



Health
Northern Sydney
Local Health District

CLINICAL SERVICES PLAN

2019-2022





Acknowledgement of Country

Northern Sydney Local Health District acknowledges the Traditional Custodians of the lands on which our health services have been built, the Gaimariagal, Guringai and Dharug peoples, and we honour and pay our respects to their ancestors.

We acknowledge and pay our respects to all Aboriginal and Torres Strait Islander peoples and to Elders past, present and emerging.

We acknowledge that past, current and future Aboriginal and Torres Strait Islander peoples are the continuing custodians of this country upon which we live, work and meet and that it is from their blood, courage, pride and dignity that we are able to continue to live, work and meet on this ancient and sacred country.

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FOREWORD

We are pleased to present the revised *Northern Sydney Local Health District Clinical Services Plan 2019-2022* which reflects the significant changes the district has undergone and the wealth of opportunities presented for our patients, our staff and the community.

The opening of the Northern Beaches Hospital in October 2018 heralded a new era of health care delivery for the residents of the Northern Beaches. With the hospital's opening came the closure of Manly Hospital and a revision of services delivered at Mona Vale Hospital, which is now a sub-acute, urgent care and community health facility. At the same time, the redevelopment of Hornsby Ku-ring-gai Hospital continues and will transform the clinical care provided to the local community.

In this context it was timely to review the former Clinical Services Plan (CSP) and ensure it reflected the changes to service delivery and continued to meet the health care needs of the community.

This revised plan identifies six strategic directions for the development of clinical services over the next three years:

- Proactively manage the increasing demand for emergency care
- Improve the health and care of older people
- Invest in non-admitted care
- Optimise the distribution of health services
- Realise the benefits of capital investments
- Develop a platform for innovation and knowledge.

These strategic directions will underpin the CSP, which identifies a number of clear challenges for the local health district and suggests specific tasks for our clinical networks, individual hospitals, clinical directorates and services as well as the NSLHD Clinical Council and the district executive.

This plan has been developed with input from a wide range of stakeholders, including clinicians, service directors, hospital managers, consumers, carers, service partners and organisational leaders. The plan is also informed by and will support NSLHD's commitment to the training and education of our workforce and our research endeavours.

The CSP is forward-looking and lays the foundations for future proofing health care while meeting the growing demand for health services. It will be reviewed again in 2022, by which time new services will be opened at Hornsby Ku-ring-gai Hospital, the reconfiguration of Mona Vale Hospital to include palliative and aged care and planning for the redevelopment of Ryde Hospital will have progressed.

We commend this plan to all staff and to the Northern Sydney community as we continue to improve the quality of care into the future.



Deborah Willcox
Chief Executive



Stephen Nolan
Chair, NSLHD Clinical Council

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EXECUTIVE SUMMARY

1.1 Introduction

This Clinical Services Plan (CSP) 2019-2022 outlines the major challenges and details the priorities, strategic directions and recommendations for clinical services across NSLHD, individual hospitals and directorates, and clinical networks.

The *NSLHD Clinical Services Plan 2015-2022* was published in March 2015. In light of the significant changes occurring in NSLHD, in 2018 the Chief Executive requested a mid-term review of the current CSP. As consultation progressed it became clear that clinical networks were keen to develop new recommendations to take account of achievements and developments that had occurred since 2015. Hence the mid-term review resulted in a refreshed CSP, still covering the period to 2022 but with recognition of ongoing changes.

The scope of the CSP encompasses clinical services, based around the current clinical networks, hospital and community health services and clinical support services including medical imaging, pharmacy, allied health, Aboriginal health and carers support. Health promotion and public health were not included in the scope.

Preparation for the transition of services from Manly and Mona Vale Hospitals to the new Northern Beaches Hospital occurred in parallel to the planning for the new CSP under separate governance processes; specific directions and recommendations have not been included for the Northern Beaches Hospital although where appropriate clinical networks have highlighted selected areas where close collaboration and inclusion in the integrated network of NSLHD hospitals will enhance service delivery.

The focus of the CSP, as previously, is on strategic directions to guide service development. It does not focus on operational matters or include details on implementation. Directions and recommendations will be prioritised and scheduled over the life of the plan and detailed plans and associated resources will be identified to support implementation.

The CSP is set out in distinct sections:

- › Chapters 1-5 provide context for the planning and provision of clinical services over the coming three years; specifically it includes chapters that:
 - › Detail the geographic, demographic and health status profiles of NSLHD.
 - › Describe trends in health service utilisation including ED, acute and sub-acute admitted, and non-admitted health care.
 - › Explore the drivers and factors that influence how health services are provided and developed.
 - › Summarise progress and the achievements of clinical networks since the last CSP was launched in 2015.
- › Chapter 6 sets out the strategic directions for the development of NSLHD clinical services under six themes:
 - › Proactively manage the increasing demand for emergency care.
 - › Improve the health and care of older people.
 - › Invest in non-admitted care.
 - › Optimise the distribution of health services.
 - › Realise the benefits of capital investments.
 - › Develop a platform for innovation and knowledge.

- › Chapters 7-30 describe the services encompassed by the ten clinical networks along with issues, challenges and opportunities for the design, development and delivery of care over the next three years. Strategic directions are set out in the form of recommendations for each clinical network.
- › Chapters 31-56 describe the hospitals and health services, their issues, challenges and opportunities, and the priorities that they will need to focus on over the next three years.
- › Appendices provide high level information and data on role delineation, current and future bed and resource profiles for hospitals, and acute admitted activity as well as a glossary of terms and abbreviations, an index of figures and tables, a bibliography, and a copy of the Aboriginal Health Impact Statement.

This executive summary provides a brief outline of the key issues, information, directions and recommendations from each of the distinct sections and chapters of the CSP along with some additional information on how it was developed and how it will be implemented.

1.2 Planning Context

Local health districts have a responsibility to effectively plan services over the short and long-term to enable service delivery that is responsive to the health needs of its defined population. For a number of clinical services in NSLHD the catchment population extends beyond the geographic borders.

Generally, local health districts are responsible for ensuring that relevant government health policy goals are achieved through the planning and funding of the range of health services which best meet the needs of their communities (whether those services are provided locally, by other local health districts, specialty networks or other service providers).

Under the [Health Services Act 1997](#) and the [NSW Health Corporate Governance and Accountability Compendium](#), Boards have the function of ensuring that strategic plans are developed to guide the delivery of services. Boards must ensure that the views of providers and consumers of health services, and other members of the public served by the LHD, are sought in relation to the organisation's policies and plans. NSLHD and its Board have responsibility for developing the following organisational plans:

- › Strategic Plan
- › Clinical Services Plan
- › Corporate Governance Plan
- › Asset Strategic Plan
- › Aboriginal Health Action Plan

Linked to the Strategic Plan are plans for safety and quality, information management and technology, research and teaching, and workforce plans. Other plans may be required from time-to-time, and include local clinical service or operational/business plans, quality improvement plans, financial plans and plans for particular population groups, health needs or issues. Enabling and support service plans provide the organisational foundation for clinical services planning.

This CSP incorporates the priorities set out in the *NSLHD Strategic Plan (2017-2022)* and other priorities established by the Board including an enhanced focus on value-based care, commitments to continuous improvement in health care quality, consumer engagement, research, teaching, training and education. The LHD is also committed to the delivery of health services that are environmentally sustainable, that is delivering high quality care and improvements in health status of residents without exhausting natural resources or causing ecological damage. All further plans within the LHD for clinical networks and specific clinical and community health services must be consistent with the CSP.

This CSP is also consistent with the directions of the *NSW State Health Plan: Towards 2021, NSW: Making it Happen*, the *NSW Health Strategic Priorities 2019/20* and the 14 new NSW Premier's Priorities. Together, these strategies and priorities provide direction for the annual NSLHD Performance Agreement with the NSW Ministry of Health.

NSLHD Strategic Plan 2017-2022

The [NSLHD Strategic Plan 2017-2022](#) was launched in July 2017 and outlines enterprise-wide strategic directions based around five themes:

- › Healthy communities
- › Connected person-centred care
- › Evidence-based decision making
- › Responsive and adaptable organisation
- › Engaged and empowered workforce

The Strategic Plan provides an overarching strategy to guide clinical service and other plans in areas such as workforce and culture, education and training and capital development. The development of this Clinical Services Plan took into account the key directions in the Strategic Plan, with many of the clinical recommendations falling into the themes of connected person-centred care and healthy communities.

NSW Health Strategic Priorities

The [NSW State Health Plan: Towards 2021 - Making it Happen](#), and the [NSW Health Strategic Priorities 2019/20](#) focus on keeping people healthy, providing world class clinical care where patient safety is first, and integrating systems to deliver truly connected care. Other priorities focus on developing the workforce, harnessing research and innovation, enabling information and data analytics, delivering infrastructure, and building financial sustainability. A number of priorities have been selected for more intensive oversight (the Secretary's Priorities), including:

- Patient safety and experience
- Value-based health care
- Systems integration
- Digital health and analytics
- Strengthening governance and accountability

Specifically LHDs are required to focus on:

- Value-based health care and its direct link with patient experience - Central to the move from 'volume' to 'value', is how as a health system we will sustainably deliver the outcomes that matter to patients by improving how we organise and provide care. The strategies linked to value-based health care will ensure the system responds to current and future challenges such as new technologies, and the changing needs and expectations of patients, carers, clinicians and communities.
- Systems integration, particularly health care in the community - Delivering health services, including specialist care and post-acute care, in the community is central to the health system of the future. Integrating systems and delivering more care in community settings will be supported by different models of capital investment, partnerships with other health care sectors including the Sydney North Primary Health Network and private providers, working with patients and consumers to co-design new models of care, investing in health technologies, research and evaluation, and building capability in data and analytics.

Premier's Priorities

Fourteen new [NSW Premier's Priorities](#) were released in June 2019. These new social priorities tackle tough community challenges, aiming to lift the quality of life for all citizens and put people at the heart of everything the NSW Government does. Specific priorities for the health system include:

- Improving service levels in hospitals – focusing on the achievement of higher treatment time targets for the most critical triage categories (100 per cent of triage 1, 95 per cent of triage 2 and 85 per cent of triage 3 patients commencing treatment on time in ED by 2023).
- Improving outpatient and community care – reducing preventable hospital visits by 5 per cent by 2023 by caring for people in the community. This may include people attending ED with potentially preventable hospitalisations, or people who could have their treatment managed in a primary care setting.
- Towards zero suicides – reducing the rate of suicide deaths by 20 per cent by 2023.

NSLHD Service Agreement

The [NSLHD Annual Service Agreement 2019-2020](#) with the Secretary of NSW Health, in the context of legislative requirements and the [National Agreement on Hospital Funding and Health Reform](#) under the Council of Australian Governments (COAG). The service agreement outlines networking arrangements with other LHDs, budget allocations and volumes of service to be purchased, along with key performance indicators in a range of clinical and quality areas. Value-based health care, under the [Leading Better Value Care](#) program is highlighted as a strategic deliverable in the 2019/20 service agreement.

Planning was undertaken in the context of a number of major developments in NSLHD. These included, among others:

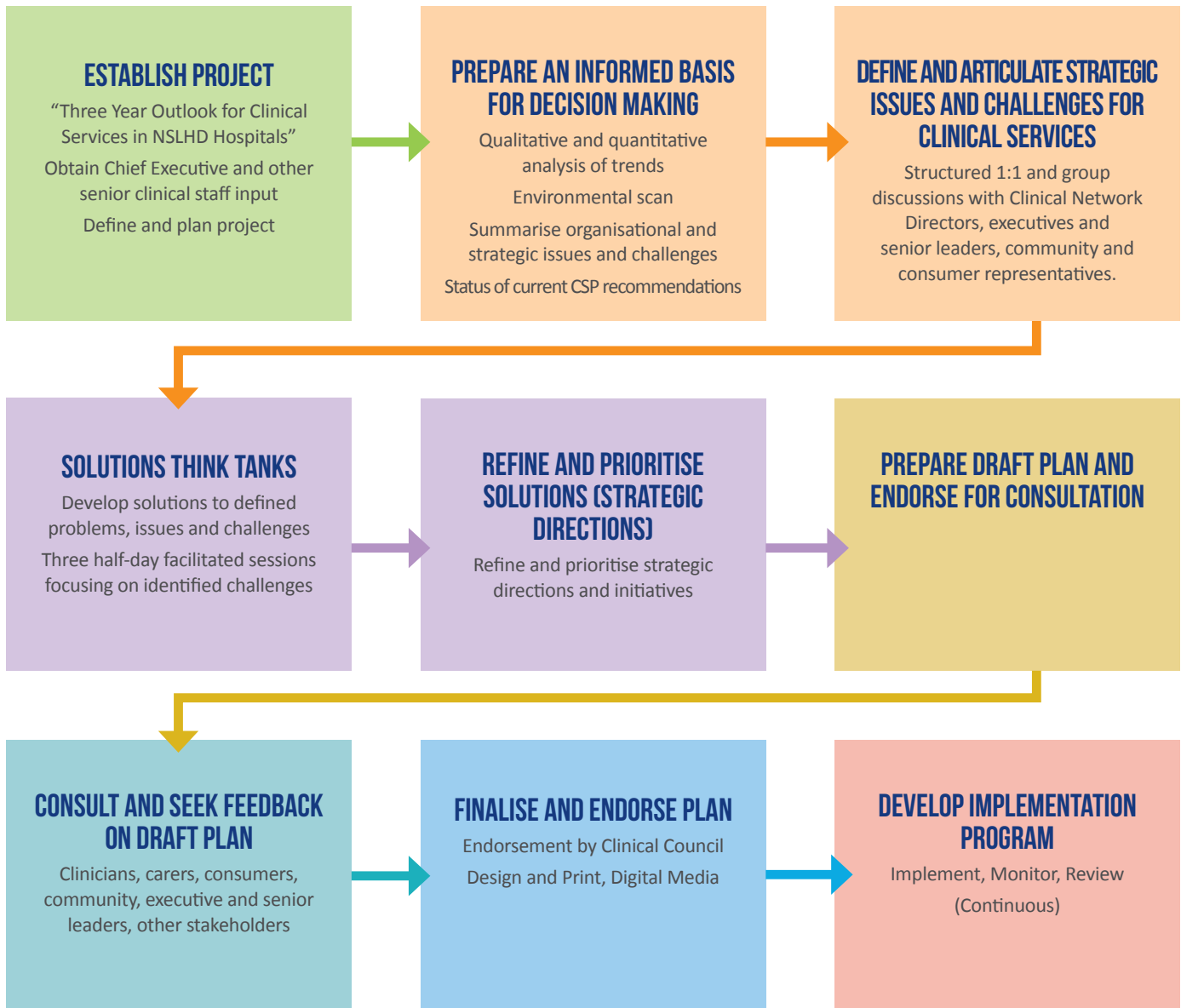
- The opening of the Northern Beaches Hospital on 31 October 2018, along with the closure of Manly Hospital and transfer of acute services from Mona Vale Hospital.
- Redevelopment of community health centres for the Northern Beaches and reconfiguration of the Mona Vale Hospital campus.
- Planning for the stage 2 redevelopment of Hornsby Hospital.
- Plans for a private medical centre on the RNS Hospital campus.

