



Health
Sydney
Local Health District

Oral Health Clinical Stream Position Paper 2015-2020

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Foreword by Clinical Director



Oral Health is an integral part of general health and there is an increasing body of evidence linking oral disease with systemic health.

The Sydney Dental Hospital (SDH) provides level six oral health services, which support eligible residents of NSW for their tertiary and quaternary oral health needs, with specialist outreach provided to oral health services locally and across the State. There are currently 160 public dental chairs available in SLHD. The majority of public dental chairs (143) are located at SDH, a major standalone tertiary dental facility, which is easily accessible due to its close proximity to the Central railway and bus station transport hub. Sydney Dental Hospital formerly known as the United Dental Hospital of Sydney celebrated its 110th anniversary in 2014.

Sydney Local Health District recognises that the demand for oral health services will continue to grow, in response to population growth, changes in patterns of oral health disease (and other diseases), the increase in tooth retention, greater awareness of the importance of maintaining good oral health, and the introduction of more advanced procedures and techniques.

The SLHD Oral Health Service and SDH will meet these demands by continuing to protect, promote, maintain and improve the oral health of the eligible population of SLHD and NSW, whilst strengthening access to services and programs for communities which are vulnerable, marginalised or experiencing the poorest health. Key goals of the SLHD Oral Health Service are to:

- improve the dental visiting patterns for all of the eligible population
- deliver focussed efforts to ensure targeted service provision to those who are most in need
- improve the community's oral health status through the continued commitment to oral health promotion and prevention strategies

This position paper provides a framework to support the ongoing development of the SLHD Oral Health Clinical Stream. It provides an overview of the oral health status of the population, outlines the goals for oral health services, describes target groups that require focussed efforts, and outlines the local level actions that will be pursued to improve the oral health of the population. Our priority actions are to:

- Continued implementation of the SLHD Oral Health Workplace Culture Improvement Strategy, including the delivery of projects developed in consultation with staff
- Support and strengthen the relationship with educational institutions that provide dental education programs. This particularly applies to the University of Sydney
- Commence SDH master planning as outlined in the SLHD Strategic Plan 2012-17
- Improve clinical and corporate productivity and efficiency of the SLHD Oral Health Service through a range of strategies, including exploration of revenue opportunities
- Develop strategies to ensure SLHD Oral Health Service readiness for implementation of the Oral Health Activity-Based Funding model

- Explore opportunities to participate and actively build on the Medicare Child Dental Benefit Scheme (CBDS) to supplement the current state funding allocated to public dental services.

Other SLHD Oral Health Service Infrastructure and major equipment priorities include:

- Planning for the expansion of the existing Community Oral Health Clinic at Concord Hospital to support the provision of a clinic with a focus on mental health, special needs dentistry and improving access to oral health services for Concord Hospital inpatients
- Redesigning specialty units including upgrading the Special Support, Periodontics and Endodontic departments; Surgery redesign of the Oral Surgery's recovery area for the provision of intravenous sedation and general anaesthetic recovery; expansion of the fourth floor Ceramics Laboratory for increased prosthetic dental work and expansion of the Paediatric Dentistry department
- Finalising the rollout of the SCAN Ex Imaging-Photo Stimulable Phosphor Program across the Oral Health Clinical Stream.
- Develop the IT capacity of the SLHD Oral Health Service including:
 - A new Information Management System capable of integrating with PAS, PAX and other health IT systems, including the electronic medical record
 - Improved bandwidth for Sydney Dental Hospital to Royal Prince Alfred Hospital replacing the current microwave linkage. A faster connection with higher capacity to transfer to the RPA server for data storage, scanner, digital imaging and 3-D imaging data is required
 - A high capacity data storage server at RPA for the digital data storage for oral health imaging
 - Access to information via improved and faster Wi-Fi internet access
 - Use of broader communication platforms such as Facebook and discussion forums/bulletin boards for Oral Health promotion
 - Implementation of the relevant key components of the SLHD Information and Communication Technology Strategy 2015-2020.

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Clinical Director

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Sydney Local Health District

Introduction

The purpose of this position paper is to outline oral health service provision across the District and to identify tertiary and quaternary service priorities. In addition to consultation with clinicians within the Oral Health Stream and across the District this position paper was informed by the following strategic documents:

- Oral Health 2020: A Strategic Framework for Dental Health in NSW
- NSW Oral Health Capital Strategy 2011-2020
- NSW Aboriginal Oral Health Plan 2014-2020
- SLHD Strategic Plan 2012-2017
- SLHD Asset Strategic Plan 2013 & 2014
- SLHD Education and Training Strategic Plan 2012-2017
- SLHD Research Strategic Plan 2012-2017
- SLHD Information and Communication Technology Strategy 2015-2020
- Canterbury Hospital Strategic Plan 2012-2017
- Concord Repatriation General Hospital Strategic Plan 2012-2017
- Royal Prince Alfred Hospital Strategic Plan 2012-2017
- SSWAHS Aboriginal Health Plan 2010-2014
- SSWAHS Oral Health Clinical Services Strategic Plan 2005-2016

Our Organisation

The SLHD Oral Health Service has the following five goals:

- To maintain the oral health of eligible populations
- To promote the importance of oral health as an integral part of general health
- To provide appropriate and evidence-based oral health care
- To deliver high quality oral health services
- To manage oral health services effectively and efficiently

It embodies the following features:

- Improving the overall wellness of the population with individuals encouraged to lead healthy lifestyles and improve their oral health habits
- Improving the patient journeys through the oral health services
- Ensuring access to oral health services is effective, timely and based on patient's needs
- Ensuring evidence-based service delivery
- Undertaking research into oral health provision and the translation of research into clinical practice
- Improving infrastructure to meet the challenges of oral health service delivery
- Strengthening the integration and coordination across the health sector with sharing of oral health information to improve the quality of care
- Ongoing commitment to the education of the future dental workforce
- Ensuring the OHS has valued health professionals, improved workforce skills, capacity and practice models

The number of community dental clinics and chairs in SLHD are identified in Table I below.

Table I: SLHD Public Dental Clinics and Chairs, 2015

Clinics	Chair	Setting
Canterbury Hospital Dental Clinic	4	Hospital
Concord Community Oral Health Clinic	2	Hospital
Croydon Community Oral Health Clinic	4	Community Health
Marrickville Community Oral Health Clinic	4	Community Health
Royal Prince Alfred Hospital Clinic	3	Hospital
Sydney Dental Hospital Clinic	143	Hospital
Total	160	

Note: Numbers are correct as of April 2015.

There are currently 160 public dental chairs in SLHD, 121 within specialist and clinical teaching areas of SDH, 3 within RPA targeting in-patients and 36 in Community Oral Health Clinics (COHC). A proportion of these chairs are permanently allocated to student education, in recognition of the role of SDH has as a tertiary teaching hospital. Of the 36 COHC chairs, 14 are located outside SDH in a range of clinics based in community health centres, or at hospital sites.

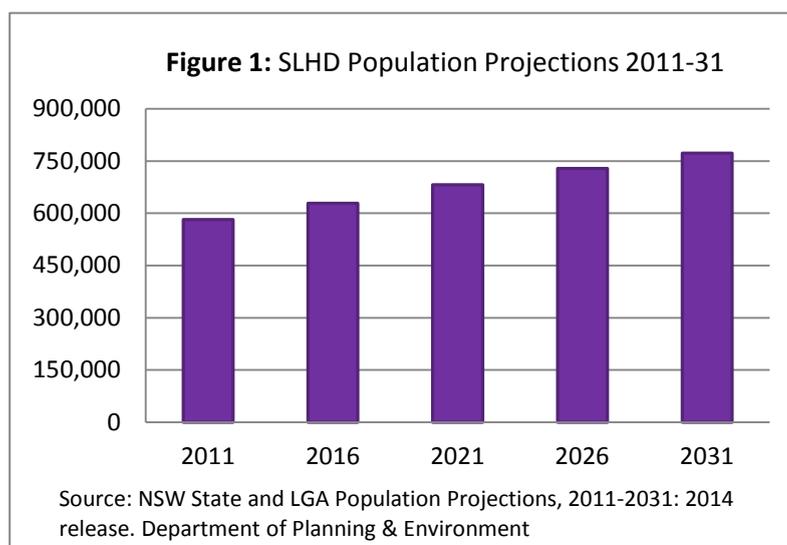
In addition to the services provided in SDH and COHCs, much oral health activity is provided in the inpatient setting through inpatient consultations, assistance with surgery (such as head and neck oncology), through the emergency departments in various hospitals in the case of oral trauma and through direct admissions for dental extractions and restorations.

