairs	Qty x m2 4 Chairs	Qty x m2 6 Chairs	Remarks
	OPG Room		0	1 x 7	1 x 7	Optional
DENW	Dental Workroom	Yes	1 x 8	1 x 12	1 x 12	This is not intended as a laboratory which would be used for the manufacture of prosthetics. Details of requirements for a Dental Laboratory have been included in Non-Standard Components.
	Instrument Reprocessing		1 x 10	1 x 12	1 x 20	
STGN-8	Store - General	Yes	1 x 4	1 x 6	1 x 8	Sterile stock storage
CLRM-5	Clean-up Room	Yes	1 x 7	1 x 7	1 x 7	For fluids disposal, soiled linen holding etc.
BLIN	Bay - Linen	Yes	1 x 2	1 x 2	1 x 2	
STGN-9	Store - General		1 x 9	1 x 12	1 x 14	
CLRM-5	Cleaners' Room, 5m2	Yes	Share	1 x 5	1 x 5	Optional - may be shared with other services if collocated in a CHC or MHPS
	Plant Room		1 x 9	1 x 9	1 x 12	After-hours access
	Goods Reception / Loading		0	1 x 15	1 x 15	Space for one truck - dependent on model

STAFF AREAS

AusHFG Room Code	Room / Space	SC / SC-D	Qty x m2 2 Chairs	Qty x m2 4 Chairs	Qty x m2 6 Chairs	Remarks
OFF-S9	Office - Single Person, 9m2	Yes	1 x 9	1 x 9	1 x 9	Senior dentist
	Office - Workstation, 5.5m2		5.5	5.5	5.5	Number to suit shared access by staff for administration etc.
MEET-L-20	Meeting Room	Yes	0	1 x 15	1 x 20	Suitable for videoconferencing unless provided nearby.
SRM-15	Staff Room	Yes	0	1 x 12	1 x 15	May be shared in a CHC
BBEV-OP	Bay - Beverage, Open Plan	Yes	1 x 3	0	0	
PROP-2	Staff Property Bay - Staff	Yes	1 x 1	1 x 2	1 x 3	
SHST	Shower - Staff, 3m2	Yes	0	1 x 3	1 x 3	Can be shared if provided in a CHC.
WCST	Toilet - Staff, 3m2	Yes	1 x 3	1 x 3	1 x 3	Number dependent on staff numbers
	Discounted Circulation %		25	32	32-35	

AX.02 Functional Relationships / Diagrams

The following diagram sets out the functional relationships between zones in an Oral Health Unit.



AX.03 Checklists

For planning checklists, refer to Parts A, B, C and D of these Guidelines.

AX.04 References

- AHIA, 2010, AusHFG Part E: Building Services and Environmental Design, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW

- AHIA, 2010, AusHFG Part C: Section 730, Design for Access, Mobility, OHS and Security, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW
- AHIA, 2010, AusHFG Part C: Section 710, Design for Access, Mobility, OHS and Security, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW
- AHIA, 2010, AusHFG Part F: Section 680 Furniture Fittings and Equipment, Australasian Health Facility Guidelines, Australasian Health Infrastructure Alliance (AHIA), Sydney, NSW.
- Australian Dental Association, 2012, ADA Guidelines for Infection Control (Second Edition), Australian Dental Association Inc., St Leonards, NSW Department of Health, NSW, 2013,
- Technical Series TS11 - Engineering Services and Sustainable Development Guidelines, Department of Health, NSW, North Sydney, NSW NHMRC, 2010, Australian Guidelines for the
- Prevention and Control of Infection in Healthcare (2010), Australian Government, Canberra, Australia Standards Australia, 2010, AS 1428 (Set) 2010 Design for access and mobility Set (SAI Global), Standards Australia, Sydney, NSW
- Standards Australia, 2006, AS/NZS 4815:2006 Office-based health care facilities - Reprocessing of reusable medical and surgical instruments and equipment, and maintenance of the associated environment, Standards Australia, Sydney, Australia
- Standards Australia / Standards New Zealand, 2014, AS/NZS 4187:2003 Reprocessing reusable medical devices in health care organisations.

AX.05 Further Reading

AUSTRALIA AND NEW ZEALAND

- AS/NZS 2982.1:1997 Laboratory Design and Construction Part 1: General Requirements;
- AS/NZS 2243.1:2005 Safety in Laboratories Part 1: Planning and Operational aspects;
- AS/NZS 2243.10:2004 Safety in Laboratories Part 10: Storage of chemicals;
- Department of Human Services, Victoria, 2003 Oral Health Guidelines for Victorians;
- Government of South Australia, 2010 South Australia's Oral Health Plan, 2010 – 2017, South Australian Dental Services;
- Ministry of Health, 2006 Community Oral Health Service: Facility Guideline. Wellington, New Zealand;
- National Advisory Committee on Oral Health, July 2004; 'healthy mouths healthy lives, Australia's National Oral Health Plan 2000- 2013',
- NSW Health, 2013 PD2009_074 Eligibility of Persons for Public Oral Health Care in NSW;
- NSW Health, 2013 PD2013_024 Oral Health: Cleaning, Disinfecting and Sterilizing;
- NSW Health, 2011 GL2011_002 Dental Amalgam – Its Clinical Use and Disposal;
- Queensland Health, 2013 Queensland Health Guideline: Storage Design for Sterile and Non-Sterile Stock Storage for New and Refurbished Healthcare facilities;
- Queensland Health, 2012 Oral Health Facility Design Guidelines;
- Queensland Health, 2011 Oral Health Services Policy and Procedures Manual;
- Queensland Health, 2011 (2011b) Infection Control Guidelines;
- Queensland Health, 2010 Oral Health Services Capital Facility Implementation Standard;
- Queensland Health, 2010 Queensland Health Oral Health Services Policy
- Queensland Health, 2008 (2008a) Disinfection and Sterilisation Infection Control Guidelines;
- Queensland Government (2000b) Environmental Protection (Waste Management) Regulation. Reprinted 2011; and
- Queensland Government (2000a) Environmental Protection (Waste Management) Policy. Reprinted 2009.

INTERNATIONAL

- Centers for Disease Control and Prevention, 2003 Guidelines for Infection Control in Dental Health Care Settings.