1.3 How the plan was developed

The CSP was developed by the Health Services Planning Unit with the support of the NSLHD Executive and Clinical Council. Planning commenced in early 2018 and was completed in mid-2019. Its development was informed by extensive consultation with our patients

and community representatives, our senior clinical staff and service managers, our primary care partners, and our neighbouring health services. Staging of the development process is shown in Figure 1.

Figure 1: Staged development of the NSLHD Clinical Services Plan



Stages included the following:

- A project management plan was prepared at the outset and endorsed by the NSLHD Executive and Clinical Council. All-staff newsletters and CE memos raised awareness of the project and encouraged staff to participate in the process through the clinical networks and hospital and service executive

teams. An intranet web page was developed to facilitate regular communications with staff and to make available background papers and early drafts of the plan for review and feedback.

- › Background papers were prepared on demography, historical and projected activity, facility profiles, the impact of the Northern Beaches Hospital, role delineation, progress on the current CSP recommendations and service drivers. These papers were made available through the CSP intranet web page with the opportunity for comment.
- › Structured one-on-one meetings and group discussions were held with Clinical Network Directors and the executive teams of each of the NSLHD hospitals and directorates. Consultation with consumers and patient representatives occurred through the District Consumer Advisory Council.
- › Think Tank sessions were held to consider three major themes that emerged from earlier discussions and background papers: unplanned (emergency) care; the care of older people; and non-admitted care. These think tanks involved clinicians, consumers and service managers as well as key service delivery partners from affiliated health organisations and the Sydney North Primary Health Network. A report on each Think Tank was provided to participants and made available to all staff through the CSP intranet web page.
- › Consultations with clinical networks were undertaken to review progress on recommendations and to identify revised recommendations through to 2022. These consultations were extensive and frequently involved discussions with individual departments and services at each hospital and associated services. Similarly senior executives were consulted to review key directions and to identify particular recommendations at hospital and directorate level. Consultation meetings also occurred with the NSLHD Clinical Council and the District Consumer Advisory Council, along with individual executive and LHD-wide governance bodies.
- › A draft CSP was prepared and provided to the NSLHD Executive and Board, hospital and directorate executive teams and Clinical Network Directors for comment and endorsement before being prepared for printing.

An Aboriginal Health Impact Statement was submitted to and approved by the NSLHD Aboriginal Health Unit to indicate that the process and document fairly took into account issues relating to Aboriginal and Torres Strait Islander residents and service users.

Planning Principles

Planning principles were endorsed as part of clinical services planning in 2015 and were used again in the development of clinical network recommendations for this CSP. The intention of the principles is to provide a valid reference point for reviewing planning decisions or service provision options. The following principles are principles of planning, not of care provision:

- › Health care resources will be used to maximise the health and wellbeing of the community and to reduce inequities in health and health outcomes, particularly for vulnerable or underserved populations.
- › Planning decisions will be based on evidence of need, effectiveness and value for money, and will be consistent with government policies, directions and agreed clinical standards.
- › Services will be organised around the needs of the patient and delivered in the most appropriate setting (acute, sub-acute, community, home-based) and by the most appropriate provider while maintaining the highest quality of care.
- › Given finite financial and staff resources, services will be organised across the LHD to maximise quality of care and local access, that is high quality secondary level services, where appropriate, will be provided in local hospitals and RNS Hospital will be supported to further develop and deliver tertiary and complex services.
- › Integration and partnerships between providers will be encouraged and supported where this contributes to improved patient care and outcomes.
- › Our communities and clinicians will be informed and involved in the development, delivery and evaluation of services.

1.4 How the plan will be implemented

This CSP has been developed over an extended period of time, recognising the challenges of planning services in a large and complex organisation. It is the result of the collective and considerable efforts of many clinicians, consumers, managers and others who acknowledge the need for services to evolve and improve over time.

The plan identifies the priorities and strategic directions in response to the identified issues, challenges and opportunities for individual clinical services and for NSLHD as a whole. Many of the directions and recommendations deal with “wicked problems” that cross boundaries between NSLHD hospitals/directorates and providers in primary and community settings, and have implications for key stakeholders in addition to teaching and research.

The challenges of implementing the strategic directions of this plan cannot be underestimated. In a number of instances there have been previous efforts to effect change with limited success; however, it is worthwhile tackling these issues again where it will improve the safety and quality of services, enhance patient outcomes and experiences of care, or where it could provide opportunities for better training and education experiences or high impact research. The CSP sets out an ambitious set of directions and recommendations. While much can be achieved in the plan’s timeframe to 2022 it is likely that some things will take longer to resolve and embed as standard practice.

The CSP sets out the general direction of desirable changes, particularly in the organisation and distribution of health care across the integrated network of NSLHD hospitals and services. It does not, however, provide a detailed recipe to achieve or deliver these major changes. First steps in implementation will include:

- Detailed examination of the problem and identification of all relevant stakeholders and perspectives.
- Evaluation of a range of options for resolution through various lenses including patient experience, patient outcome, clinical outcome, safety, quality, value, impact on teaching, training, education and research, etc.
- Prioritisation of activities, recognising that not everything can be tackled simultaneously, that some things will necessarily precede others, or that some things might benefit from being delayed for a period of time.
- Development of implementation plans that fully scope the project, identify resources and supports required, confirm dependencies and barriers, determine how success will be measured and reported, and anticipated timeframes.

Many of the directions and recommendations of the CSP seek to address the increasing demand for health care in NSLHD. However, the planning and delivery of services over the coming years will occur in the context of a constrained NSW state budget associated with reduced revenue from, among other things, falling stamp duties and GST receipts. Consequently NSLHD will need to allocate and spend its financial resources wisely. This will necessarily include examining service developments as well as investment and disinvestment decisions not just in terms of patient outcomes and experiences but also in terms of its contribution to medium to long-term financial sustainability.

It is noted that there are already a number of efforts in train to further consider opportunities for improving surgical services, reviewing outpatient services at RNS Hospital, and the redevelopment of Ryde Hospital. There is also considerable and ongoing activity in numerous other directions and recommendations but in many instances this activity is not necessarily well coordinated around a common strategic outcome; local solutions sometimes result in non-standard care, variations in access and equity between sectors, duplication or gaps in services, and limitations on scalability of solutions. Considerable benefits could accrue through a more coordinated approach across NSLHD.

Implementation will occur within the context of existing organisational and governance structures, including the local and NSLHD clinical councils and the executive teams of each hospital and directorate, along with the ten clinical networks. Further consideration will need to be given to arrangements that will support and coordinate developments across multiple hospitals or services simultaneously. Consideration will also need to be given to the monitoring and reporting of progress (and celebrating milestones and achievements) so that we remain on track to deliver the improvements that are required for sustainable health services into the future.



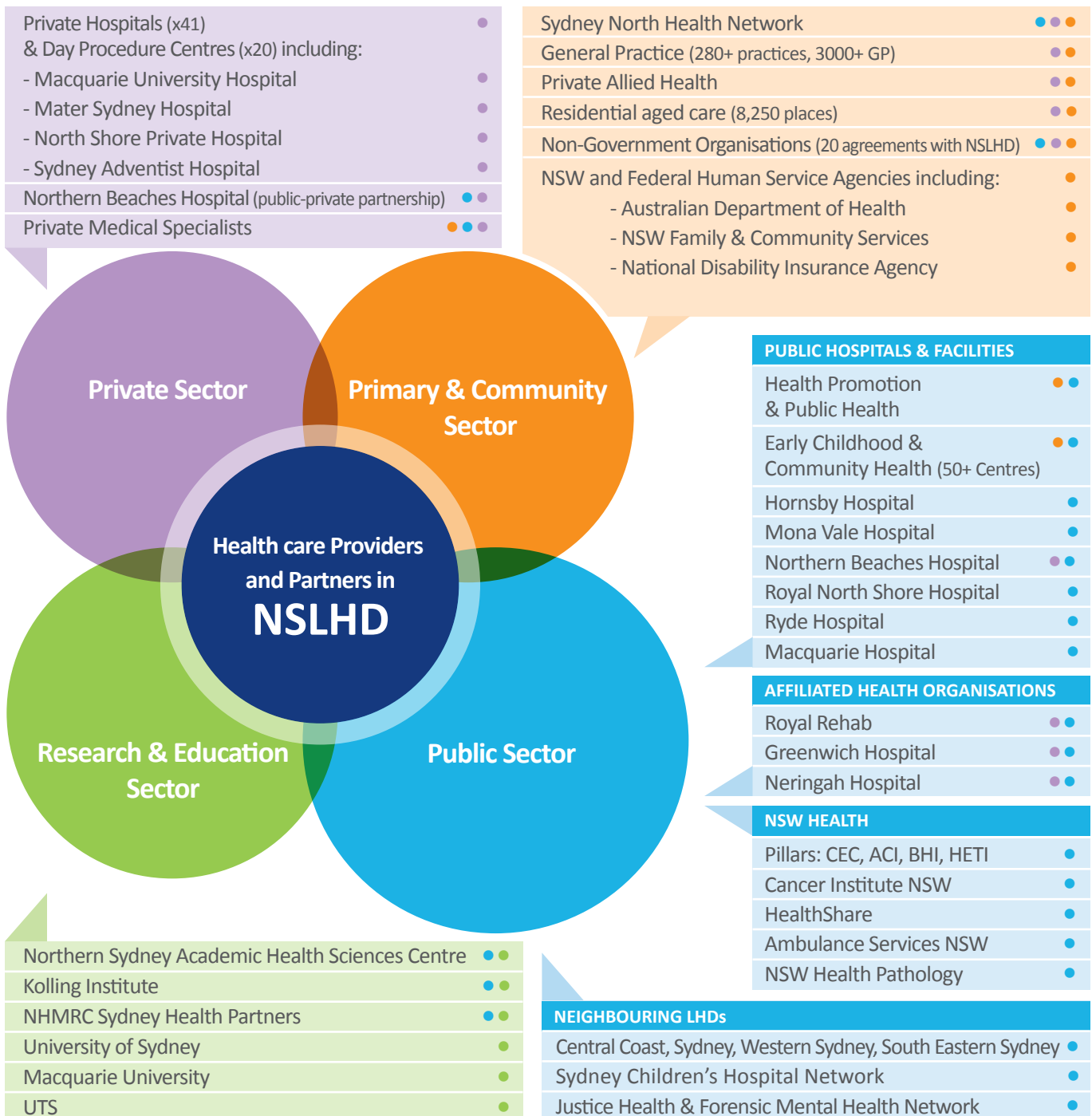
1.5 Clinical Organisation and Structure

NSLHD does not provide health care in isolation; it is part of a larger health and social care landscape that encompasses primary care, private health, aged care, non-government organisations, and local state and federal government alongside the population and public

health, health promotion, and acute, sub-acute, mental health, and primary and community health services provided by NSLHD (Figure 2).

As an organisation committed to research and education, NSLHD also has strong collaborations with the royal colleges, tertiary education and research institutions including the Kolling Institute of Medical Research and the University of Sydney, UTS and Macquarie University.

Figure 2: Health Care Providers in NSLHD



Key: coloured dots next to hospital/service names indicates where it operates across more than one sector; for example private medical specialists primarily operate in the private sector (purple) but also operate in the primary and community sector (orange) and the public sector (blue); the Kolling Institute, primarily operating in the Research and Education sector (green), operates in a collaborative arrangement with the public sector (blue).

Clinical service organisation

Services are organised across:


- › Four acute hospitals including Hornsby, Northern Beaches, RNS and Ryde Hospital, and one sub-acute hospital at Mona Vale.
- › Two clinical directorates - Mental Health Drug and Alcohol, including Macquarie Hospital, and Primary and Community Health which delivers services from a network of community health centres and in people's homes.
- › Clinical and other support services, including Medical Imaging, Pharmacy and Allied Health, Aboriginal Health and Carers Support. Pathology services are provided by NSW Pathology North.
- › Two affiliated health organisations providing sub-acute care including HammondCare (Greenwich and Neringah Hospitals) and Royal Rehab.
- › Clinical Networks which advise on the strategic development of services and the profile and configuration of services across the hospitals and directorates. The NSLHD Clinical Networks include:
 - › Maternal, Neonatal and Women's Health
 - › Child, Youth and Family Health
 - › Acute and Critical Care Medicine
 - › Chronic and Complex Medicine
 - › Surgery and Anaesthesia
 - › Cardiothoracic and Vascular Health
 - › Musculoskeletal Health, Plastics/Burns, Spinal and Trauma
 - › Neurosciences
 - › Cancer and Palliative Care
 - › Rehabilitation and Aged Care

NSLHD also works with non-government organisations (NGO) delivering important community-based services that support the health and wellbeing of the public, in particular vulnerable or hard to reach populations. Services range from client advocacy through to practical support and service delivery. Selected services are provided through specific agreements for health promotion, mental health, drug and alcohol, dental, women's health, health related transport and aged and disability support. Many other NGOs also operate in the NSLHD catchment. Recognising the importance of appropriate housing and its influence on health status, it will be important for NSLHD to engage with not-for-profit community housing and other established and emerging providers in NSLHD.

Research and innovation

High impact research is conducted across NSLHD, both within the Kolling Institute of Medical Research and in NSLHD hospitals and community health centres, with input from clinicians and others across all professions, including medical, nursing and midwifery, allied health, health systems and population health. There are professorial appointments in most clinical specialty fields as well as in nursing and allied health.

Research at NSLHD is conducted in collaboration with a number of important partners, including the University of Sydney, UTS, Macquarie University, the Ministry of Health, Sydney Health Partners, the Northern Sydney Academic Health Sciences Centre, the Sydney North Primary Health Network, industry groups and various other collaborations including the new Northern Beaches Hospital.



NSLHD CONDUCTS RESEARCH IN COLLABORATION WITH THE UNIVERSITY OF SYDNEY, UTS, MACQUARIE UNIVERSITY, SYDNEY HEALTH PARTNERS, HEALTHSCOPE, THE MINISTRY OF HEALTH, AND VARIOUS INDUSTRY GROUPS.