Our Community

The Sydney Local Health District (SLHD) comprises the Local Government Areas (LGAs) of the City of Sydney (part), Leichhardt, Marrickville, Canterbury, Canada Bay, Ashfield, Burwood and Strathfield. It covers 126 square kilometres and has a population density of 4,210 residents per square kilometre.

SLHD includes the principal teaching hospitals Royal Prince Alfred and Concord Repatriation General Hospital and the district hospitals, Balmain and Canterbury. SLHD also includes the Sydney Dental Hospital, a tertiary referral and teaching hospital. SLHD has a comprehensive range of community-based health services, linked with primary care providers, including the Primary Health Network.

The population of SLHD is projected to increase by almost 190,500 people in the next 20 years, with all SLHD local government areas expected to experience population growth. SLHD is socio-economically and culturally diverse. Its population is ageing, with the number of residents aged over 65 projected to increase by 76 per cent over the next decade.

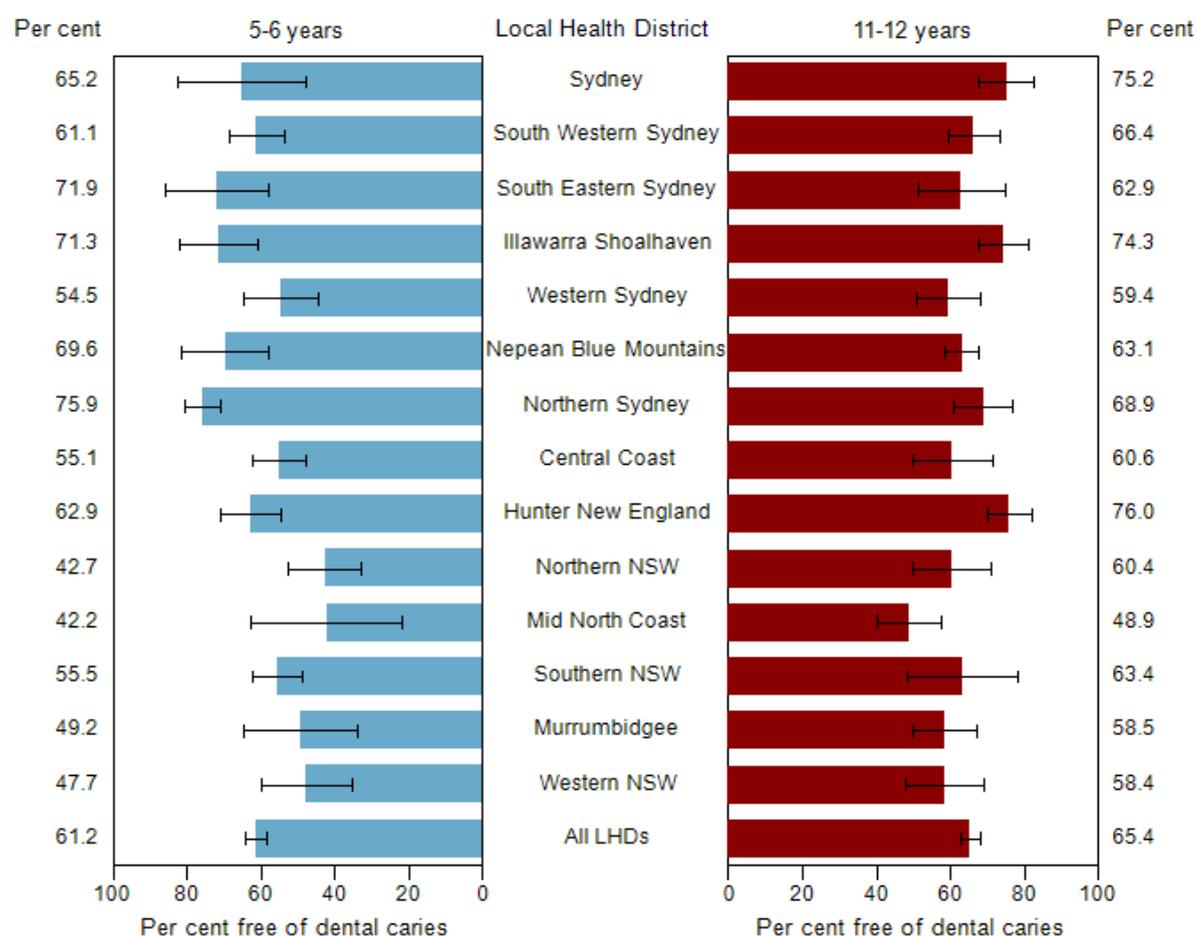


The area is home to significant populations of Aboriginal people and to people who speak a language other than English at Home. The main languages spoken by SLHD residents are Mandarin, Arabic and Greek. The SDH also sees a large number of residents from South West Sydney Local Health District and South Eastern Sydney Local Health District, with the main languages for SWSLHD residents being Arabic, Chinese and Vietnamese, while SESLHD residents mainly speak Mandarin, Greek and Cantonese.

A key indicator of the oral health status of the population is the incidence of dental caries, which is a largely preventable, chronic and multifactorial lifestyle related disease of microbial origin. Figure 2 identifies that in 2007, 65.2% of SLHD children (5-6 years) and 75.2 % of SLHD children (11-12 years) were free of dental caries which was higher than the NSW average (61.2% and 65.4% respectively).

Figure 2: Free of Dental Caries by LHD, aged 5-6 years and 11-12 years, 2007.

Free of dental caries by Local Health Districts, children aged 5-6 years and 11-12 years, NSW 2007



Source: Child Dental Health Survey, 2007

This data is from the most recent survey of child dental health in NSW which was undertaken in 2007, data collection for the next Child Oral Health Survey commenced in 2012/13.

The oral health status of adult SLHD residents is difficult to quantify due to a lack of available data. The most recent data for adults is provided by the National Survey of Adult Oral Health 2004-06. As identified in Table 2 the oral health status indicators for NSW adults did not differ significantly from the national average.

Table 2: Oral Health Status of NSW and Australian Adults, 2004-06

Oral health status	NSW (95% CI)	Australia (95% CI)
Percentage of adults with complete tooth loss	5.5 (4.8–6.3)	6.4 (6.0–6.9)
Percentage of adults with fewer than 21 natural teeth	11.7 (10.5–13.1)	11.4 (10.7–12.1)
Percentage of dentate adults who wear dentures	15.9 (14.5–17.4)	14.9 (14.2–15.7)
Percentage of adults with untreated coronal decay*	27.1 (23.6–30.9)	25.5 (23.7–27.3)
Average number of teeth per person missing due to pathology	4.9 (4.4–5.4)	4.5 (4.3–4.8)
Average number of decayed, missing or filled teeth per person	12.8 (11.9–13.7)	12.8 (12.4–13.3)
Percentage of adults with >4 mm periodontal pocket depth**	21.4 (17.8–25.5)	19.8 (17.9–21.8)

95% CI: 95% confidence interval for estimated percentage/estimated mean.
 *Percentage of people who have at least one or more decayed surface on the crowns of their teeth.
 **An indicator for the severity of periodontal disease is measurement of periodontal pocket depths more than 4 mm.
 Source: The National Survey of Adult Oral Health 2004–06. New South Wales.⁶

Source: The National Survey of Adult Oral Health 2004–06.

However, research undertaken by the National Advisory Committee on Oral Health¹ and produced for the Australian Health Ministers Conference² indicates that there is an increasing incidence of dental caries evident particularly in adolescents and young adults, and that approximately 80% of the Australian population have some periodontal disease.

The population eligible for public oral health services in NSW is governed by the *NSW Health Policy Directive 2009/74*³. In NSW, public oral health services are provided to children 0-5 years of age and those persons less than 18 years of age undertaking fulltime primary, secondary or tertiary studies, or holding a social security card in their own right.

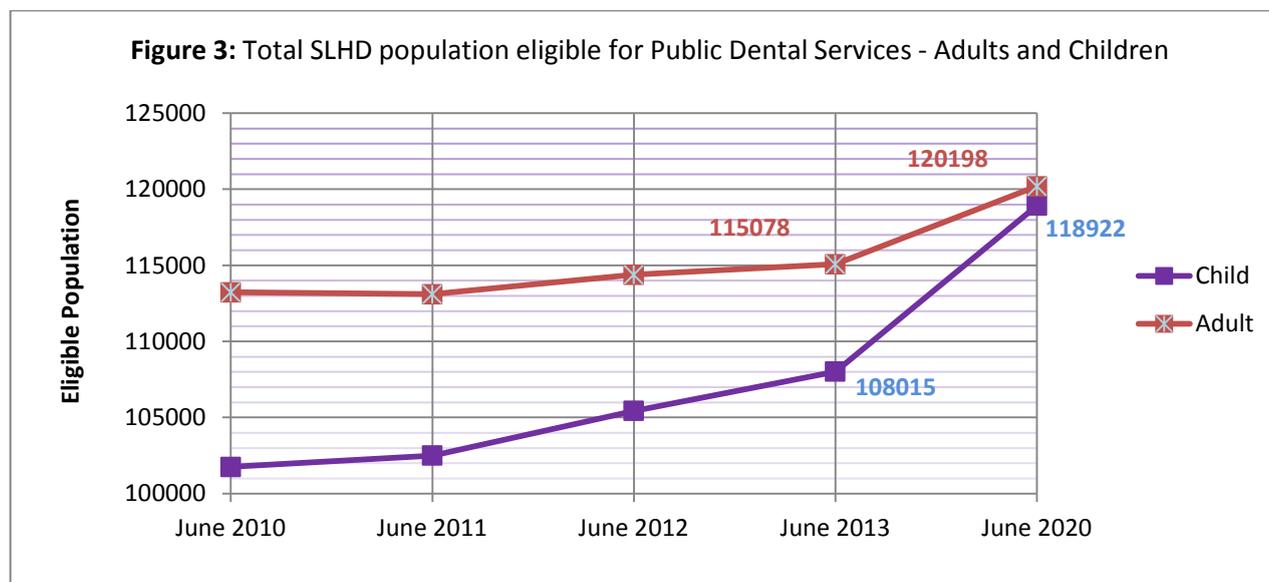
For adults, eligibility means they have one or more of the following cards: Commonwealth Seniors Health Card, Health Care Card, or Pensioner Concession Card. NSW Health does not charge a co-payment for oral health services except for a few very high end services such as implants, crown and bridge services. All dependants listed on health care cards and pensioner concession cards are also eligible for free oral health care in NSW public oral health clinics, usually within their LHD of residence.

¹ National Advisory Committee on Oral Health (2004) *Healthy Mouths Healthy Lives: Australia's National Oral Health Plan 2004 – 13*

² Australian Health Ministers' Advisory Council Steering Committee for National Planning for Oral Health, (2001) *Oral Health of Australians: National Planning for Oral Health Improvement*, South Australian Department of Human Services, Adelaide

³ PD2009_074 *Oral Health Eligibility of persons for public oral health care in NSW*. NSW Ministry of Health, 2009.

Figure 3 illustrates the number of adults and children estimated, by the Office of the Chief Health Officer to be eligible to access public oral health services in NSW from 2010 to 2020.



Source: Estimates of persons eligible for public dental service in NSW. Office of the Chief Health Officer, NSW Ministry of Health, August 2013.

From the above 2013 figures, SLHD will experience a 9 per cent (10,907) increase in children and a 4 per cent (5,120) increase in adults that will be eligible for public oral health services by 2020. The estimated total eligible population by 2020 in SLHD will be 239,120, an increase of 6.7 per cent from the 2013 population.

Currently, Sydney Dental Hospital provides oral health services to SLHD, SWSLHD and SESLHD residents. Tertiary services are also provided to all eligible NSW residents. Currently, the highest inflows to SLHD oral health services are from SWSLHD and SESLHD residents. In 2013/14, approximately 49 per cent of SLHD oral health services were provided to SWSLHD residents.

Table 3: Eligible Population of SLHD, SWSLHD and SESLHD, 2011 & Projected Population for 2021.

Local Health District	2011 Total Population	Eligible Population
Sydney*	578,162	35.2% (203,498)
South Western Sydney	879,674	52.7% (493,913)
South Eastern Sydney#	838,416	39.0% (327,314)
Local Health District	2021 Projected Population	Estimated Eligible Population
Sydney*	642,009	35.2% (225,987)
South Western Sydney	1,058,238	52.7% (557,691)
South Eastern Sydney#	887,289	39.0% (346,043)

Source: Centre for Oral Health Strategy. NSW Oral Health Capital Strategy 2011-2020. NSW Ministry of Health, 2013

Notes: * Includes SDH; # Services for adult residents provided under contract at SDH.

Our Patients, Carers and Consumers

SLHD recognises that demand for oral health services will continue to grow, in response to population growth, changes in patterns of oral health disease (and other diseases), the increase in tooth retention, greater awareness of the importance of maintaining good oral health, and the introduction of more advanced procedures and techniques. Improving the community's oral health status requires the continued commitment to oral health promotion and prevention strategies.

A major concern for oral health services is the potentially compromised dental status⁴ of:

- children and adolescents
- older people; there are strong indicators that dental caries and periodontal diseases are more prevalent and more severe for residents in aged care facilities
- people on a low income or who are socially disadvantaged
- people with special needs (such as people with a disability, refugees and people who are the victims of trauma or torture)
- Aboriginal people; there are strong indicators that Aboriginal children generally have more than twice the dental caries experience and a greater proportion of untreated caries while, Aboriginal adults have more missing teeth

With the increasing recognition of the links between general and oral health, as well as the ageing population, there will be a significant impact on the demand for oral health services within the District. The safe, high quality, compassionate care of these patients and their families requires a strong commitment to the following:

- **Safety**

A safe clinical environment requires a robust clinical governance system, and a highly skilled workforce including senior dental officers, specialists, registrars, residents and new graduates along with adequate dental assistants, dental auxiliary and technical staff. The current physical infrastructure and equipment will need to be updated to support special needs patients.

- **Equity**

The service must equitably meet the increasing demand from the District, and the agreed quaternary and tertiary catchments. It has been recognised nationally that disparity in access is evidence of the need to improve the way in which oral health services care for the population. Nationally, the oral health system has been described as an “episodic, problem oriented primary health approach with little comprehensive treatment and continuity of care”⁵. Improving the dental visiting pattern for all of the population, particularly the most disadvantaged, remains a challenge for the oral health services in NSW. This is acknowledged by SLHD Oral Health Service by adopting an innovative demand management program, along with strict adherence to the Ministry of Health's Priority Oral Health Program.

- **Quality**

The service should ensure integrated service provision supported by common protocols, District-wide databases, peer audit and review, academic leadership, research and education, clinical governance and a positive, compassionate culture committed to patient and family centred care. The analysis of data, clinical performance and evidence-based care are essential. SLHD OHS also regularly undergoes organisation-wide accreditation and meets the National Safety and Quality Health Service standards.