NSLHD's flagship research institute, the Kolling Institute of Medical Research, is a joint venture between NSLHD and the University of Sydney. The Kolling Institute's vision is to become a world leading translational and innovative research centre, informing clinical care to improve patient outcomes. It aims to achieve this vision by building on its existing strengths, growing the volume and range of research undertaken and strengthening its outward and international focus. A new director has recently been appointed and the Institute is developing its own research strategy to complement the NSLHD research strategy.

1.6 Geographic and Demographic Profile

Geographic profile

NSLHD is one of 15 geographic local health districts in NSW. It covers an area of approximately 900 square kilometres. The LHD can be viewed in terms of four distinct sectors, which relate to nominal hospital catchments for each of the four NSLHD acute hospitals and their associated community health services. These are:

- Hornsby Ku-ring-gai sector: Hornsby Hospital; Hornsby and Ku-ring-gai LGAs.
- Northern Beaches sector: Northern Beaches Hospital; Northern Beaches LGA.
- Lower North Shore sector: RNS Hospital; Lane Cove, Mosman, North Sydney and Willoughby LGAs.
- Ryde Hunters Hill sector: Ryde Hospital; Ryde and Hunters Hill LGAs.

Population profile

In 2019 there were an estimated 943,908 residents in NSLHD, representing 11.7 per cent of the NSW population. The population continues to grow, driven largely by overseas migration, and by 2026 the total population will have passed one million (an annual growth rate of 1.0 per cent). Compared with NSW, NSLHD has a slightly lower proportion of children (21.9 per cent compared with 22.5 per cent) and a slightly higher proportion of elderly residents (4.8 per cent compared with 4.5 per cent). Across all of NSLHD sectors Hornsby Ku-ring-gai has both the highest proportion of children (23.7 per cent) and elderly residents (5.3 per cent). Between 2019 and 2026 Ryde Hunters Hill (13.8 per cent) is expected to be the fastest growing NSLHD sector, with growth nearly

twice the rate for the rest of NSLHD (7.6 per cent) and faster than the NSW average (9.5 per cent). Growth will be particularly strong in children aged 0-17 years.

Health needs and vulnerable populations

NSLHD residents generally experience good health with outcomes that are higher than the NSW average. Residents have the nation's highest average life expectancy and lowest premature mortality, and the highest infant and maternal health scores. NSLHD residents:

- Score better than NSW in most risk factors, such as over-weight, smoking, physical activity, and fruit and vegetable intake, with obesity being only half as prevalent in NSLHD as in NSW as a whole (although the proportion who were overweight is similar to NSW). Residents are close to the State average for risky drinking (over two standard drinks per day when consuming alcohol).
- Score well on immunisation, equalling NSW rates for children aged one year but falling below the State rate for children aged five years. Immunisation rates for Aboriginal residents were superior to those for the population as a whole.
- Were below the national participation rate for breast and bowel screening in 2014/15 and 2015/16, but above the national average participation in the cervical screening program.

NSLHD population groups that potentially have greater health care needs, that are less advantaged or more vulnerable include:

- Aboriginal and Torres Strait Islanders: this population accounted for 0.4 per cent of the population in 2016, compared with 2.8 per cent for the rest of NSW. The Aboriginal and Torres Strait Islander population grew by 962 people or 39.1 per cent between the 2011 and 2016 census to a total of 3,331. The Northern Beaches had the greatest number of Aboriginal people. The age profile of Aboriginal and Torres Strait Islander residents, when compared with the overall NSLHD population is younger (32.0 per cent are 0-17 years of age compared with 21.9 per cent) with a significantly smaller proportion aged over 65 years (6.4 per cent compared with 16.4 per cent).

- › Culturally and linguistically diverse communities: 327,643 people (37.0 per cent of the population) were born overseas, compared with 34.4 per cent in 2011. Just over a quarter of the population (227,445, 25.8 per cent) were born in non-English speaking countries, compared with 22.2 per cent in 2011. Within Ryde-Hunters Hill 39.3 per cent of residents were born in non-English speaking countries. The most common non-English speaking countries of birth were China, India, Korea and Hong Kong. 28.0 per cent of NSLHD residents speak a language other than English at home, with this figure rising to 45.0 per cent for Ryde Hunters Hill residents. While 4.3 per cent of the population in 2016 spoke English not well or not at all, this figure was 8.0 per cent in Ryde Hunters Hill.
- › Refugees: An estimated 763 NSLHD residents arrived under the Refugee and Humanitarian program between 2013 and 2017. The largest group by language were Tibetan speakers, with 409 out of 411 settling in the Northern Beaches.
- › People with disabilities: 32,824 people (3.7 per cent) reported as requiring assistance in one or more of the three core activity areas of self-care, mobility and communication. 3.9 per cent of the NSLHD population reported a profound or severe disability. For both these groups, residents of Ryde Hunters Hill recorded the greatest proportion across NSLHD.
- › Public housing residents: Ryde Hunters Hill has the greatest number and proportion of residents in public housing (1,622 or 3.5 per cent).

The Ryde Hunters Hill sector stands out as the area with highest overall population growth, greatest housing change, a high proportion of older residents, the greatest proportion of residents from non-English speaking backgrounds, a lower socioeconomic profile than the rest of NSLHD, more public housing and greatest support needs in terms of people requiring assistance and people with disability. Ryde Hunters Hill can also look forward to continued population growth at faster than the rate for the rest of NSLHD for most age groups but particularly for 0-17 year olds. While the health status of NSLHD residents is high, areas for attention include immunisation for children aged five years and cancer screening.

1.7 Trends in Activity and Service Impact

- › NSLHD Emergency Departments treated 218,267 patients in 2017/18; RNS Hospital treated nearly 41 per cent of all presentations and, with 89,365 presentations, was the busiest ED in NSW. Presentations have increased by 13.4 per cent (25,734 presentations) over the five years since 2013/14. At RNS Hospital presentations increased by almost 25 per cent (17,696 presentations), more than double the growth experienced at any other NSLHD hospital.
- › There appears to be a shift away from local hospitals towards RNS Hospital for emergency care. The increase in presentations to RNS Hospital comprised patients from all parts of NSLHD and beyond. There were over 3,300 additional Ryde Hunters Hill resident presentations at RNS Hospital (45 per cent growth) compared to 455 at Ryde Hospital (3 per cent growth); a similar trend is observed for Hornsby Ku-ring-gai residents (28 per cent increase at RNS Hospital, 10 per cent increase at Hornsby) and to a lesser extent for Northern Beaches residents (23 per cent vs 5 per cent).
- › NSLHD hospitals provided 116,704 acute hospital episodes using 398,639 bed days in 2017/18. Acute episodes grew by nearly 16 per cent over the five years to 2017/18, while bed days increased by only 7.8 per cent. RNS and Hornsby Hospitals showed the greatest proportional increase in both episodes and bed days, while Manly/Mona Vale and Ryde Hospitals showed a decrease in total bed days.
- › The increase in overnight bed day utilisation across NSLHD was the equivalent to 68 extra overnight acute beds over five years at 85 per cent occupancy. This comprised 79 extra beds at RNS Hospital and 17 extra beds at Hornsby Hospital, balanced by a reduction of 17 beds at Ryde Hospital and 12 fewer overnight beds at Manly/Mona Vale Hospitals. A significant proportion of NSLHD residents access hospital care in the private sector (57.0 per cent of all acute hospital episodes and 38.9 per cent of acute overnight episodes in 2017/18).
- › Standardised hospitalisation rates for nearly all chronic medical conditions is lower for NSLHD residents than for any other LHD in NSW, usually by a significant amount; this reflects the relative affluence of NSLHD residents and underlying better overall health status compared to other LHDs.

- › Inpatient rehabilitation episodes in public hospitals have reduced by 28 per cent over the past five years reflecting strong growth in private rehabilitation services. Inpatient palliative care activity at Greenwich and Neringah Hospitals has remained stable, possibly related to available capacity, while activity at Hornsby and Ryde Hospitals appears to have grown, reflecting the practice of type changing selected acute patients who are palliative. Maintenance care decreased at RNS Hospital but increased at Ryde and Hornsby Hospitals with an average length of stay of 10-13 days.
 - › There was an average of 28 acute beds occupied by sub-acute (rehabilitation, palliative, and maintenance) patients at RNS Hospital in 2017/18 despite it having no dedicated sub-acute unit. There were the equivalent of seven beds at RNS Hospital occupied by spinal cord injured patients who had been type changed to rehabilitation in 2017/18, a 79 per cent increase in bed days since 2013/14. This may indicate periodic difficulties in discharge of these patients from RNS Hospital to the specialist spinal cord injury rehabilitation service at Royal Rehab.
 - › In 2017/18 there were 1.1 million non-admitted service events, with 48 per cent reported through RNS Hospital; this is equivalent to over 3,000 service events per day. These service events include procedures (peritoneal and home haemodialysis, radiation oncology, chemotherapy and some endoscopies), medical consultations, diagnostic services and allied health and nursing interventions. Allied health and nursing clinics or services accounted for 59 per cent of all service events. Not all services are reported through the non-admitted data system and services vary enormously in volume and frequency: In 2017/18 there were 732 clinics reporting between one and 33,563 service events. Half of all service events were accounted for by 49 clinics while 202 clinics reported fewer than 100 service events.
- Using observed trends over the past five years, the following observations can be made:
- › At the current rate of growth of 3.2 per cent per annum (which is more than twice the underlying rate of population growth), by 2022 emergency department activity across NSLHD will have increased by the equivalent of another Ryde Hospital emergency department and RNS Hospital will have exceeded 100,000 presentations per annum.
 - › On current trends by 2022, there is likely to be more than 16,000 additional acute medical and surgical admissions requiring approximately 55 beds. The district as a whole will have just enough built capacity to accommodate this growth. However, the current distribution of workload across hospitals would result in RNS Hospital's existing congestion becoming critical. The need to both address the rate of growth in activity and the distribution of workload across facilities is a high priority.
 - › With a total of 45 operating theatres, 10 endoscopy rooms and 96 intensive care beds there is sufficient built capacity across NSLHD to accommodate anticipated growth in demand for several years to come with commensurate step-change increases in resources and redistribution of appropriate acute services from RNS Hospital to Hornsby, Northern Beaches and Ryde Hospitals.
 - › Beyond 2022, additional built inpatient capacity will be required and Ryde Hospital redevelopment represents the next major opportunity. Over the longer term additional capacity will also be required at RNS Hospital but this can only be assessed intelligently once changes in service distribution and implementation of new models of care to reduce inpatient demand or provide alternatives to inpatient care have been successfully implemented.
 - › NSLHD is subject to the health of the private health care market with any changes potentially resulting in rapid shifts of activity into the public system and placing pressure on both infrastructure and costs. Services most likely to be affected by significant changes in the private health care market include elective surgery, maternity, renal dialysis, rehabilitation and mental health.
 - › The future rate of growth in inpatient sub-acute activity is likely to be influenced as much by supply in the private health care market for rehabilitation as by changes to existing models of care.
 - › New inpatient palliative care capacity at Mona Vale Hospital is likely to result in palliative care growth for the district, as palliative care activity has been constrained within its current capacity for a number of years.
 - › There is likely to be an excess of built capacity in sub-acute beds across the district in the short to medium term. This may present an opportunity to use this spare capacity to address existing patient flow issues in the acute setting where it is reported that there are many patients no longer requiring acute care but whose progress is delayed waiting for suitable care elsewhere.

1.8 Service Drivers

Over the last decade there have been multiple external and internal service drivers affecting the provision of health services in NSLHD and the health system more broadly.

- The population of NSLHD is growing and ageing; at the same time the population is increasingly diverse with a notable growth in residents born in non-English speaking countries. This growth and change is most notable in the Ryde sector. Many people will require more health care and support as they age, and care will need to be culturally appropriate.
- While NSLHD residents have the highest average life expectancy and good health outcomes there are vulnerable communities that need special attention and tailored approaches if they are to achieve similar or equitable health outcomes. An increasing number of older people are experiencing chronic health conditions, comorbidities and frailty; at the other end of the age spectrum, a focus on care for the younger population will have lasting impacts on demand for health care later in life.
- The health workforce is also ageing; new capabilities will need to be developed to meet the needs of the growing population, respond to changes in service delivery and match future service demands.
- As the acute hospitals across NSLHD continue to be rebuilt, the challenge is to fully realise the benefits of this investment to ensure that all infrastructure is utilised to support an integrated hospital network.
- Advances in technology in areas such as robotics, imaging, genomics and “virtual care” require a well-developed strategy that strikes a balance between wise investment and innovation.
- There are increasing opportunities for collaboration with general practice through the Sydney North Primary Health Network. Benefits of collaborations include easier navigation between primary and specialist care for patients, better support for primary care providers, and potential for better management of demand for ED and hospital services.
- NSLHD residents have a very high level of private health insurance and the highest concentration of private hospital beds in NSW. This brings great benefits to patients with greater choice in health care provider. NSLHD is mindful that changes in the private health care market could potentially result in rapid shifts of activity into the public system placing additional pressure on both infrastructure and costs.
- NSLHD’s focus on translational research, innovation and new ways of working will bring more evidence-based practice to the bedside through partnerships with universities, industry and other collaborators.
- NSLHD is also concerned with improving the environmental sustainability of its services, not only through addressing waste and water management, and energy use; local efforts that focus on the design and delivery of frontline clinical services have the potential to reduce NSLHD’s environmental footprint and subsequent impact on climate change.

Major drivers for revisiting and refreshing this CSP included the sustained growth in ED presentations, continued growth in demand for hospital-based care and challenges in meeting the expectations of patients and our community with timely access to care. Much of the growth is associated with population increases and access to other care providers rather than any change in standardised hospitalisation rates. The impact of the growth in demand has been keenly experienced by RNS Hospital which regularly operates at peak capacity; currently all roads seem to lead to RNS Hospital through ED or outpatients while there is capacity and potential capabilities at other NSLHD hospitals.

SUSTAINED GROWTH IN ED PRESENTATIONS AND THE FOLLOW-ON DEMAND FOR ADMITTED HOSPITAL CARE REQUIRES INNOVATIVE MODELS OF CARE AND COLLABORATION WITH GENERAL PRACTITIONERS AND OTHER PRIMARY CARE SERVICES.

The changing social and policy environment recognises that care needs to reflect each person's choice about what services they access and how those services are provided. NSW Health is focusing on value-based health care where patients' outcomes and experiences are monitored and used to improve the service response to each patient's particular needs.