⁴ NSW Health Capital Strategy 2020. Centre for Oral Health Strategy. MoH, 2013.

⁵ Centre for Oral Health Strategy. *NSW Oral Health Capital Strategy 2011-2020*. NSW Ministry of Health, 2013.

Our Services

Oral health services in NSW are delivered by each of the local health districts. The core services delivered include general dentistry such as examinations, fillings, and dentures. In addition to these general oral health services, SLHD through SDH also provides specialist treatment for patients referred state-wide for a range of tertiary and quaternary oral health services. Contracted services are also provided via the Ministry of Health Oral Health Fee for Service Scheme (OHFFSS), which enables public oral health services to provide care through a private practitioner using a voucher system. Eligible patients who receive a voucher will receive the same range of treatment services that are provided in a public oral health clinic. The SLHD OHFFSS has, to date, engaged more than 1,000 private dental providers.

Eligible patients access the SLHD Oral Health Service through a Centralised Oral Health Intake and Information Services (COHIS) located at SDH. On 1 July 2014, SLHD and SWSLHD dissolved their shared oral health services agreement. To ensure that service provision to the disadvantaged populations in the two districts continued, it was agreed that both districts would maintain one COHIS, one database and continue patient flows from SWS to SLHD. It was also decided that the oral health services provided to residents of the northern sector would also continue at SDH and Community Oral Health Centres.

With the introduction of the new COHIS system, patients needing acute services are offered the next available appointment at any of the facilities that span Sydney and South West Sydney LHDs, with the patient able to determine which facility best meets their needs in terms of both care and access.

The OHS in SLHD is comprised of the Sydney Dental Hospital, a tertiary standalone facility and five community-based oral health clinics including a clinic located within SDH and a hospital based clinic at RPA for RPA inpatients.

- **Sydney Dental Hospital - Specialist Division**

SDH provides specialist treatment for patients referred state-wide for:

- Paediatric Dentistry

The Department of Paediatric Dentistry is a secondary and tertiary referral centre for specialist paediatric dental treatment for patients residing in NSW. Services include complex restorative treatments, dental extractions and minor to moderately complex oral surgical procedures. The department has a conscious sedation wing equipped with the latest dental diagnostic, anaesthesia and operative equipment. The department provides treatment under general anaesthetic through operating theatres at Sydney Children's Hospital Randwick, and the Canterbury Hospital. Clinical staff also attend the Cleft Lip and Palate and Craniofacial clinics run through Sydney Children's Hospital. The department is a clinical training centre for the universities of Sydney and Newcastle. Advanced training in paediatric dentistry is provided for recently graduated paediatric dental specialists both from Australia and overseas. The department is recognised by the Australian Dental Council and the Royal Australasian College of Dental Surgeons as a clinical training centre for the specialty of paediatric dentistry.

- Orthodontics

The Department of Orthodontics provides both fixed and removable appliances and orthodontic treatment for eligible patients across NSW. There are strict criteria for offering public orthodontic treatment and waiting lists are an unfortunate reality due to the large demand. The department is staffed almost exclusively by academic staff and post-graduate students of the University of Sydney, with a number of honorary clinical educators, all registered specialist orthodontists from across NSW, the ACT and QLD.

- Endodontics

The Department of Endodontics provides endodontic (root-canal) services as a tertiary referral centre to eligible referred patients from across NSW. Its services include routine and surgical endodontic procedures conducted under local anaesthesia within the department, telephone advice to public dentists across NSW and re-treatment of failed endodontics where possible. Almost all procedures are performed under operating microscopes, using rotary (motorised) endodontic instruments and digital radiography.

- Periodontics

Most periodontal treatments rely on working with the patient to improve their oral hygiene then re-assessing the problem areas and providing some interceptive surgery. Sometimes, deep scaling and cleaning is required, with or without surgery, to reduce the destructive periodontal infections. As part of their curriculum, University of Sydney post-graduate students in the discipline of periodontics receive training in the planning for, and surgical placement of, dental implants.

- Prosthodontics

The Department of Prosthodontics provides advanced restorative treatments, fixed crowns, bridges, removable dentures and other prosthodontic treatment for eligible patients across NSW. There are strict criteria for offering public prosthodontic treatment and long waiting lists are an unfortunate reality due to the large demand.

- Oral and Maxillo-facial Surgery and Oral Surgery

The Department of Oral Surgery provides dento-alveolar surgical services, as well as acting as a primary, secondary and tertiary referral centre. Its services include Oral Medicine and Oral Surgical procedures conducted under local anaesthesia, oral sedation, Intra-venous sedation and general anaesthesia.

- Diagnostic Imaging

The Diagnostic Imaging Unit provides radiographic services to all clinical departments in SDH and also to community based clinics. SDH was the first public dental hospital in Australia to introduce cone beam imaging with the installation of the NewTom 3G in August 2005. It was also the first dental hospital in Australia to complete the transition from wet film radiographic processing to digital image capture. These technological developments have significantly improved both the accuracy and timeliness of diagnostic imaging. The current roll-out of “photo-stimulable phosphor” across the District will support the next phase of both reducing radiological dosage and capturing digital images for more complete clinical records.

- Special Care Dentistry

The Department of Special Care Dentistry is one of two tertiary referral centres in NSW for people with a disability. The department cares for patients with severe chronic medical conditions, medically compromised and geriatric patients and other categories of permanent disability, such as severely physically, mentally and intellectually disabled patients, people with developmental disabilities or behavioural problems. The outreach service provides efficient and effective assessments and referrals for homebound and institutionalised patients. Where necessary, definitive restorative and exodontia treatment is provided under general anaesthesia at either Canterbury or Concord hospitals. The department also provides training for carers in developing oral health care plans for residents of aged care and other facilities, as well as oral health promotion activities for the community.

- **Dental Prosthetics and Implantology Laboratory**

The prosthetics and implantology laboratory is the largest of its kind in the southern hemisphere. The main laboratory provides services associated with removable prosthodontics, and meeting the demands of clinical work generated by dentists, TAFE students and Dental School Undergraduates. The maxillo-facial and implant sections of this laboratory produce intricate appliances for their respective specialists.

The crown and bridge laboratory produce ceramic and gold restorations. The ceramists work closely with general dentists, prosthodontists and periodontists to ensure a high quality result. Fixed implant restorations are also fabricated in this laboratory. The orthodontic laboratory operates with relative autonomy, meeting the clinical demand of orthodontic registrars and the paedodontic department.

- **Forensic Odontology**

Forensic Odontologists assist in the Department of Forensic Medicine at Glebe on a regular basis to assist in the compilation of post mortem reports for the coroner. When called, they proceed to mass casualty disaster areas to assist the Australian Federal Police, InterPol or other authorities in Disaster Victim Identification. SDH Forensic Odontologists assist in training other forensic dental investigators and have developed a system of validation of forensic dental identification. This is a first in the world, and has been presented at various international conferences.

- **Royal Prince Alfred Hospital Oral Health Clinic**

This unique oral health clinic provides limited and palliating dental treatment to significantly medically compromised inpatients of RPA on a referral basis, and to outpatients who are undergoing treatment from hospital specialists. These cases are for haematology, cardiac or transplant surgery or cancer therapy. Most of this care requires clinical follow-up with referring doctors and dentists. Some treatments need to be performed under general anaesthesia, which is performed within RPA.

Community Oral Health Clinics

The Community Oral Health Clinics provide a broad range of emergency and general dental care. Most of these clinics are polyclinics where dental specialists, dentists, dental/oral health therapists, dental prosthetists and other dental auxiliaries work together as a team, providing the most appropriate evidence based treatment to the eligible patients.