- The Leading Better Value Care Program seeks to identify and implement opportunities for delivering value-based care. NSLHD is working with the Ministry of Health to develop and implement initiatives to improve the diagnosis and treatment of specific conditions and introducing new or improved models of care for patients with common chronic diseases.
- Patient Reported Measures (PRMs) are a critical component in supporting Leading Better Value Care. Patient reported measures capture what matters to patients in their life. Patient reported measures can be broken into two groups: Patient Reported Outcome Measures (PROMs) and Patient Reported Experience Measures (PREMs). These measures will enable patients to provide direct timely feedback to their health professionals about outcomes and experiences that are important to them. It will also enable a consistent and structured method to capture and use patient reported measures in real time, and will support services to identify opportunities to improve outcomes over time.

The future sustainability of the health care system is one of the most significant challenges for both clinicians and consumers. The demand on the health system cannot be met without significant change in how services are delivered. Together these programs will help patients, carers, the community and clinicians identify initiatives that will create better value health care, optimise the use of health resources and improve the quality and safety of patient care. The strategic directions and recommendations identified by clinical networks, hospitals and services respond directly and indirectly to these challenges and changes.

1.9 Priorities, Strategic Directions and Recommendations

NSLHD's primary purpose is to deliver high quality health care that is responsive to the needs of the population. The *NSLHD Clinical Quality Improvement Framework 2016-2022* sets out a strategy to reliably deliver the best possible clinical care that is person centred, safe, effective, appropriate, efficient, timely and equitable. Based on comments and community feedback through the NSW Patient Survey and local community forums, our patients define quality health care as one that provides "compassionate and respectful person-centred care in a clean environment and in partnership with them as an informed and contributing team member". Clinicians' vision for high quality care often focuses on delivering care sustainably and with good outcomes for every patient, every time, while organisationally, high quality care is often described as "the right care, at the right time, delivered by the right people, in the right place".

Clinicians and patients further define elements of good care:

- Participative— patients are at the centre of care, are active contributors as well as receivers of care, co-design care with their treating team, and co-design care systems.
- Joined up— care is delivered by a team of clinicians than can span multiple clinical disciplines and services provided by NSLHD or affiliated health organisations, and extends to providers in primary and community settings; good clinical outcomes and patient outcomes and experiences are dependent on excellent communications between services, and, where possible or appropriate, the integration of services.
- As close to home as possible – development of high quality care and services at local hospitals will give patients confidence to access care locally rather than having to travel some distance to access routine care at RNS Hospital.

- › Informed by evidence – including through the translation of research into practice, the application of best practice guidelines, and continuous evaluation of services with insights from data analytics and a deep understanding of health needs and options for service delivery.
- › Evaluated and improved in partnership with consumers – with a particular emphasis on developing better understanding of patients’ perspectives on outcomes that are important to them and their experience of care.

Strategic directions and recommendations for services have been developed with reference to these constructs of high quality care.

Strategic Directions for NSLHD

During consultations with consumers, clinical networks and NSLHD and hospital/service executive teams a number of major themes emerged, three of which led to the Think Tanks for emergency (unplanned) care, the health of older people and non-admitted care. These themes have resulted in the identification of six priority areas that will underpin many of the Clinical Network recommendations and the strategic directions for hospitals and services:

Proactively manage the increasing demand for emergency care:

1. Reducing preventable ED presentations and hospital admissions.
2. Distributing unplanned workload across the NSLHD hospital network.
3. Developing alternatives to ED presentation or hospital admission.
4. Improving the flow of patients who present to emergency departments.

Improve the health and care of older people:

1. Improving the care of older people who require hospital-type care.
2. Supporting residential aged care facilities to meet the health needs of residents.
3. Early identification and coordinated support for patients living at home, when needed.
4. Improved integration and patient focus of care systems for older people.

Invest in non-admitted care:

1. Designing a contemporary non-admitted care system.
2. Developing non-admitted services that can reduce the need for ED presentations.
3. Developing non-admitted services as a substitute for hospital admission.

Optimise the distribution of services:

1. Reducing the non-tertiary activity load at RNS Hospital that could be appropriately provided at Hornsby, Northern Beaches and Ryde Hospitals.
2. Considering the development of appropriate non-admitted services that will support the redistribution, informed by the district-wide review of non-admitted care.

Realise the benefits of capital investments:

1. Making better use of the new capacity and capabilities of the stage 1 and 2 redevelopment of Hornsby Hospital.
2. Supporting the new Northern Beaches Hospital to progressively scale up clinical services and maximise the benefits of the new major hospital for the local population.
3. Developing new palliative care and geriatric evaluation and management services, and scaling urgent care and rehabilitation services to meet demand at Mona Vale Hospital.
4. Planning for the redevelopment of Ryde Hospital with an eye to the future and a clearly defined role in the NSLHD integrated hospital network.
5. Planning for the redevelopment of community health centres in Hornsby and Ryde Hunters Hill.
6. Preparing and positioning for the future expansion of tertiary and supra-LHD services at RNS Hospital.



Develop a platform for innovation and knowledge:

1. Building on the Network-led operating model to develop services and effect desirable improvements and changes across NSLHD hospitals and services.
2. Improving service integration and partnerships focusing efforts on improving support for residential aged care facilities and specialist support in primary care. Priority enablers to support these approaches include the development of a comprehensive, searchable and readily updated service directory and an electronic referral tool to facilitate and streamline access to NSLHD services.
3. Defining an approach to the adoption of clinical informatics and telehealth platforms.
 - › Data analytics and informatics will combine operational and clinical data to create true clinical and business intelligence systems that will provide a sound basis for evidence-based decision making and the improvement of clinical care.
 - › NSLHD will take an enterprise approach to accelerate the development of telehealth services setting out a clear strategy and direction, with leadership and systems that will advance the design and delivery and optimisation of our virtual health capabilities.
4. Harness service innovation, research and insights from patient reported outcomes and experience measures.

Strategic Directions for Hospitals and Services

Hornsby Hospital

Hornsby-Ku-ring-gai Hospital is a major metropolitan hospital providing acute, sub-acute, mental health and community health services for the catchment population of the Hornsby and Ku-ring-gai local government areas. The hospital is undergoing a major redevelopment. Stage 1 was completed in 2015 delivering a new building for surgical and some clinical support services. Stage 2 is underway with completion expected in 2021. When completed the hospital will have a new and expanded medical imaging department, a medical assessment unit, intensive care, a coronary care and cardiac investigations unit, a transit unit, new medical wards, a refurbished and expanded emergency department, a helipad, an outpatient centre and new education and retail space. Since the approval of stage 2 additional monies have been made available for [stage 2a] services including renal dialysis, chemotherapy, oral health, allied health, GP Unit and Bungee Bidgel, as well as fit out of sub-acute (rehabilitation) wards and refurbishment of the Psychiatric Emergency Care Centre (PECC).

Hornsby Ku-ring-gai has a large number of dispersed community health centres serving the geographic catchment. Many of these centres are of poor infrastructural quality: the Hillview community health centre in Turramurra has been highlighted for replacement in another location and the Pennant Hills Community Health Centre needs to be reviewed. In addition, there are a number of community services in close proximity to or dispersed across the Hornsby Hospital campus.

To realise the full benefits of the extensive redevelopment of Hornsby Hospital further work is required to refine and develop models of care for medical, surgical and non-admitted services. There are opportunities for Hornsby Hospital to provide a more comprehensive range of high quality admitted and non-admitted acute services for children and adults – residents will have confidence that Hornsby Hospital will be able to meet most of their acute health care needs and fewer patients will need to travel to RNS Hospital to access routine, secondary level care. Patients who need tertiary level care will continue to be referred or transferred to RNS Hospital.

Hornsby Hospital will focus on:

- › Realising the benefits of the Hornsby Hospital redevelopment through best use of spare surgical and procedural capacity, and planning models of care for the medical and non-admitted components of the stage 2 and stage 2a redevelopment. This will include collaborating with RNS Hospital to effect the redistribution of secondary level services across NSLHD hospitals improving local access to routine medical and surgical care, with attention to workforce and on-call requirements. This redistribution of activity also offers opportunities for Hornsby Hospital to develop an LHD role in specific clinical services.
- › Collaborating with the relevant clinical networks to review clinical service role delineation levels in the context of population demand and the provision of care within an integrated network of hospitals across NSLHD.
- › Developing a comprehensive non-admitted strategy to guide existing services and identify and support the development of new or satellite non-admitted services which will both provide alternatives to hospital admission and reduce the need for hospital care, particularly for patients with chronic illness.

- › Identifying future infrastructure requirements and models of care for community health centres to improve client access, service quality and service integration, in collaboration with the Primary and Community Health Directorate.
- › Identifying future options for the provision of services for older people with mental health needs, including admitted, non-admitted and home-based services.

Mona Vale Hospital

Mona Vale Hospital is a sub-acute hospital providing rehabilitation and community palliative care. It also has an urgent care centre and a large community health centre. The nominal catchment for Mona Vale Hospital is the Northern Beaches (previously Manly, Pittwater and Warringah) local government area. While the majority of people accessing services live within that catchment, residents of other areas may also use the urgent care centre and specialist rehabilitation services.

The role of the Mona Vale Hospital campus has changed significantly with the transfer of acute services to the Northern Beaches Hospital and the appointment of a general manager for the sub-acute hospital and community health services that remain. Reconfiguration and further development of the Mona Vale Hospital site includes a new building to provide admitted palliative care and geriatric evaluation and management (GEM) services. There has also been significant investment in new and upgraded community health facilities at Mona Vale, Brookvale and Seaforth.

The nature of the hospital campus may change over time with opportunities for other organisations to provide complementary health services on site. Key challenges include the strengthening of relationships and clinical referral pathways from the new acute hospital especially in relation to rehabilitation, palliative care, post-acute care and community health services.

Mona Vale Hospital will focus on:

- › Consolidating its new role as a sub-acute hospital and provider of specialist rehabilitation and palliative care as well as urgent care and community health services.
- › Strengthening referral pathways with the Northern Beaches Hospital, especially in relation to rehabilitation, palliative care, post-acute care and community health services.

- › Reviewing patient experience and trends in demand for the urgent care centre to refine the service delivery model as required.
- › Working collaboratively with the Rehabilitation and Aged Care Clinical Network to define and develop the Geriatric Evaluation and Management (GEM) model of care.
- › Working collaboratively with the Cancer and Palliative Care Clinical Network to develop the new admitted palliative care service at Mona Vale Hospital as part of an integrated three-hub service model for NSLHD.

Northern Beaches Hospital

The Northern Beaches Hospital is a new major metropolitan hospital contracted by NSW Health to provide public acute health services including emergency, acute admitted and non-admitted services in maternity, paediatrics, intensive care, a broad range of medical and surgical sub-specialties, renal dialysis, and mental health services. Most services are provided at a higher role delineation level than was previously provided at Manly or Mona Vale Hospitals. Many Northern Beaches residents who were previously admitted to RNS Hospital as their closest hospital are likely to attend the new hospital. Patients with complex or tertiary needs such as major trauma, neurosurgery and cardiothoracic surgery continue to be treated at RNS Hospital.

The new hospital opened at the end of October 2018. Initial challenges of commissioning a large hospital are being progressively resolved and patients are reporting satisfaction with services received. NSLHD will continue to work collaboratively with the Northern Beaches Hospital to progressively scale up services and maximise the benefits of the new major hospital for the local population.

Annual contract negotiations offer opportunities for both Northern Beaches Hospital and NSLHD to refine and develop services to meet the health care needs of the population, based on initial modelling and trends in activity and performance in the preceding period.

NSLHD will focus on:

- › Including the Northern Beaches Hospital in the integrated network of hospitals across NSLHD.
- › Reducing the need for Northern Beaches residents to travel to RNS Hospital for services that are now provided locally.

- › Refining service linkages to provide seamless care between the Northern Beaches Hospital and sub-acute and community health services provided by NSLHD at Mona Vale, Brookvale and Seaforth.
- › Engaging Northern Beaches Hospital staff and clinical teams in the NSLHD clinical networks.
- › Refining a standardised, efficient and effective model of care for specialist geriatric outreach services for older people living in the community and in residential care in order to respond to growth in demand.

Royal North Shore Hospital

RNS Hospital is the principal referral hospital for NSLHD providing a comprehensive range of secondary, tertiary and supra-LHD services. The nominal catchment of RNS Hospital includes the local government areas of Lane Cove, Mosman, North Sydney and Willoughby, collectively referred to as Lower North Shore (LNS). As a tertiary referral hospital, RNS Hospital also provides services to patients from other local government areas in NSLHD and across the Sydney metropolitan area and NSW.

RNS Hospital has experienced sustained growth in ED presentations and acute hospital admissions for both secondary and tertiary services in recent years and regularly operates at peak capacity. The high demand is influenced by the wide range of services offered which means that RNS Hospital is “never the wrong hospital to go to” and is compounded by: models of care, particularly for unplanned medical and tertiary care (for example highly specialised investigation, treatment or hyper-acute care) which do not always identify clear pathways back to the patient’s local hospital to complete their care; the use of up to 30 acute beds for patients who have been classified as requiring rehabilitation, maintenance care or palliative care; and the absence of non-admitted consultation clinics at other NSLHD hospitals which means that patients have limited opportunities to access non-urgent care other than at RNS Hospital.

This high demand on RNS Hospital services, despite considerable and continued improvement efforts over recent years, has had several impacts including: variation in waiting times for ED and to access some non-urgent elective care and other non-admitted services, reduced capacity to respond to seasonal or unanticipated fluctuations in demand, limitations on the ability to grow and expand key supra-LHD and tertiary services, and cost and budget pressures related to the higher than anticipated activity.

The sustainability of clinical services at RNS Hospital requires that significant changes are made to the types of care delivered and how and where it is delivered in the integrated network of NSLHD hospitals.

RNS Hospital will focus on:

- › Supporting NSLHD hospitals as they develop high quality secondary level services for their catchment population. This will include a review of the ambulance matrix and a service by service review to identify opportunities for the re-distribution of some acute activity. It will also consider the development of innovative models of care that include step-down or repatriation pathways for patients referred for tertiary care but no longer requiring it following intervention, and a review of the comparatively large volume of sub-acute care at RNS Hospital to fully understand the profile and needs of this cohort. Consideration of the development and location of appropriate non-admitted health services to support the redistribution of admitted care informed by the district-wide review of non-admitted care.
- › Increasing the proportion of activity that is focused on delivering tertiary or specialist care not routinely delivered in other NSLHD hospitals, to ensure that the NSLHD residents continue to have access to highly specialised, low-volume, or high-cost services when they need them. This will include considering how tertiary and supra-LHD services should expand and develop to make best use of the capacity released through the redirection or reconfiguration of secondary level services. Specifically, RNS Hospital will focus on the continued development of pancreatic cancer, transplantation, interventional radiology, interventional and surgical cardiac and interventional neuroradiology services.
- › Exploring opportunities for private sector collaboration in relation to clinical support services such as medical imaging.

Ryde Hospital

Ryde Hospital is a district general hospital providing acute and general and specialist rehabilitation services. While operating theatres, some medical wards and intensive care have been refurbished and the purpose-built Graythwaite rehabilitation unit opened in 2013, Ryde Hospital is the last of NSLHD acute facilities to receive significant capital investment and its redevelopment is the top priority on the NSLHD Asset Strategic Plan. The recent government commitment of \$479 million for redevelopment presents an opportunity to deliver a “hospital of the future”, which, rather than being confined by concepts of bricks and mortar, will connect care across the integrated network of NSLHD hospitals and services and externally with GPs, primary care and other providers and service delivery partners, leveraging the benefits of the electronic medical record and other digital platforms.

Ryde Hospital must play a key role in managing secondary level activity redistributed from RNS Hospital. The upgrade of the high dependency unit to a level 4 intensive care unit will better support existing services and the development of other acute services in the future. With the planned hospital redevelopment there will be opportunity to consider further role delineation level changes commensurate with service demand and capabilities.

Ryde Hospital’s nominal catchment area includes the local government areas of Ryde and Hunters Hill (RHH) which are the fastest growing local government areas within NSLHD. There has been significant urban development across the catchment with further development underway or anticipated particularly around the Macquarie Park area. The population is expected to grow by 21.7 per cent to 163,550 by 2026 with marked growth in the oldest and youngest age groups.

Ryde Hospital will focus on:

- Building on current strengths in emergency medicine, general and orthopaedic surgery, general acute medicine including stroke, rehabilitation and non-admitted care and community health, including mental health.
- Reviewing the need for paediatric services to meet the needs of the growing population, and developing and strengthening intensive care, geriatric medicine, women’s health, and stroke care, along with associated clinical support services.

- Strengthening linkages with Hornsby and RNS Hospitals and improving the ability to obtain medical consultation advice including through the use of telehealth strategies.
- Establishing a more significant role for Ryde Hospital within NSLHD including undertaking non-tertiary work currently provided at RNS Hospital.
- Developing a clinical services profile for the medium to long-term and a staged infrastructure plan to support the major redevelopment of the hospital site incorporating acute and sub-acute admitted services, as well as options to bring together non-admitted and community health services from across the campus and surrounding area into a single purpose-built location as part of the approach to keep people well and out of hospital whenever possible.

Mental Health Drug and Alcohol Services

Mental Health acute and community services, including specialist service streams in Child and Youth Mental Health and Older People’s Mental Health, are provided at Macquarie, Hornsby, Northern Beaches, RNS and Ryde Hospitals and in community health centres across NSLHD. Services include:

- Psychiatric Emergency Care Centres (PECC) operate in three hospitals: Hornsby, RNS and Northern Beaches Hospitals. Consultation liaison psychiatry services are provided within the general hospital setting at Hornsby and RNS hospitals.
- Adult acute mental health admitted services for people aged 18 to 64 are provided at Macquarie Hospital Parkview Unit, Hornsby Hospital (including MH Intensive Care), RNS Hospital and Northern Beaches Hospital.
- Adult non-acute and very long stay admitted services (extended care and rehabilitation) are provided at Macquarie Hospital. As part of the Pathways to Community Living Initiative, planning is underway for transitioning people with very long stays into suitable community-based options.
- Specialist Acute Mental Health Services for Older People (aged 65+) currently operate at Macquarie Hospital, Greenwich Hospital and the Northern Beaches Hospital.

- › Child and Youth Mental Health Services (CYMHS) services for consumers aged up to 18 years are provided at Hornsby Hospital's acute inpatient Brolga Unit and through residential and day programs at the Coral Tree Family Service. Both are supra-LHD services. The CYMHS service is transitioning from caring for children aged 0-18 years to one that manages children and young people aged 0-24 years.
- › Community-based mental health services are provided by multidisciplinary teams based at Hornsby, Pennant Hills and Wahroonga in Hornsby Ku-ring-gai, Brookvale and Mona Vale in the Northern Beaches, at St Leonards in the Lower North Shore and from Ryde Community Mental Health Centre and Top Ryde Community Health Centre in Ryde Hunters Hill. Services include: acute care, crisis intervention, brief intervention, early psychosis intervention, assertive outreach for clients with enduring mental illness, assessment and management of behavioural and psychological symptoms of dementia, outreach/follow-up support for children with acute or complex mental illness, perinatal and infant mental health care, and mental health rehabilitation, along with peer worker advocacy, support and recovery services, and family and carer support.

The Drug and Alcohol service provides treatment for consumers with drug and/or alcohol use issues through multiple service offerings that also address medical and mental health related problems. The core business of the service is to support people to cease and/or better manage their substance use issues. Services span the continuum from primary prevention and education through non-admitted management, to admitted detoxification and rehabilitation, and ongoing management in the community setting. Services include:

- › Consultation Liaison services in acute hospitals and their EDs.
- › Admitted detoxification: The Herbert Street Clinic at RNS Hospital provides 11 detoxification beds. Under the *NSW Drug and Alcohol Treatment Act 2007* the Clinic also offers four beds as part of the Involuntary Drug and Alcohol Treatment (IDAT) Program. There is regularly a waiting list to access this admitted program.

- › Opioid Treatment Program (OTP) is provided predominately from the Herbert Street Clinic at RNS Hospital and at Brookvale Community Health Centre. The service works closely with community pharmacists and local GPs to support consumers in the community.
- › Other services include: the Magistrates Early Referral Into Treatment (MERIT) program, community counselling/psychosocial interventions (including gambling), and youth drug and alcohol counselling.

Since the development of the *NSLHD Mental Health Drug and Alcohol Service Plans*, a new [National Mental Health and Suicide Prevention Plan 2018-2022](#) (the Fifth Plan) has been released along with the [NSW Health Strategic Framework and Workforce Plan for Mental Health Services 2018-2022](#). These plans require the development and public release of joint regional mental health and suicide prevention plans. This work has already been initiated by the Sydney North Primary Health Network in collaboration with NSLHD. The joint regional plan aims to improve the outcomes and experiences for consumers and carers, will focus on prevention and early intervention, and will connect health services with areas such as disability, housing, education and employment.

The *NSLHD Mental Health Service Plan 2017-2026* notes that Macquarie Hospital is identified in the master planning for all NSW stand-alone mental health services as part of the Pathways to Community Living Initiative (PCLI) which will transition consumers with long and very long stays into the community. Following the implementation of the PCLI where appropriate, there will be an opportunity to re-align the existing capacity and to redevelop and upgrade the Macquarie Hospital site to meet future mental health service delivery needs across NSLHD.

The *NSLHD Asset Strategic Plan* identified the need for 15 dedicated older persons' mental health beds as a priority for development at Hornsby Hospital and acknowledged that the physical space and fabric of the Herbert Street Clinic is not fit for purpose for future service delivery and is unable to support contemporary models of care for drug and alcohol clients. Options are currently being considered for the Herbert Street Clinic and its redevelopment/relocation remains a priority.

Mental Health Drug and Alcohol Services will focus on:

- Addressing current and future population needs by focusing on prevention, early intervention and community-based care, responding to increased prevalence of complex clinical presentations, ensuring that the physical health needs of both mental health and drug and alcohol service consumers are effectively met, and understanding and addressing the needs of special consumer groups.
- Enhancing service capacity and capability by maintaining a contemporary and evidence-based service, optimising workforce skills and configuration to support flexible responses to service needs, aligning resources to current and future service needs, and pursuing service delivery investment opportunities as they arise.
- Developing and implementing a comprehensive partnership management framework.
- Managing transformational change effectively during a period of significant change with a number of hospital and community health centre developments, changes in the model of care for selected services, the integration of the National Disability Insurance Scheme (NDIS), and transition to activity-based funding for mental health services.
- Fostering innovation and leading practice by further enhancing research and evaluation capabilities, contributing to the international evidence base for mental health services, and leveraging development in information communication technologies across clinical and corporate settings to improve consumer outcomes.

Primary and Community Health Services

Primary and Community Health (PaCH) provides health services in people's homes, early childhood and community health centres and other community locations. Services are provided in partnership with, hospitals, GPs and other primary care providers, residential aged care facilities, independent Aboriginal health services and other providers.

Services are provided from 13 community health centres, 17 early childhood health centres (five of which are collocated with community health centres), three family care centres, and three community mental health centres. A number of community health centres have been re-provided in purpose-built facilities including Chatswood, St Leonards, Mona Vale, Dalwood, and the new centre in Brookvale which opened in 2018.

Services are organised under six broad clinical streams including: Child Youth and Family Health; Aged and Chronic Care; Home Nursing services; Oral Health; BreastScreen; and Population Health encompassing Intellectual Disability, Sexual Health, Needle and Syringe Program, Domestic Violence, and Multicultural Health Services. (Child Youth and Family Health services are detailed in a dedicated section while other services are addressed in the PaCH section of this CSP.)

Place-based approaches to community development have been instituted at a regional level to address entrenched disadvantage with a particular emphasis on out of home care, child protection and domestic violence. PaCH services are working collaboratively with Family and Community Services, Education, Local Government and other stakeholders and communities in Ryde, Dee Why, Collaroy, Hornsby and the Ivanhoe estate in Macquarie Park to improve services and support better outcomes.

PaCH Services will focus on:

- Developing a primary and community health clinical services plan encompassing the range of services provided in NSLHD.
- The Health Contact Centre will focus on incorporating the Child, Youth and Family Service, Safe and Supported At Home Program and Palliative Care Services in 2019/20.
- The Northern Sydney Home Nursing Service will focus on developing and implementing the NSLHD Integrated Chronic and Complex Care Plan, and incorporating telehealth platforms into chronic disease support and wound management services.
- The Aged Care Service will focus on developing integrated community-based models of care for older people, determining its future as a provider of selected Commonwealth-funded services, and responding to the recommendations of the Royal Commission into Aged Care Quality and Safety.

- › The Chronic Disease Service will focus on integrating services across the LHD, considering expansion of rehabilitation programs to include patients with other chronic conditions, and translating research into clinical practice.
- › The Acute Post-Acute Care/Hospital in the Home (APAC/HITH) Service will focus on developing a comprehensive plan and resource strategy to expand the capacity and capabilities of the service and increasing referrals from hospitals and primary care providers.
- › The Multicultural Health Service, in partnership with culturally and linguistically diverse (CALD) communities, local government and community service providers, will focus on implementing the *NSW Health Plan for Healthy Culturally and Linguistically Diverse Communities 2019-2023* and the *NSW Refugee Health Plan 2018-2023* (due for release at the end of 2019), improving health literacy, identifying health needs and building capacity to manage those needs.
- › The Sexual Health/HIV Service will focus on increasing service uptake in priority populations, especially young people aged 15 to 29, and streamlining client referral pathways to other relevant services for patients discharged from the sexual health/HIV service.
- › The Needle and Syringe Program will focus on increasing face-to-face client contact, and mapping and improving access to wound and vein care and hepatitis C treatment services.
- › The Intellectual Disability Assessment Service will focus on developing outreach consultative services to Northern NSW and Mid North Coast LHDs.
- › The NSLHD violence and abuse services will focus on redesigning services in line with the NSW Health Integrated Prevention and Response to Violence, Abuse and Neglect Framework.
- › BreastScreen will focus on increasing participation rates in target populations, particularly women aged 50-69 years; exploring new technologies to address emerging and current screening issues, for example tomosynthesis; increasing participation in clinical trials and research projects; and reviewing current and projected screening activity, matching target population demand and participation rates with capacity across NSLHD.

- › Oral Health will focus on developing strategies to meet the needs of the growing aged population, along with priority population groups such as patients with cancer, Aboriginal and Torres Strait Islanders, refugees and others with special needs, and increasing oral health education and promotion services.

Allied Health Services

Allied health services are provided across a range of service delivery models including: acute admitted and non-admitted care; hospital avoidance programs for acute illness; rehabilitation programs; mental health and drug and alcohol admitted care; community services; and care for consumers with complex and ongoing chronic disease. Allied Health encompasses 22 distinct disciplines the largest of which include physiotherapy, occupational therapy, nutrition and dietetics, speech pathology and social work.

Collectively the allied health disciplines are strategically led and represented on the NSLHD executive leadership team by the Director of Allied Health. Operational management of allied health staff and services is provided through the allied health departments within Hornsby, Mona Vale, RNS and Ryde Hospitals and through multidisciplinary services within the directorates of Mental Health Drug and Alcohol and Primary and Community Health.

Challenges faced by NSLHD allied health services include:

- › Providing high quality, effective and responsive services within allocated resources. Many clinical networks and services identified increased demand and gaps in provision or quantum of admitted and non-admitted allied health services, particularly where service models have changed. Associated workforce challenges include leave relief provisions, advanced and expanded roles for professional grades and increases in assistant grades.
- › Establishment of an allied health professorial position in collaboration with the University of Sydney in 2018 to support allied health clinicians to engage in clinical research. An allied health research committee has been established to guide strategic research priorities with a particular emphasis on the identified needs of health care consumers and the community.

- › An identified area for investment is the establishment of a NSLHD Chief Allied Health Informatics Officer that, together with the Chief Clinical and Nurse Informatics Officers, would provide leadership within the information and communications technology services to drive analytics that inform and improve training, decision support, clinical workflow and clinical outcomes as well as optimising clinical information system user interfaces for allied health and other care providers.

Allied Health Services will focus on:

- › Reviewing allied health requirements in ED and advising on distribution and organisation of allied health resources across all settings.
- › Developing an allied health research plan in line with the *NSLHD Research Plan* that includes the key strategic areas identified at the research capacity workshop.
- › Supporting allied health data governance, reporting and analysis across the district to drive allied health initiatives and build a responsive and adaptable workforce.

Pharmacy Services

Each of the acute hospitals and the mental health service at Macquarie Hospital has an on-site pharmacy providing a range of services depending on the hospital case mix, size and acuity. The pharmacy services operate independently, employing their own staff and managing drug formularies as approved by the individual hospital or health service Drug and Therapeutics Committees. Pharmacy services are also provided at affiliated health organisations (Royal Rehab, Greenwich and Neringah hospitals) but these operate independently and are not within the scope of this document.

Cores services include clinical pharmacy, medication safety and quality use of medicine activities, dispensing, purchasing and inventory management, and policy management through the local Drug and Therapeutic Committee. Specialist services provided by RNS Hospital include aseptic production of cytotoxic medications, extemporaneous preparations and parenteral nutrition (other hospitals purchase these products from private compounding companies), management of clinical trial drugs, and provision of specialist medicines information.

Uptake of technology in medication management is variable with automated dispensing cabinets available in Hornsby and RNS Hospitals and dispensary robots planned as part of the Hornsby Hospital redevelopment. Roll-out of the electronic medication management system is on schedule for completion by the end of 2019.