The SLHD COHCs locations are as follows:

- **Sydney Dental Hospital - Community Oral Health Clinic** – 22 Chairs
- **Canterbury Hospital Community Oral Health Clinics** – 4 Chairs
- **Concord Repatriation General Hospital Community Oral Health Clinics** – 2 Chairs
- **Croydon Community Oral Health Clinics** – 4 Chairs
- **Marrickville Community Oral Health Clinics** – 4 Chairs

COHCs are the first point of contact for patients (both adults and children) requiring emergency and routine dental care. A comprehensive range of dental services including preventive, educational and curative services are provided using a broad range of the dental workforce. Hospital based COHCs, such as the ones in Canterbury and Concord hospitals, also offer services to dental in-patients who require dental treatment as an integral part of their medical or surgical management, such as cardiovascular surgery.

Oral Health Service Activity

In the 2013/14, financial year there were close to 172,710 Non Admitted Patients Occasions of Service provided at Sydney Oral Health Services⁶. This is a 33% growth in NAPOOS from 2011-12 to 2013-14 financial years.

Table 4: Sydney Oral Health Services Non Admitted Patients Occasions of Service, 2011-12 to 2013-14

NAPOOS			Change 2011-12 to 2013-14	% Change 2011-12 to 2013-14
2011-12	2012-13	2013-14		
129,202	139,445	172,710	43,405	33%

The National Partnership Agreement on Treating More Public Dental Patients (Dental NPA) is a joint Commonwealth and NSW initiative that delivered additional public oral health services to eligible patients as seen in table 4. The additional services targeted the most disadvantaged groups in NSW and increased throughput for these patients. Table 5 quantifies the amount of SLHD OHS Dental Weighted Activity Units (DWAU) generated by the Dental National Partnership Agreement in SLHD and SWSLHD against the NPA target.

Table 5: Sydney and South Western Sydney LHD Dental NPA Activity, 2013-14

July 2013 – June 2014	Cumulative total activity provided (DWAUs)	Cumulative baseline activity expected to date (DWAUs)	Cumulative activity provided above baseline (DWAUs)	% NPA target achieved (above baseline, cumulative to date)
	84,477	67,606	16,871	127%

Source: Dental Weekly NPA Reports, NSW Ministry of Health, 2014.

In addition to the services provided in the SDH and community oral health clinics, much oral health activity is provided in the inpatient setting. The consultative and surgical assistance activity has not been adequately quantified. Clinicians are in agreement that this activity is likely to increase with the increasing number of people who require dental care as a key component of an integrated medical treatment plan.

This ranges from patients undergoing head and neck oncology to those receiving solid organ or bone marrow transplants, to patients who are medically compromised, such as those with diabetes or cardiovascular disease. Dental extractions and restorations are usually planned admissions and are predominantly provided through the private sector.

In the 2013/14 financial year SLHD Oral Health Services provided 495 separations, of those 96 per cent (476) were planned admissions. As per Table 6 this indicates an 8.8% decrease in inpatient activity across the District

⁶ SLHD Executive Management Report July 2014. Performance Monitoring, Systems Improvement & Innovation Unit.

Table 6: SLHD Oral Health Services Inpatient Activity, 2011-12 to 2013-14

		2011-12		2012-13		2013-14		% Change 2011-12 to 2013-14
		SLHD Residents	Non SLHD Residents	SLHD Residents	Non SLHD Residents	SLHD Residents	Non SLHD Residents	
RPA	Day Only	4	2	6	10	4	6	
	Overnight	10	9	8	10	8	21	
	Total	14	11	14	20	12	27	56%
Concord	Day Only	26	49	23	69	26	52	
	Overnight	5	6	4	7	12	5	
	Total	31	55	27	76	38	57	10%
Canterbury	Day Only	125	303	135	299	89	265	
	Overnight	1	3	2	0	3	4	
	Total	126	306	137	299	92	269	-16%
Total (SLHD + non SLHD)		543		573		495		-8.8%

Source: Flowinfo v14. Inclusion SRG: Dentistry

Within SDH, a range of specialist services are provided including paediatric, endodontic, prosthodontics, oral surgery, orthodontics, periodontics, and special care dentistry. Surgery activity within SDH accounted for 1,865 surgery cases in operating theatres in the 2013/14 financial year⁷.

Procedures are conducted under general anaesthesia at SDH, Concord Hospital and Canterbury Hospital. SDH is a day-only centre and cannot admit patients overnight. If a procedure or medical condition warrants overnight admission, it will be scheduled to either Concord or Canterbury hospitals.

Some of the **challenges facing the SLHD Oral Health Service** over the next 10 years include:

Population growth: The population of SLHD is projected to increase by almost 190,500 people in the next 20 years, with all SLHD local government areas expected to experience population growth. These changing demographic patterns will influence the demand for services and will need to be considered in planning the location and type of oral health services provided.

Workforce: The majority of oral health services are provided by the private sector, with a relatively small proportion of the oral health workforce within the public sector. Therefore, attracting and retaining a skilled workforce is an ongoing and significant challenge.

Ageing of the population: The prevalence of edentulism has decreased in older Australians, and accordingly, a range of chronic degenerative dental disorders is now emerging (such as tooth wear, erosion, cuspal fractures, pulp infection, and root fracture). The consequences of increased tooth retention in older adults, combined with an increased proportion of clients in this age group with complex medical needs, means new skills will be required by dentists.

Unequal gains in oral health status: There is a persistent gap between the most and least disadvantaged in the community, for example healthcare cardholders and Aboriginal and Torres Strait Islander people. Focussed efforts will be required to ensure targeted service provision to those who are most in need.

Balance between population prevention and individual treatment services: The cost of providing treatment continues to grow as does the demand for public oral health services. This demand for individual treatment

⁷ SLHD Executive Management Report June 2014. Performance Monitoring, Systems Improvement & Innovation Unit.

will need to be balanced with the need to fund health promotion and disease prevention initiatives. Opportunities to integrate oral health within existing health promotion programs in early childhood and chronic disease management need further exploration.

Ageing Infrastructure: The physical resources available in some community oral health clinics, and within some areas of SDH, require updating to provide for changing demographics including catering for an ageing population.

Evolving Models of Care

The Oral Health 2020: Strategic Framework for Dental Health in NSW has identified guiding principles for effective models of care including:

- **To improve access to oral health services and reduce disparities in the oral health status**

Models of care to support increased accessibility include the wider utilisation of all oral health professionals including dental therapists, dental hygienists and prosthetists to improve access and oral health outcomes.

Further a number of local health districts have also explored, and piloted, after hours clinics on Thursday nights and Saturday mornings. With the commencement of the Medicare Teen Dental Program, local health districts have been running after-hours clinics and this will become more common place, to better utilise public infrastructure and meet the growing needs for more flexible hours of access.

Focussed efforts will continue within SLHD to ensure targeted service provision to those who are most in need including:

- Delivery of the Outreach Special Care Service provided by the SDH Department of Special Care Dentistry which provides a weekly outreach service primarily to frail older people and people with disability who are residents of aged care facilities and boarding houses and have difficulty accessing mainstream services
- Development and implementation of an innovative tool in SLHD, as part of PrIOR Project, which will support the delivery of orthodontic care by public dentists who are not qualified in orthodontics. It will provide dentists competence to monitor, diagnose, treat or refer disadvantaged children in a timely manner

Recognising the tertiary capacity and skillsets of teams working at SDH and the Community Oral Health Clinics, the SLHD Oral Health Stream has adopted a “Hub and Spoke” approach. This approach ensures that SDH continues to be a hub of expertise and links to other oral health services in NSW by sending our teams to support other local services through education and capacity building.

A successful example of this approach is the Aboriginal Oral Health Hub and Spoke Project where clinical teams are employed at SDH Dalarinji Oral Health Clinic to provide much needed services to Aboriginal patients from the three metropolitan Aboriginal medical services. Two clinical teams are also sent to rural and remote Aboriginal medical service bases with dental facilities, but with limited oral health workforce, to improve access to oral health services.