- › The provision of pharmacy services is becoming more complex: poly-pharmacy and complex drug regimens coupled with an ageing population with multiple co-morbidities means that more patients are at risk of medication misadventure.
- › The implementation of electronic systems to manage medications should ultimately improve patient safety and staff efficiency, but it is essential that there is appropriate governance over these systems to maximise benefits and minimise risks.
- › Other issues and challenges include drug shortages and recalls, legislative and industrial issues related to the classification of the professional pharmaceutical workforce and the development of pharmacy technician roles, and public patient access to the Pharmaceutical Benefits Scheme (PBS) on discharge or as non-admitted patients.

Pharmacy services will focus on:

- › Identifying, implementing and evaluating strategies to deliver a standardised and equitable pharmacy service across the LHD and harnessing opportunities to improve service efficiencies, reduce purchasing costs and invest in research and quality improvement.
- › Reviewing the transitions of care pathways for patients who are discharged from NSLHD hospitals to the community and streamline discharge processes.
- › Developing a workforce plan to support the increase in clinical pharmacy services offered within NSLHD and to make the most effective use of the skill mix within the workforce.



Medical Imaging Services

The Medical Imaging District Services provides diagnostic and interventional services under the specialties of radiology and nuclear medicine to admitted patients in NSLHD acute hospitals and non-admitted patients. Modalities include general x-ray, ultrasound, CT, MRI, fluoroscopy, image intensifier, angiography, mammography and dental imaging.

- Equipment for a number of modalities at RNS Hospital is due for replacement in 2022. The modalities showing the highest growth are CT, MRI and angiography as part of stroke services along with growth in ED demand for CT. Monitoring of demand will be required to ascertain any further requirements.
- Ryde Hospital's medical imaging service is in need of renovation and one x-ray room was replaced in April 2019. Any change to Ryde's service mix will require consideration of the impact on existing capacity and resources.
- Interventional neuroradiology demand is increasing with resultant pressure on radiology resources. To provide a consistent and timely service the Neurosciences Clinical Network is recommending that the endoscopic clot retrieval service for stroke patients service should expand to a 24/7 service.

Medical Imaging services will focus on:

- Collaborating with clinical networks and services to manage demand, improve the appropriate selection of medical imaging required for diagnosis and develop agreed pathways to improve imaging response times, cost effectiveness and sustainability for all clinical stakeholders.
- Developing, implementing and evaluating a model of care for the provision of interventional radiology services across NSLHD that addresses sustainable workforce issues, agreed growth and scope of practice.
- Exploring opportunities for private sector collaboration in relation to a positron emission tomography/magnetic resonance imaging (PET-MRI) machine on the RNS Hospital campus to improve outcomes for patients with prostate, brain and head and neck cancers along with applications in cardiology, neurology and research.
- Identifying opportunities for increased training for radiochemists and medical physicists.

Aboriginal Health Services

The Aboriginal Health Service (AHS) aims to improve the health, social and emotional wellbeing and emotional wellbeing of the Aboriginal and Torres Strait Islander community by promoting culturally safe and respectful services, providing consultative and advisory services to clinicians caring for Aboriginal and Torres Strait Islander people, delivering Respecting the Difference staff education programs, and developing cultural resources. It also focuses on strengthen the Aboriginal and Torres Strait Islander health workforce.

The AHS advocates for and supports individual patients and their families, provides health promotion activities, and supports community initiatives in collaboration with primary health and other care providers. Health services provided by the AHS include:

- Chronic care coordination and a 48-hour Clinical Nurse Consultant follow-up service (self-management and clinical advice, and referrals to other services as required) for patients discharged from NSLHD hospitals.
- Integrated Team Care for patients who have one or more chronic disease, have had frequent hospital admissions and/or ED presentations, and have difficulty accessing and coordinating the right services needed for their care. The program is commissioned by the Sydney North Primary Health Network.
- The Aboriginal Health Clinic (Bungee Bidge), a collaborative service with the GP Training Unit at Hornsby Ku-ring-gai Hospital, provides a range of clinical, chronic disease management, integrated team care, social and emotional wellbeing, mental health, dental and specialist health services to Aboriginal and Torres Strait Islander people from NSLHD and elsewhere.

Key challenges for the Aboriginal Health Service include improving the identification and accurate recording of Aboriginal and Torres Strait Islanders using NSLHD health services, improving the cultural competency of NSLHD staff, and Aboriginal and Torres Strait Islander people's satisfaction with the care they receive, and increasing the Aboriginal and Torres Strait Islander workforce in NSLHD.

The Aboriginal Health Service will focus on:

- Implementing and evaluating the impact of the *NSLHD Aboriginal and Torres Strait Islander Health Services Plan 2017-2022* and developing an Aboriginal and Torres Strait Islander workforce strategy.

Carers Support Services

A carer is anyone who cares for or supports a family member, partner or friend, who has a disability, has a medical condition (including a terminal or chronic illness), has a mental illness, or is frail and aged.

The key responsibility of the NSLHD Carer Support Service is to provide professional support to carers, including health care staff who are carers, in their interactions with the health system, and to improve the responsiveness of our health services to the needs of carers.

Established in 2004 as part of the NSW Government Carers Program, the NSLHD Carer Support Service is based within acute hospital settings and collaborates with staff and carers across acute, sub-acute, primary and community health services. The service also networks with community care organisations, local government community development officers and other key organisations to promote the recognition and support of carers.

In 2016, it was estimated that 130,000 or 14 per cent of NSLHD residents were carers with approximately 25,000 providing 24/7 care. With population growth and ageing this number will increase substantially in the coming decades.

NSLHD Carer Support Services are guided by the [NSW Carer Recognition Act \(2010\)](#), the [NSW Carers Charter \(2016\)](#) and the NSW Health strategy for the [Recognition and Support for Carers \(Key Directions\) 2018-2020](#).

The Carers Support Service recently released the [NSLHD Carer Strategy and Action Plan \(2018-2023\)](#). The Strategy encompasses the three directions of the [NSW Health Recognition and Support for Carers Plan 2018-2020](#):

- Guide employees to recognise and support carers.
- Value and engage with carers as partners in care.
- Support employees who have caring responsibilities.

The NSLHD Carers Strategy also focuses on improving services for carers, though, for example, the development of new models of care, developing pathways and communication aids to improve service navigation, strengthening carer engagement in the design of clinical services, and providing better facilities that support and improve the health and wellbeing of carers.

The Carers Support Service will focus on:

- Implementing and evaluating the *NSLHD Carer Strategy 2018-2023*.

Recommendations for Clinical Networks

Clinical Networks were initially established in NSLHD in 2008 with their role strengthened following a major review in 2014/15. Clinical Networks are responsible for determining what care should be delivered, to whom, where, how and with what expected outcome. Reporting directly to the Chief Executive, the Clinical Networks:

- Provide formal, evidence-based advice to NSLHD on the profile and configuration of clinical services including clear role delineation for individual hospitals, specifying the workload to be purchased under the activity-based management model, and determining workforce requirements for each discipline.
- Oversee the quality of care, including the analysis and reduction of unwarranted clinical variation.
- Define relevant clinical policy, standards and guidelines.
- Coordinate teaching and research in collaboration with the Northern Sydney Academic Health Sciences Centre, embedding research findings into clinical practice.
- Lead clinical service planning in their domains of interest.

Clinical Networks meet regularly with the executive teams of each of the hospitals and with representatives of the NSLHD executive and support functions to progress the recommendations of the Clinical Services Plan and support the development and improvement of services.

Recommendations, by individual clinical network and associated clinical service follow:

Maternal, Neonatal and Women's Health

- MN1** Promote and support a preventative and primary health care approach to women's health across the lifespan. This involves improved collaboration with primary care providers, and supporting women to access appropriate clinical advice, consultation and referral for lifestyle risk factors and diseases.

- MN2** Identify and respond to the impact of the new changes in health screening techniques and address the requirements to implement these changes, including demand and consultative follow up services.
- MN3** Develop consistent models of care for maternal, newborn and women’s health services across NSLHD. These will include:
- Delivering services as close to home as possible (outreach maternity services, education and support of staff) within the tiered maternity and neonatal network of Northern Sydney and Central Coast LHDs.
 - Increasing rates of breast feeding, especially for Aboriginal and Torres Strait Islander and Culturally and Linguistically Diverse (CALD) women.
 - Increasing capacity in gynaecology non-admitted care services (including Women’s Health physiotherapists, who could be first contact practitioners for women presenting with urinary incontinence and pelvic organ prolapse).
 - Improving communication and shared care with primary service partners (GPs, community services and non-government organisations) for maternal, neonatal and women’s health services.
- MN4** Develop clearly defined pathways and processes for consultation, escalation of care and/or transfer within the tiered maternal and neonatal network.
- Child, Youth and Family Health**
- CF1** Develop a comprehensive NSLHD youth health service response to address the specific and unique health needs of the vulnerable population of young people aged 12 to 24 years, including community-based multidisciplinary youth health service, adolescent/young adult admitted patient service, non-admitted and transition care services for young people with chronic illness conditions.
- CF2** Develop and implement strategies for the prevention, early intervention and management of childhood and adolescent obesity across NSLHD including consideration of obesity management clinics; support for breastfeeding; access to general paediatric, respiratory and sleep medicine, endocrinology, psychology and allied health services as well as gastroenterology and orthopaedic services.
- CF3** Meet the performance targets for the implementation of the Routine Growth Assessments of Children across NSLHD.
- CF4** Develop, implement and evaluate strategies and models of care to better respond to the increasing demand for mental health services for children and young people presenting to the ED, admitted to the paediatric ward or accessing child and family health services.
- CF5** Evaluate performance against the Out of Home Care (OOHC) Health Pathway and NSLHD performance agreement, and identify and implement strategies and consider alternative models of care, including multidisciplinary team assessments that will strengthen and consolidate business processes, clinical referral pathways, and partnerships with other service providers in providing a health care pathway for children and young people entering OOHC.
- CF6** Develop and expand Hospital in the Home and integrated paediatric non-admitted care services, including acute review clinics, to support “care for children as close to home as possible” and manage the increasing demand for acute paediatric services.
- CF7** Improve ease of access for consumers and streamline pathways to primary, secondary and tertiary child and family health services, including consideration of a single point of entry.
- CF8** Improve collaboration with other service providers to reduce the number of children starting school with identified vulnerabilities.
- CF9** Improve developmental services including developmental surveillance and partnerships with NDIS providers.
- CF10** Develop and implement plans to address the outcomes of the *NSW Paediatric Services Capability Framework* in NSLHD, in particular develop a business plan for services required for infants, children and young people at Ryde Hospital.

- CF11** Develop and implement strategies to improve identification of domestic violence and referral to services that supports the Premier's Priority.
- CF12** Develop strategies to address the impact of social media and technology on child and adolescent development, health and wellbeing including physical, emotional and mental health.
- CF13** Review current models of care for child and family health services and develop innovative models of service delivery to meet the changing needs of families in NSLHD, in particular for families and children with developmental vulnerabilities, including communication strategies to improve awareness of and advocacy for child and family health services to internal and external stakeholders, and models incorporating a multidisciplinary response.
- CF14** Explore opportunities to integrate telehealth into the care of children and families in their home or in the community.
- CF15** Implement the requirements of the NSW Health "The First 2000 Days Framework".

Acute and Critical Care Medicine

Emergency Medicine

- AC1** Improve efficiency, outcomes and patient experience in the ED with:
- Consistent early senior review and decision making.
 - Use of appropriate workforce skill mix including: scribes, surgical dressers, communication clerks, physiotherapist, social workers, IV technicians and nurse practitioners for appropriate patient cohorts.
 - Better access to Magnetic Resonance Imaging (MRI), particularly at weekends and after hours at Hornsby and Ryde Hospitals.
 - Appropriate accommodation and consistent pathways for the care of behaviourally disturbed patients.

- AC2** Expand options for the disposition from ED of non-admitted and admitted patients:
- Improve pathways for admission avoidance such as hospital in the home, and non-admitted services such as acute review, follow up, rapid access and other specialist care.
 - Work with the whole of hospital to shorten patient waiting times in ED following decision to admit. (This includes better understanding of patient flow and matching capacity to demand patterns across short stay units, wards and hospital substitution services.)
- AC3** Review the ambulance matrix in collaboration with the NSW Ambulance Service to identify opportunities to reduce the burden of non-tertiary cases at RNS Hospital and redistribute to other hospitals of the LHD.

Intensive Care

- AC4** Finalise and operationalise the provision of level 4 ICU services at Ryde Hospital.
- AC5** Develop standard operating procedures for the dynamic management of intensive care nurse staffing levels.
- AC6** Develop standard operating procedures for the management of inter-hospital intensive care patient referrals.

General and Acute Medicine

- AC7** Establish a General Medicine Academic Unit at Ryde Hospital to support the development of General Medicine and Medical Assessment Unit (MAU) services across NSLHD hospitals.

Gastroenterology

- AC8** Review the arrangements for the provision of admitted patient endoscopy services in Hornsby and Ryde Hospitals and ensure appropriate and timely cover is provided.
- AC9** Develop the gastroenterology non-admitted services offered at RNS Hospital and explore opportunities for the roll-out of satellite or dedicated clinics at Hornsby and Ryde Hospitals.
- AC10** Develop an expedited colonoscopy service for patients with positive Faecal Occult Blood Test (FOBT+) at suitable hospitals across NSLHD.

Hepatology

AC11 Develop a hepatology service delivery plan for patients with viral and non-viral liver disease.

Infectious Diseases

AC12 Review current Infectious Diseases Services and develop a district-wide integrated service delivery model.

Immunology and Allergy

AC13 Review the demand for, and provision of, non-admitted immunology and allergy services and develop a service delivery plan to meet the demand for adult and paediatric consultation and procedural services in NSLHD hospitals.

AC14 Continue and expand penicillin de-labelling to all patients who will benefit across NSLHD hospitals and services.

Dermatology

AC15 Review provision of non-admitted dermatology services and develop a service delivery plan to meet the demand for adult and paediatric consultation and procedural services in NSLHD hospitals.

AC16 Plan towards a best practice non-admitted clinic model that would include services in one geographical location with consistent staffing.

Chronic and Complex Medicine

Endocrinology and Diabetes

CC1 Effectively manage and realise the benefits of the increased uptake of insulin pumps and continuous blood glucose monitoring, as well as the use of mobile apps and new devices.

CC2 Evaluate and review the mental health diabetes clinic developed at Hornsby Hospital to determine the scalability of this service to other facilities and to enable increased access for people with metabolic issues related to the treatment of mental health disorders.

CC3 Develop better access to multidisciplinary transition services for young adults with diabetes to optimise diabetes management into adulthood.

CC4 Work in collaboration with primary care partners to:

- Increase capacity for general practice to manage people with type 2 diabetes (including developing and evaluating a strategy for primary care case conferencing with specialist services).
- Evaluate the training program for primary care nurses provided by diabetes educators and establish a sustainable strategy for ongoing support.

CC5 Maintain current telehealth and face-to-face support to remote NSW endocrinology and diabetes services and:

- Expand the utilisation of telehealth for clinical management, education and corporate use, to increase patient choice in service access and convenience.
- Explore applicability of remote monitoring for service providers to optimise patient outcomes and experiences, clinician experiences and system efficiencies.

Renal Medicine

CC6 Improve networking and governance of dialysis services across NSLHD with common clinical pathways, practices and protocols to make best use of resources and to support the flow of patients to the closest, most convenient and appropriate service. This includes vascular access, dialysis education, and support for primary care.

CC7 Develop a strategic plan to guide the staged development of additional dialysis capacity to meet anticipated demand over the next 5-10 years, including consideration of access issues for patients in sub-acute rehabilitation and workforce requirements for multidisciplinary teams.

CC8 Develop strategies to increase numbers of patients in home dialysis therapies by addressing factors that may prevent people from opting for or continuing with home treatments.

CC9 Develop a renal transplant plan to support the expected growth of services over the next 5-10 years.

CC10 Continue to monitor and evaluate the provision of conservative and palliative care for end stage renal failure patients, act on evaluation findings and ensure equitable implementation across NSLHD.

- CC11** Implement recommendations of the review of outpatient and ambulatory care services for patients with renal disease. This includes involvement in development of a CKD Health Pathway, support for the recruitment and education of nursing staff and allied health to focus on this group of patients, better access to distributed multidisciplinary services across NSLHD, and support for community and primary care clinicians.

Chronic Pain Management

- CC12** Identify gaps in pain management referral pathways across the LHD, particularly with respect to patients identified through ED and acute pain management services, and develop consistent LHD-wide strategies to improve timely access for patients.
- CC13** Improve education and clinical links between pain management services and services treating challenging patients, such as mental health and drug and alcohol, and develop appropriate care options.

Surgery and Anaesthesia

- SA1** Implement contemporary models of care including, for example, criteria-led discharge, enhanced recovery after surgery, and perioperative medicine.
- SA2** Achieve and sustain zero overdue planned surgery patients in all three clinical priority categories.
- SA3** Achieve and sustain unplanned surgery performance targets across all six clinical urgency categories.
- SA4** Improve access to regular, accurate and consistent surgical activity data to support clinical decision making, improve service delivery, and manage unwarranted clinical variation.
- SA5** Optimise the performance of each surgical specialty in the provision of appropriate, consistent, timely and equitable surgical care.
- SA6** Support the NSLHD review of the distribution of admitted patient activity to make best use of available capacity and capabilities across an integrated hospital network, and to develop sustainable and efficient services to meet future need.

Cardiothoracic and Vascular Health

Cardiology and Cardiothoracic Surgery

- CV1** Implement the new NSLHD model of care for the management of patients with heart failure and evaluate patient, clinical and organisational outcomes.
- CV2** Review cardiac rehabilitation services and develop a standardised approach to enable equity of access, service and staffing profiles at each site.
- CV3** Review the demand for cardiology and electrophysiology and other diagnostic services and develop a five-year expansion and service delivery plan.
- CV4** Review the demand for and organisation of the interventional cardiology and cardiothoracic structural heart disease programs and develop a five-year expansion and service delivery plan.
- CV5** Review advanced cardiology training and research programs across NSLHD public and private hospitals.

Respiratory Medicine

- CV6** Reduce clinical variation in chronic obstructive pulmonary disease, informed by the Leading Better Value Care initiative framework.
- CV7** Review the demand for respiratory services, including diagnostic, non-admitted, admitted, consultative and support services, and develop a five-year expansion and service delivery plan for NSLHD.

Vascular Surgery

- CV8** Establish a vascular surgery network encompassing all specialist medical, nursing and allied health staff.
- CV9** Establish reliable data collection and information sharing through a clinical and operational dashboard related to vascular surgery outcomes.
- CV10** Develop a consistent approach to vascular service provision and workforce (including the High Risk Foot Service) across the district, with consideration of a hub and spoke model.

Musculoskeletal Health, Plastics/Burns, Spinal and Trauma

- MS1** Develop service delivery and sustainable workforce models, for all services in the Network, that take into consideration the patient journey through the continuum of care (acute, rehab, community), and distribution of workload across NSLHD facilities.
- MS2** Develop an integrated Spinal Service for all spinal conditions (spinal cord injury, cancer spine, non-traumatic spinal cord injury, spinal plastics, urology, orthotics, and deformity correction).
- MS3** Agree on clear NSLHD data governance, collection and reporting systems, which are consistent with supra-LHD initiatives and supports individual services in quality review.
- MS4** Support the roll-out of Leading Better Value Care Tranche 2 initiatives relating to Musculoskeletal Health, Plastics/Burns, Spinal and Trauma Network services.
- MS5** In partnership with the Child Youth and Family Clinical Network, develop and implement strategies to address the transitional care needs of young people with chronic musculoskeletal, spinal or injury related disorders (spina bifida, spinal cord injury, juvenile arthritis, and scoliosis).

Neurosciences

- NS1** Standardise stroke models of care (spanning prevention, hyper-acute care and rehabilitation) across NSLHD, with specific roles for each NSLHD hospital.
- NS2** Expand the interventional neuroradiology service at RNS Hospital to a 24/7 service.
- NS3** Develop guidance on the selection of appropriate imaging and diagnostic tests in the ED for patients presenting with neurological/neurosurgical symptoms.
- NS4** Develop non-admitted services for investigation, management and follow up of patients presenting with headache, dizziness, epilepsy, and other general neurological conditions at non-tertiary hospitals (Hornsby and Ryde hospitals).

- NS5** Develop a model of care for Parkinson's disease and other movement disorders including demand for, access to, and provision of diagnostic and highly specialised treatment services.
- NS6** Develop a framework for the provision of neurogenetic services including genomic diagnostics and new therapeutic approaches to Parkinson's disease, mitochondrial disease, hereditary spastic paraplegia and other familial movement disorders.
- NS7** Streamline the neurosurgical patient journey from referral to post discharge follow-up.
- NS8** Develop a strategy to collect, access and use clinical data to support service delivery, monitoring and improvement in clinical care.

Cancer and Palliative Care

Cancer Care

- CP1** Develop a NSLHD Cancer Plan which sets direction for cancer services into the future.
- CP2** Review the provision of psycho-oncology services across NSLHD against documented best practice and with consumer input, and identify strategies to maximise access within resources.
- CP3** Develop an operational plan for non-admitted cancer services across NSLHD, to include a hospital-based plan for referrals, multidisciplinary team meetings, service provision, models of care and hospital governance.
- CP4** Develop and implement strategies to enhance clinical trials for NSLHD which draw on volume of clinical trials, activity, staffing and resource requirements (day therapy, ethics, pharmacy), to optimise patient benefit and participation and coordinate with private providers.
- CP5** Progress the implementation of the MOSAIQ medical oncology information system and embed it as business as usual within cancer and haematology services and promote continuous improvements for users.
- CP6** Standardise best practice care by addressing unwarranted clinical variation identified in the *Cancer Institute NSW Reporting for Better Cancer Outcomes*.

Haematology

- CP7** Identify a clinical network location for haematology and integrate governance accordingly.
- CP8** Prepare a service delivery plan for malignant haematology across NSLHD to address growth in demand, multidisciplinary team care and service integration, consistent with NSW cancer care guidelines.

Palliative Care

- CP9** Develop a palliative care clinical plan for NSLHD based on an agreed model of care across the LHD and networked with public, non-government and private sector partners. This will include an endorsed corporate and clinical governance model, formal contract management with service partners and agreed care processes.
- CP10** Prepare a palliative care operational plan that identifies annual goals for funding requirements, staffing, education and participation in clinical trials, along with other components to implement strategic directions in the clinical plan.
- CP11** Expand the Compassionate Hospitals Program to support patients who die in hospital and their families and carers, in partnership with RNS Hospital Intensive Care services, NSLHD Clinical Governance and the End of Life committees.
- CP12** Establish network guidance on the establishment and operation of the Mona Vale palliative care unit consistent with an LHD model of care and referral pathways, in partnership with Mona Vale Hospital.

Rehabilitation and Aged Care

Rehabilitation

- RA1** Standardise best practice admitted, non-admitted and home-based rehabilitation models of care across all NSLHD services, including referral guidelines, pathways and transfer processes, consistent with NSW service principles and models of care.
- RA2** Implement strategies that support access to rehabilitation for patients who require dialysis.

Aged Care

- RA3** Continue partnerships to improve the health journey for older people with complex health needs (including frailty, cognitive impairment and dementia) and their carers, consistent with NSW policy including the *Dementia Service Framework*.
- RA4** Refine and monitor a standardised, efficient and effective model of care for specialist geriatric outreach (hospital avoidance) services for older people living in the community (including residential care) across NSLHD in order to respond to growth in demand. This will include establishing a new working relationship with the Northern Beaches Hospital and managing emerging issues.
- RA5** Implement best practice principles and models of care to improve the experiences and outcomes of patients with dementia and confused hospitalised older persons across NSLHD.
- RA6** Plan for and commission a geriatric evaluation and management (GEM) unit at Mona Vale Hospital consistent with NSW models of care, monitor its contribution to broader aged care services and determine appropriateness of the model for implementation elsewhere in NSLHD.

NSLHD OPERATES AS PART OF A BROADER HEALTH AND SOCIAL CARE LANDSCAPE THAT REQUIRES APPROPRIATE LINKAGES, EFFECTIVE PARTNERSHIPS AND ROLE CLARITY TO ENSURE THAT CARE IS EQUITABLE, ACCESSIBLE AND INTEGRATED.

2

GEOGRAPHIC, POPULATION AND DEMOGRAPHIC PROFILE

2.1 Geography

Northern Sydney Local Health District (NSLHD) is one of 15 geographic local health districts in NSW. It covers an area of approximately 900 square kilometres, originally inhabited by the Gaimariagal, Guringai and Dharug peoples of the Eora Nation and ranges south from the Hawkesbury River to the northern shore of Sydney Harbour and Parramatta River as far as Ermington Point and west from the eastern seaboard to the Old Northern Road to Wisemans Ferry.

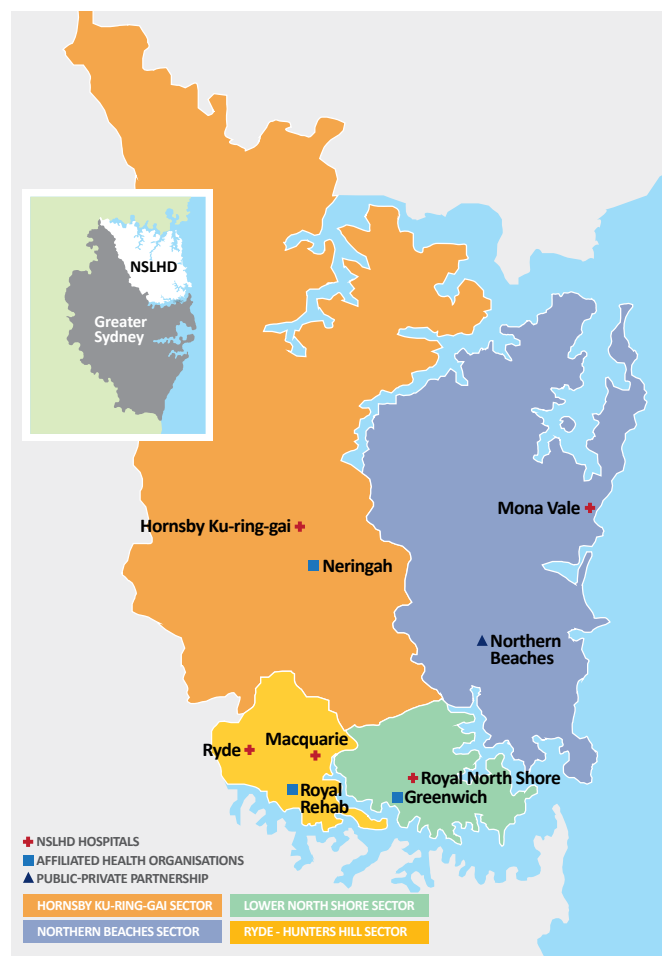
NSLHD encompasses nine Local Government Areas (LGA): Hornsby, Ku-ring-gai, Northern Beaches, Lane Cove, North Sydney, Mosman, Willoughby, Ryde, and Hunters Hill. As a result of council boundary changes in 2016 a portion of what was Hornsby LGA is now part of the new Parramatta LGA but remains in the NSLHD catchment for health services. While overall population density is 1,025 persons per square kilometre this ranges from around 330 in Hornsby LGA to over 7,000 in North Sydney LGA.

The LHD can be viewed in terms of four distinct sectors which relate to nominal hospital catchments for each of the four NSLHD acute hospitals and their associated community health services (figure 3).

These are:

- Hornsby Ku-ring-gai sector - Hornsby Hospital; Hornsby and Ku-ring-gai LGAs
- Northern Beaches sector - Northern Beaches Hospital; Northern Beaches LGA
- Lower North Shore sector - RNS Hospital; Lane Cove, Mosman, North Sydney and Willoughby LGAs
- Ryde Hunters Hill sector - Ryde Hospital; Ryde and Hunters Hill LGAs

Figure 3: NSLHD Map: Health Sectors and Public Hospitals



**900 SQUARE KILOMETRES;
9 LOCAL GOVERNMENT
AREAS**

2.2 Population Profile

The majority of the demographic data to follow is based on the most recent Census conducted by the Australian Bureau of Statistics in 2016. NSW Department of Planning and Environment (DPE) provides forecasts of estimated resident population by age and LGA based on census data and local planning information. The most recent DPE population forecast was in 2016, prior to the census.

The NSW Department of Planning and Environment, in response to the State government's objective to grow and transform Sydney, and, in collaboration with the Greater Sydney Commission, Sydney Metro and Transport for NSW, has identified a number of priority growth precincts across greater metropolitan Sydney. Within these precincts, land will be rezoned from existing low density residential or industrial to high density residential land. Four priority growth precincts have been identified within the boundaries of NSLHD, including:

- Crows Nest – St Leonards (Willoughby and North Sydney LGAs)
- Macquarie Park corridor (Ryde LGA)
- Frenchs Forest (Northern Beaches LGA)
- Ingleside (Northern Beaches LGA)

A number of major transport infrastructure projects are due for completion or substantial development by 2026. These include the Northern Beaches B-Line bus, the Sydney Metro Northwest, the NorthConnex motorway, the Beaches Link motorway and the Western Harbour Tunnel. All of these projects provide the potential to reduce travel times on parts of the transport network and hence adjust patient flows and staff access to health care facilities.