This model increases the ability of smaller services to improve access to a broader range of services in rural and remote areas and create a pathway for referral for eligible Aboriginal people to tertiary services at SDH. As part of this Aboriginal Oral Health Program, SDH has commissioned a dedicated two chair Aboriginal Health Clinic providing assessment and treatment for eligible patients across the three metropolitan

Aboriginal Community Controlled Health Services (ACCHS) and Redfern, Tharawal and Western Sydney AMS.

The Hub and Spoke Project has enabled significant improvement in the access of oral health services by the Aboriginal communities across NSW. The Hub and Spoke Project facilitated this by working with local Aboriginal Medical Services /ACCHSs to develop full time dental clinics within their organisations.

Other examples of SDH hub and spoke approach which characterises the overall oral health model of care includes:

- A concentration of specialised expertise in providing services to at risk groups such as people with special needs, older people, refugees, and homeless people
- Outreach services to community clinics
- Education and training opportunities for staff from the community clinics
- **Integration of oral health into general health to support person and family centred care**

The optimum use of all dental resources in each local health district and across NSW requires collaboration between the public sector, the private sector, and AMSs, with arrangements negotiated to suit local services and circumstances in the LHDs.

The SDH is a clear example of a service that could evolve to provide more integrated patient and family-centred care. Currently, SDH operates to provide both clinical services and educational opportunities. As such, the design of SDH is primarily based on individual components of care, rather than offering a holistic service as occurs in most community based clinics.

Within SDH, the Department of Community Oral Health provides a similar function to the services provided in existing Community Oral Health Clinics. Redesigning an area of SDH to provide a community clinic atmosphere, complete with individual chairs with built-in radiography may permit a more efficient service to be provided for patients as all their treatment needs will be able to be met in a single location. Potential advantages of such a change in service delivery include the ability to benchmark service provision and staffing, and to improve access and equity.

Strategies to further support the integration of oral health into general health includes establishing clinical networks with other relevant health care streams and services. The SLHD Oral Health Services do this extremely well and have comprehensive clinical networks with:

- Hospital clinical streams at Royal Prince Alfred Hospital, Canterbury Hospital, Concord Hospital, Prince of Wales Hospital and the Sydney Children’s Hospital in terms of general anaesthesia services, oral medicine and pathology consults and oral health clinical support to oncology, brain injury, paediatrics, cardiovascular, trauma, plastics, ENT and ED
- Community Health, Youth Health, Drug Health, HIV and related patients, Mental Health, Refugee Health, Aboriginal Health and Multicultural Health
- Former Medicare Locals now Primary Health Networks
- Other LHDs – specialist advice, continuing dental education and clinical rotations, clinical governance support
- ACCHSs - Closing the Gap Aboriginal Oral Health
- University of Sydney (Doctor of Dental Medicine, Bachelor of Oral Health, and Graduate Diploma), University of Newcastle (Bachelor of Oral Health) and TAFE
- Westmead Centre for Oral Health, Centre for Oral Health Strategy, Justice Health, Defence and Federal

Police and FACS

- University of Western Sydney / Centre for Applied Nursing and Research (midwives)

In addition, through these networks, Oral Health Services capacity supports health professionals to assist in identifying individuals at high risk of developing dental disease and directing them into appropriate oral health pathways;

- Early childhood nurses
- Kids with Disability – paediatricians
- Midwives
- RACF Staff and FACS foster parents/ carers
- Staff of other LHDs, Defence Force and other states

- **Improve oral health status through Health Promotion and Early Intervention**

It is clear that a strengthened approach to oral health promotion and preventive care is necessary to reduce the burden of disease on individuals and the community. Integrated primary prevention activities that improve children's diets, and the Early Childhood Oral Health Program; an early intervention program are important actions to improve the oral health of children in NSW. Ensuring good oral health for children in out-of-home care in particular will also be a focus.

As described earlier, integrated approaches to health promotion recognise that chronic diseases and conditions such as overweight and obesity, heart disease, stroke, cancer, diabetes, and oral disease share common risk factors. These risk factors include diet, smoking, and alcohol use. In the coming decade, SLHD will continue to integrate oral health promotion within other health promotion activities.

Into the future, oral health promotion will be able to capitalise on the broader health promotion agenda, particularly within existing early childhood programs and implementation of the Healthy Children Initiative. Strategies within the Initiative will provide the platform for oral health to boost some key common messages, such as choosing water as a drink, promoting breastfeeding, and reducing consumption of sugary drinks and food.

Our Education and Research

Education

SLHD plays an important role in supporting the education and training of dental and oral health students, by providing clinical placements in SDH and Community Oral Health Clinics. SDH is a tertiary referral and major teaching facility, with strong links to the University of Sydney, the University of Newcastle, TAFE and the Australian Dental Association for the training of dentists, dental specialists, oral health therapists, dental hygienists, dental assistants and dental prosthetists.

As such, SDH has been designed to cater for the needs of students, through the provision of space for lectures and tutorials, designated student chairs, student laboratories and office space for the University of Sydney faculty of dentistry staff. SDH clinical staff have a considerable teaching and supervision load to support the Doctor of Dental Medicine students.

These students attend all departments of the SDH at different stages in their course for varying periods of time. At present there are 35 designated student chairs, four of which are located in the Community Oral Health Clinic. These chairs are only utilised by students. Currently, students are also rotated through the dental clinic at RPA and the Aboriginal Medical Service oral health clinic at Redfern.

This partnership has seen and continues to see students from the University of Sydney faculty of dentistry provide valuable oral health services to the community and receive practical training to further develop their professional skills and expertise.

SLHD will look to continue to build on its strong education focus by:

- Supporting the Specialist Mentor Program – 270 dentists have completed the program to date
- Delivering the Volunteer Dental Graduate Year and New Graduate Program – 22 dentists have completed the program since 2012

Research

In addition to the clinical services provided by the oral health workforce, staff are also engaged in a wide variety of research activities. Some of the current key research areas include an examination of the link between periodontal disease and cardiovascular disease risk, new materials for prosthetics, new methods of service delivery, and clinical education.

The research at the SLHD OHS is committed to advancing scientific knowledge and improving the oral health of our patients. We strongly believe that oral health is an integral aspect of general health. Our focus is to be part of multidisciplinary health research to improve the health and well-being of our population.

Our goals are:

- To position SDH as a high-quality, multidisciplinary research institute in addition to its community service provider role
- To encourage research and promote a culture of evidence-based clinical practice within the SLHD OHS
- To strengthen and improve the integration of basic, translational, and clinical research

Key research themes, by department, include:

The Orthodontics department is a leader in the management of obstructive sleep apnoea in adults and growing patients. There is evidence that certain jaw discrepancies are closely related with breathing and sleep problems. However, there are very few studies on the short and long-term effects of the correction of jaw discrepancies on the treatment of sleep apnoea and potential cardiovascular diseases. Our actual and future studies aim to investigate how significant early treatment of jaw discrepancies in growing patients and the use of oral appliances and jaw surgery in adults can help in treating obstructive sleep apnoea, and also its short and long-term side effects, particularly in cardiovascular diseases.

Other areas of research include orthodontic tooth movement and root resorption, orthopaedic functional appliances in the treatment of jaw discrepancies, effects of mechanical vibration on tooth movement, root resorption, bone and condylar growth and accelerated tooth movement.

The Periodontics department is currently investigating the responses to a number of treatment protocols for periodontal disease and implants, changes to the periodontal complex which occur in response to different treatments in both human and animal models and the inter-relationship between periodontal disease and atherosclerosis-induced diseases as evidenced by multiple studies and meta-analyses.

Other areas of research include investigating

- The efficacy of different mouthwashes on plaque formation and gingival inflammation
- The use of piezocision to promote orthodontic treatment
- Histological changes initiated by piezocision
- Efficacy of an air polishing device with a new powder in maintenance patients
- Changes to the health practices of both non-dental clinicians and patients with systemic disease such as HIV infection
- Development of a new approach using implants and orthodontic forces to stimulate vertical bone growth
- Development of new approaches for bone regeneration using tissue printing

The department of Oral Surgery and Diagnostic Imaging has taken the lead role in training Oral Health staff in the management of medical emergencies. The department is also conducting research into how staff learn about medical emergency management, how well they retain the knowledge and how the program is to be developed to best suit the needs of an outpatient health service.

Other ongoing projects include looking at the role of bisphosphonates on dental treatment and B-cell in pemphigus vulgaris. The diagnostic imaging is involved in research related to the oral care of people with disabilities, the use of panoramic images as a potential indicator of undiagnosed thyroid disorder in symptomatic patients, pathology missed on panoramic radiographs and radiographic errors and quality of radiographs taken.

Forensic Odontology is addressing the challenge to the identification sciences within forensic science raised by the National Academy of Science Report of 2009. This challenges some of the underpinnings of identification sciences (bite marks, fingerprints, document examination, and firearms examination). Two validation studies have been initiated in the field of forensic odontology. One involves skills in dental anatomy, with teeth collected in SDH and Canterbury Hospital used to make reproductions to assess skills in dental anatomy among students, practitioners and registered specialist odontologists. The second study is aimed at assessing skills in matching ante mortem and postmortem radiographs. This involves an online study which has been sent to all odontology organisations internationally. This study is still in the data collection

phase. A third validation study aimed at assessing the skills of odontologists at age estimation using dental radiographs is planned.

Endodontic projects include an investigation into the amount of apical debris extruding in three rotary/reciprocating techniques of root canal preparation, a study into why teeth fail and are extracted within 12 months of the completion of the root canal treatment, a meta-analysis of treatment modalities employed in treating the endodontic emergency, an analysis of the effect of smoking on endodontic success and the uptake and utilisation of endodontic treatment in metropolitan and regional AMS clinics.

Population Oral Health

Midwifery Initiated Oral Health Program is a collaborative project between Centre for Applied Nursing Research and Oral Health Service. The program involves training midwives to provide oral health education/assessment and referrals during early pregnancy and offering priority dental referral pathways. It is a randomised controlled trial of 641 pregnant women recruited from three metropolitan hospitals in western and south-western Sydney.

A review has shown there is no clear consensus among dentists and prenatal care providers regarding appropriate oral health care during pregnancy. There is also limited emphasis being placed on oral health within maternity care in Australia. These issues can further deter pregnant women from seeking dental care. To address these issues researchers from the Centre for Applied Nursing Research, Sydney and South Western Sydney LHDs and the University of Western Sydney are gathering information about the current knowledge, attitude and practises of dentists and prenatal care providers (general medical practitioners, midwives and obstetricians and gynaecologists) in NSW towards oral health care during pregnancy. The information gained will inform the development of practice guidelines in perinatal oral health for all health professionals in Australia

The success of the program in improving oral health knowledge and confidence among midwives was recognised by the Victorian Premier's Office and has led to its inclusion in VIC Health's Oral Health Promotion Action Plan (2013-2017).

Preventive/Interceptive Orthodontic Research Orthodontic problems (abnormal positioning of the teeth and jaws) may affect an individual's quality of life. Some minor orthodontic problems, if intercepted in childhood or adolescence, can be prevented from becoming severe in adulthood. Currently, only severe conditions are eligible for treatment in the Public Specialist Service and there is a lack of early treatment strategies. An innovative tool is being developed as part of the project which will be a cost-effective strategy for delivering orthodontic care by public dentists who are not qualified in orthodontics. It will provide dentists' competence to monitor, diagnose, treat or refer in a timely manner.

Our Staff

The SLHD Oral Health Service values its diverse workforce, and is committed to supporting opportunities to improve workforce skills, capacity and practice models.

Public oral health services across NSW experience significant difficulties in recruiting oral health staff particularly as a result of current award structures and career pathways. These workforce issues apply to SLHD Oral Health Service, mainly in regards to the recruitment of dental specialists, not the entire oral health workforce.

For SLHD, oral health staff have one of the lowest turnover rates at 5 per cent, with approximately 20 per cent of all SLHD Oral Health Service staff having worked within the service for 15 years. Subsequently the staff have a higher median age than other staffing categories within the District, at 45 years of age.

The SLHD Oral Health Service has adopted a number of strategies to improve recruitment and retention of staff. These include:

- Active recruitment processes which highlight the important roles played by SDH as a tertiary referral centre and teaching facility committed to service excellence, evidence-based practice, with a strong research focus
- Creating pathways for young graduates through delivering the Volunteer Dental Graduate Year Program supported by the Commonwealth Government. The continued investment in the new graduate program leads to residencies across specialities, and the provision of clinical placements for postgraduate students in dentistry specialty areas
- Continued recognition of the postgraduate education, experience and peer recognition of SLHD Oral Health Service Staff through well-established approved criteria
- Providing continuing education to all staff to meet the Dental Board of Australia's requirement of compulsory continued education

The 2014/15 staff profile shows that approximately 360 FTE staff are currently employed in the SLHD OHS. In addition, staff are also employed under the National Partnership Agreement on a contractual basis.

Table 7: Staff Profile 2014/15

Staff category	Total FTE
Dental Specialists	17
Dental Officers	60
Oral Health/Dental Therapists	8
Dental Hygienists	2
Dental Prosthetists	1
Dental Assistants	147
Dental Technician	28
Nursing	10
Dietitian	0.6
Administration	42
Support Staff	41

Note: Correct as of April 2015

As a part of improving workplace culture, SLHD OHS has undertaken an inclusive consultation with all staff to develop a plan to implement CORE values across all SLHD Oral Health Services. The plan was developed and implemented in 2014. Through this process, staff identified a range of projects that would further assist in developing a positive and sustainable workplace culture. The SLHD OHS have identified executive leads and team members to progressively implement this plan.

Our Priorities

Our priorities are to:

- Continued implementation of the SLHD Oral Health Workplace Culture Improvement Strategy, including the delivery of projects developed in consultation with staff
- Support and strengthen the relationship with educational institutions that provide dental education programs. This particularly applies to the University of Sydney
- Commence SDH master planning as outlined in the SLHD Strategic Plan 2012-17
- Improve clinical and corporate productivity and efficiency of the SLHD OHS through a range of strategies, including exploration of revenue opportunities
- Develop strategies to ensure SLHD OHS readiness for implementation of the Oral Health ABF
- Explore opportunities to participate and actively build on the Medicare Child Dental Benefit Scheme (CBDS) to supplement the current State funding allocated to public dental services

Other SLHD OHS Infrastructure and major equipment priorities include:

- Planning for the expansion of the existing Community Oral Health Clinic at Concord Hospital to support the provision of a Clinic with a focus on mental health, special needs dentistry and improving access to oral health services for Concord Hospital inpatients
- Redesigning specialty units including upgrading the special support, periodontics and endodontic departments; Surgery redesign of the oral surgery's recovery area for the provision of intravenous sedation and general anaesthetic recovery; expansion of the fourth floor ceramics laboratory for increased prosthetic dental work and expansion of the Paediatric Dentistry department
- Finalising the rollout of the SCAN Ex Imaging-Photo Stimulable Phosphor Program across the Oral Health Clinical Stream
- Develop the IT capacity of the SLHD Oral Health Service including:
 - A new Information Management System capable of integrating with PAS, PAX and other health IT systems, including the eMR
 - Improved bandwidth for SDH to RPA replacing the current microwave linkage. A faster connection with higher capacity to transfer to the RPA server for data storage for CBCT, Scanner, Digital Imaging and 3-D imaging data is required
 - A high capacity data storage server at RPA for the digital data storage for oral health imaging.
 - Access to information via improved and faster Wi-Fi internet access

- Use of broader communication platforms such as Twitter, Facebook and discussion forums/bulletin boards for Oral Health Promotion
- Implementation of the relevant key components of the SLHD Information and Communication Technology Strategy 2015-2020.

Appendix One: Acronyms and Abbreviations

AMS	Aboriginal Medical Service
ASP	Asset Strategic Plan
A&E	Assessment and Emergency
BCA	Building Code Australia
CDBS	Child Dental Benefit Scheme
COHIS	Centralised Oral Health Intake and Information Services
COHCs	Community Oral Health Clinics
CRGH	Concord Repatriation General Hospital
DMD	Doctor of Dental Medicine
ECOH	Early Childhood Oral Health
EMR	Electronic Medical Record
GA	General Anaesthetic
LGA	Local Government Area
LOTE	Language(s) Other Than English
HIV	Human Immunodeficiency Virus
ISOH	Information System for Oral Health
IT	Information Technology
IV	Intravenous
OHFFSS	Oral Health Fee For Service Scheme
MoH	Ministry of Health
MIOH	Midwifery Initiated Oral Health (program)
NPA	National Partnership Agreement
OHS	Oral Health Services
PAS	Patient Administration System
PrIOR	Preventative/Interceptive Orthodontic Research
RPA	Royal Prince Alfred
SDH	Sydney Dental Hospital
SESLHD	South Eastern Sydney Local Health District
SLHD	Sydney Local Health District
SSWAHS	Sydney South West Area Health Service
SWS	South Western Sydney

VDGYP	Voluntary Dental Graduate Year Program
WOOS	Weighted Occasions Of Service
DWAU	Dental Weighted Activity Unit

Appendix Two: Glossary

Antemortem	Before death.
Atherosclerosis	The buildup of plaque inside arteries, constricting blood flow to the circulatory system. This is a significant risk factor for cardiovascular disease .
Bridges	An artificial replacement of one or more missing teeth fixed to the mouth.
Cardiovascular disease	Any disease of the circulatory system, namely the heart (cardio) or blood vessels (vascular). Includes heart attack, angina, stroke and peripheral vascular disease.
Chronic degenerative disorders	Degenerative disease is the result of a continuous process of degenerative cell changes, affecting tissues or organs will increasingly deteriorate over time, whether due to normal bodily wear or lifestyle choices such as exercise or eating habits.
Chronic medical conditions	Long term medical conditions such as cardiovascular disease , cancer and diabetes. Chronic medical conditions are commonly associated with disability.
Clinical governance	A systematic approach that aims to maintain and improve the quality of patient care provided by healthcare organisations.
Clinical performance	Involves collecting and reporting data on clinical procedures performed within a healthcare organisation to assess the quality and safety of care provided.
Crown	An artificial replacement that covers a damaged tooth to improve its structure. A crown may also be placed on top of a dental implant to replace a missing tooth.
Dental anatomy	Field of anatomy which studies the basic structure and function of the human tooth.
Dental caries	A chronic disease that causes holes (cavities) to appear in teeth. This is caused by the build-up of plaque on teeth and is a largely preventable disease.
Dental extraction	Removal of a tooth or multiple teeth.
Dental implant	An artificial tooth root placed inside a patients jaw to hold a replacement tooth in place.
Dental hygienists	Assist dentists in treating patients by providing preventative, educational and therapeutic oral healthcare to patients.
Dental therapist	Examine and treat diseases of the teeth in children and adults, under the supervision of dentists.

Dental restoration	Treatment that restores worn, decayed, damaged or missing teeth to their full function such as dental fillings or crowns.
Dentures	An artificial replacement for missing teeth and surrounding tissues that is removable.
Diagnostic imaging	The capturing of human body images for the purpose of medical diagnosis and treatment. A variety of machines and techniques can capture images such as CT scans and X-rays.
Edentulism	The loss of one or more or all teeth.
Endodontics	Branch of dentistry specialising in root canal treatment, a procedure performed to remove damaged tissue from inside the root canals of a tooth.
Exodontia	Branch of dentistry dealing with the extraction of teeth.
Family and patient centred care	The provision of healthcare services that is respectful of, and responsive to, the needs and values of patients and their families.
Forensic odontology	Branch of dentistry responsible for identifying unknown human remains and tracing bite marks to a specific individual. Also called forensic dentists.
General anaesthetic	Medication that is administered to produce a loss of consciousness among patients so they are unaware of surgery and do not respond to any stimuli, including pain.
Geriatric patients	Elderly patients with impaired function.
Gingivitis	Inflammation of the gums resulting from the build-up of plaque on teeth. Gingivitis is a form of periodontal disease .
Haematology	The study and treatment of human blood.
Histological changes	Changes in the structure of tissue.
Integrated care	The collaboration of multiple healthcare professionals in the delivery of cohesive healthcare treatment.
In-patient	Patient is formally admitted to an institution for treatment and/or care and stays for a minimum of one night in the institution such as a hospital.
Intravenous sedation	Sedating drug is injected directly into a patient's vein to relax patients during treatment.
Local anaesthetic	Medication that is administered to numb a particular area of the body during surgical procedures.
Meta-analysis	Statistical technique that combines the findings from multiple independent commonly used to assess the clinical effectiveness of healthcare interventions.
Obstructive sleep apnoea	Repeated episodes of airway obstruction during sleep, whereby the walls of the throat close and block off the upper part of the airway. This disorder is commonly associated with snoring.
Oncology	The branch of medicine that is devoted to the study and treatment of cancer.

Oral and maxillofacial surgery	Surgery dealing with diseases, deformities and injuries of the mouth, teeth face and jaws.
Oral sedation	Medication is administered orally, usually in the form of a table, to relax patients during treatment.
Oral trauma	Injury sustained to the teeth and/or surroundings areas such as the gums, lips or tongue.
Orthodontics	Branch of dentistry specialising in the correction of poor teeth and jaw alignment using devices such as braces and plates.
Outpatient	Patient attends an institution for treatment and does not stay overnight in the institution overnight such as a hospital.
Paediatric dentistry	Branch of dentistry dealing with children from birth through to adolescence. Also referred to as paedodontics.
Palliative dental treatment	Treatment that relieves pain but does not cure the illness.
Pathology	The biological discipline which studies disease.
Perinatal oral health	Refers to the oral health of women during pregnancy.
Periodontal disease	Gum disease which generally results from build-up of plaque on teeth. Common symptoms include swollen or bleeding gums and loose teeth.
Piezocision	Surgical procedure to accelerate tooth movement resulting in shorter treatment times for patients. This procedure is used in orthodontics .
Postmortem	After death.
Prenatal care providers	Provide healthcare services to a woman during pregnancy. Providers may include general practitioners, midwives, obstetricians and gynecologists.
Prosthetics	Artificial device designed to replace a missing body part such as dentures, which replace the loss of natural teeth.
Prosthodontics	Branch of dentistry concerned with the design, manufacture and fitting of artificial replacements for missing teeth and other oral structures of the mouth such as dental implants .
Quaternary	The provision of highly complex sub-specialty services. Quaternary care is considered to be an extension of tertiary care as it is even more specialised.
Radiograph	The use of X-rays to visualise the internal structures of a patient.
Special care dentistry	Branch of dentistry providing care for patients with severe chronic medical conditions , medically compromised and geriatric patients and other categories of permanent disability, such as severely physically disabled patients.
Systemic disease	A disease which affects a number of organs and tissues in the body, as opposed to

	affecting only a single organ or body part.
Tertiary	The provision of specialised consultative care for complicated or long term health problems. Tertiary care is generally provided via referral from primary or secondary healthcare physicians.
Tooth retention	The number of teeth still remaining in an individual's mouth.
Translational research	Applying research findings into the delivery of healthcare services to enhance the health and wellbeing of individuals.