Revised population forecasts are expected to be released by DPE towards the end of 2019 and these will be reviewed to identify any potential implications for NSLHD health services.

Current and Projected Population

Current and projected population and age distribution for NSLHD are shown in Table 1. In 2019 there were an estimated 943,908 residents in NSLHD, representing 11.7 per cent of the NSW population

- 206,641 (21.9 per cent) were children under 18 years
- 343,527 (36.4 per cent) were younger working aged (18-44 years)
- 238,758 (25.3 per cent) were older working aged (45-64 years)
- 109,256 (11.6 per cent) were retirement aged (65-79 years), and
- 45,726 (4.8 per cent) were elderly (80 years and older)

Compared with NSW NSLHD has a slightly lower proportion of children (21.9 per cent compared with 22.5 per cent) and a slightly higher proportion of elderly residents (4.8 per cent compared with 4.5 per cent). Across all of NSLHD sectors Hornsby Ku-ring-gai has both the highest proportion of children (23.7 per cent) and elderly residents (5.3 per cent).

By 2026 the population of NSLHD is expected to reach 1,015,340 residents, representing an increase of 71,432 (7.6 per cent) residents at an annual growth rate of 1.0 per cent. By comparison the NSW annual growth rate is expected to be higher at 1.3 per cent per annum.

Between 2019 and 2026, Ryde Hunters Hill is expected to be the fastest growing sector. Growth (13.8 per cent) will be nearly twice the rate for the rest of NSLHD (7.6 per cent) and faster than the NSW average (9.5 per cent). Ryde Hunters Hill population growth is expected to be greater for all age groups but is strongest in children (0-17 years) where growth will be twice as rapid as any other NSLHD sector. Growth in those under 65 years (5.6 per cent) is expected to be at below average for NSLHD while residents aged over 65 years are growing at a faster rate (17.6 per cent).

Expected growth to 2026 by age group for NSLHD is as follows:

- Children – an additional 14,161 (6.9 per cent increase)
- Younger working aged – an additional 14,101 (4.1 per cent increase)
- Older working aged – an additional 15,872 (6.6 per cent increase)



943,908 residents (11.7% of the NSW population) in 2019;
OVER 1 MILLION residents by 2026 (a growth of 7.6%).

- Retirement aged – an additional 16,624 (15.2 per cent increase)
- Elderly – an additional 10,674 (23.3 per cent increase)
- All ages – an additional 71,432 (7.6 per cent increase)

In the ten years between 2026 and 2036, the population of NSLHD is projected to grow by an

additional 10.5 per cent, or 106,470 persons, reaching a total of 1,121,810. NSW will have grown by 12.2 per cent over the same time period. Over this time the population aged 80 years and older is projected to increase by 43.5 per cent, or more than four times the rate of the total population.

Table 1: NSLHD Estimated population in 2019 and 2026 Forecast by Sector and Age Group

Population 2019 - Persons						Population 2019 - Age Distribution						
Age Group	NSLHD	HK	NB	LNS	RHH	Age Group	NSLHD	HK	NB	LNS	RHH	NSW
0-17 years	206,641	73,466	61,864	42,360	28,952	0-17 years	21.9%	23.7%	23.1%	19.1%	20.2%	22.5%
18-44 years	343,527	100,388	91,216	92,982	58,940	18-44 years	36.4%	32.3%	34.1%	41.9%	41.0%	36.3%
45-64 years	238,758	83,298	69,038	53,298	33,124	45-64 years	25.3%	26.8%	25.8%	24.0%	23.1%	24.4%
65-79 years	109,256	37,058	32,148	24,670	15,380	65-79 years	11.6%	11.9%	12.0%	11.1%	10.7%	12.4%
80+ years	45,726	16,382	13,262	8,818	7,264	80+ years	4.8%	5.3%	5.0%	4.0%	5.1%	4.5%
TOTAL	943,908	310,592	267,528	222,128	143,660	TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Population 2026 - Persons						Population 2026 - Age Distribution						
Age Group	NSLHD	HK	NB	LNS	RHH	Age Group	NSLHD	HK	NB	LNS	RHH	NSW
0-17 years	220,802	79,272	62,954	44,952	33,624	0-17 years	21.7%	23.6%	22.6%	18.9%	20.6%	22.4%
18-44 years	357,628	105,168	91,616	95,738	65,106	18-44 years	35.2%	31.2%	33.0%	40.4%	39.8%	35.2%
45-64 years	254,630	88,600	71,620	57,220	37,190	45-64 years	25.1%	26.3%	25.8%	24.1%	22.7%	23.5%
65-79 years	125,880	43,260	35,600	28,110	18,910	65-79 years	12.4%	12.9%	12.8%	11.8%	11.6%	13.6%
80+ years	56,400	20,240	16,220	11,220	8,720	80+ years	5.6%	6.0%	5.8%	4.7%	5.3%	5.2%
TOTAL	1,015,340	336,540	278,010	237,240	163,550	TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Change in Population - 2019-2026 (Persons)						Change in Population - 2019-2026 (Per cent)						
Age Group	NSLHD	HK	NB	LNS	RHH	Age Group	NSLHD	HK	NB	LNS	RHH	NSW
0-17 years	14,161	5,806	1,090	2,592	4,672	0-17 years	6.9%	7.9%	1.8%	6.1%	16.1%	9.3%
18-44 years	14,101	4,780	400	2,756	6,166	18-44 years	4.1%	4.8%	0.4%	3.0%	10.5%	6.3%
45-64 years	15,872	5,302	2,582	3,922	4,066	45-64 years	6.6%	6.4%	3.7%	7.4%	12.3%	5.5%
65-79 years	16,624	6,202	3,452	3,440	3,530	65-79 years	15.2%	16.7%	10.7%	13.9%	23.0%	20.5%
80+ years	10,674	3,858	2,958	2,402	1,456	80+ years	23.3%	23.6%	22.3%	27.2%	20.0%	27.8%
TOTAL	71,432	25,948	10,482	15,112	19,890	TOTAL	7.6%	8.4%	3.9%	6.8%	13.8%	9.5%

Source: NSW Department of Planning and Environment, State and Local Government Population Projections, 2016 release

2.3 Demographic Profile

The following characteristics are noted from the 2016 census:

Socioeconomic status

The Socioeconomic Index for Areas (SEIFA) measures the level of socioeconomic advantage level of an area relative to the nation as a whole, with the national average being 1,000. In the 2016 census all Northern Sydney LGAs had

a SEIFA Index of Relative Socioeconomic Disadvantage score higher than 1,000, ranging from 1,058 for Ryde to 1,121 for Ku-ring-gai.

Indigenous Population

Aboriginal and Torres Strait Islander age profile and distribution are shown in Table 2

Table 2: NSLHD Aboriginal and Torres Strait Islander Population

Population 2016 - Persons					
Age Group	NSLHD	HK	NB	LNS	RHH
0-17 years	1,067	318	459	127	163
18-44 years	1,389	364	528	264	233
45-64 years	661	179	290	93	99
65-79 years	171	28	90	24	29
80+ years	43	16	18	-	9
TOTAL	3,331	905	1,385	508	533

Population 2016 - Age Distribution					
Age Group	NSLHD	HK	NB	LNS	RHH
0-17 years	32.0%	35.1%	33.2%	25.0%	30.6%
18-44 years	41.7%	40.3%	38.1%	52.0%	43.7%
45-64 years	19.8%	19.8%	20.9%	18.3%	18.6%
65-79 years	5.1%	3.1%	6.5%	4.7%	5.4%
80+ years	1.3%	1.8%	1.3%	-	1.7%
TOTAL	100.0%	100.0%	100.0%	100.0%	100.0%

%ATSI	0.4%	0.3%	0.5%	0.2%	0.4%
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Source: Australian Bureau of Statistics, 2016 Census

- The Aboriginal and Torres Strait Islander population accounted for 0.4 per cent (3,331) of the population in 2016, compared with 2.8 per cent for the rest of NSW.
 - The indigenous population grew by 962 people or 39.1 per cent between the 2011 and 2016 census. This may reflect an increase in the population or may relate partly to increased self-identification in the census. The Northern Beaches had the greatest number of Aboriginal and Torres Strait Islander people. Aboriginal and Torres Strait Islander patients from rural and remote areas also access services in NSLHD, mainly for specialist treatment at RNS Hospital.
 - The age profile of Aboriginal and Torres Strait Islander residents, when compared with the overall NSLHD population is younger (32.0 per cent are 0-17 years of age compared with 21.9 per cent) with a significantly smaller proportion aged over 65 years (6.4 per cent compared with 16.4 per cent).
- ### Ethnicity
- Ethnicity indicators include country of birth, language spoken at home and English proficiency. Table 3 identifies the NSLHD population born within and outside Australia while Table 4 shows the major countries of birth.
- 327,643 people (37.0 per cent of the population) were born overseas, compared with 34.4 per cent in 2011.
 - Just over a quarter of the population (227,445, 25.8 per cent) were born in non-English speaking countries, compared with 22.2 per cent in 2011.
 - Within Ryde-Hunters Hill 39.3 per cent of residents were born in non-English speaking countries.
 - The most common non-English speaking countries of birth were China, India, Korea and Hong Kong.
 - 28.0 per cent of NSLHD residents speak a language other than English at home, with this figure rising to 45.0 per cent for Ryde Hunters Hill residents (table 5).
 - The most common non-English languages spoken in Northern Sydney were Mandarin, Cantonese, Korean, Italian and Hindi (table 6). Mandarin speakers nearly doubled between 2011 and 2016 to over 56,000 residents.
 - Residents who speak a language other than English at home increased by 30.4 per cent from 191,249 in 2011 to 249,341 in 2016.

➤ While 4.3 per cent of the population in 2016 spoke English not well or not at all, this figure was 8.0 per cent in Ryde Hunters Hill. The proportion of poor English speakers rose from the previous census in all planning sectors.

➤ The NSW Department of Social Services reported 763 Northern Sydney residents who were arrivals under the Refugee and Humanitarian program between 2013 and 2017. The most numerous by language were Tibetan speakers, with 409 out of 411 in Northern Sydney settled in the Northern Beaches area.

Table 3 : NSLHD Residents by Place of Birth

Place of Birth	NSLHD	HK	NB	LNS	RHH	NSW
Born in Australia	58.0%	57.4%	65.8%	54.0%	50.6%	64.8%
Born Overseas	37.0%	39.0%	28.8%	39.6%	44.7%	28.4%
English Speaking Country	11.2%	10.2%	14.6%	12.2%	5.4%	6.4%
Non English Speaking Country	25.8%	28.7%	14.2%	27.5%	39.3%	22.0%
Not stated	4.9%	3.6%	5.3%	6.3%	4.7%	6.8%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Australian Bureau of Statistics, 2016 Census

Table 4: NSLHD Top 10 Countries of Birth - Non English Speaking

Country	NSLHD	HK	NB	LNS	RHH
China (excludes SARs and Taiwan)	51,018	20,579	3,565	11,871	15,003
India	18,981	8,602	1,828	4,310	4,241
Korea, Republic of (South)	15,081	6,637	776	3,043	4,625
Hong Kong (SAR of China)	14,493	6,436	944	4,151	2,962
Philippines	8,478	2,597	1,626	2,132	2,123
Malaysia	8,011	3,591	609	2,245	1,566
Iran	6,608	2,901	737	1,396	1,574
Italy	6,426	1,157	2,268	1,183	1,818
Japan	5,847	1,375	854	3,002	616
Germany	4,717	1,244	1,968	1,068	437

Source: Australian Bureau of Statistics, 2016 Census

Table 5: NSLHD Residents, Language Spoken at Home

Language	NSLHD	HK	NB	LNS	RHH	NSW
English	67.3%	66.8%	79.8%	65.6%	50.6%	67.4%
Other	28.0%	29.6%	15.1%	28.5%	45.0%	26.4%
Not Stated	4.7%	3.6%	5.1%	6.0%	4.4%	6.3%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: Australian Bureau of Statistics, 2016 Census

Table 6: NSLHD Residents Top 10 Languages Spoken at Home - not English

Language	NSLHD	HK	NB	LNS	RHH
Mandarin	56,327	24,295	3,304	13,555	15,173
Cantonese	33,013	14,160	1,804	8,560	8,489
Korean	17,663	8,020	834	3,292	5,517
Italian	9,781	1,722	3,396	1,791	2,872
Spanish	7,978	2,215	2,220	2,247	1,296
Hindi	7,668	3,689	486	1,748	1,745
Japanese	7,370	1,776	1,135	3,610	849
Persian (excl. Dari)	6,342	3,187	624	1,316	1,215
French	5,335	913	2,275	1,684	463
Arabic	5,243	1,879	478	779	2,107

Source: Australian Bureau of Statistics, 2016 Census

Other demographic indicators

- › Ryde Hunters Hill has the greatest number and proportion of residents in public housing (1,622 or 3.5 per cent).
- › 32,824 people (3.7 per cent) were reported as requiring assistance in one or more of the three core activity areas of self-care, mobility and communication. Ryde Hunters Hill recorded the greatest proportion at 4.8 per cent.
- › 3.9 per cent of the NSLHD population reported a profound or severe disability. Ryde Hunters Hill reported the highest proportion in all disability categories.

Health status indicators

- › Health outcomes in NSLHD are higher than the NSW average, with Northern Sydney having the nation's highest average life expectancy and lowest premature mortality, and the highest infant and maternal health scores.
- › The total fertility rate in NSLHD has gradually declined, with 1.71 live births per woman in 2006 declining to 1.65 in 2011 and 1.64 in 2016. This decline is noted for all LGAs and the rate is lower than for NSW as a whole.
- › Mortality rates have also continued to fall, with all LGAs in NSLHD having standardised death rates of between 4.9 deaths per 1,000 population in 2016 (Hunters Hill) and 3.6 (Ku-ring-gai), compared with 5.6 deaths per 1,000 population for NSW as a whole.
- › In terms of health risk factors, NSLHD scored better than NSW in most risk factors, such as overweight, smoking, physical activity and fruit and vegetable intake, with obesity being only half as prevalent in NSLHD as in NSW as a whole (although the proportion who were overweight is similar to NSW). NSLHD was close to the State average for risky drinking (over two standard drinks per day when consuming alcohol).
- › NSLHD also scored well on immunisation, equalling NSW rates for children aged one year but falling below the State rate for children aged five years. Immunisation rates for Aboriginal and Torres Strait Islander residents were superior to those of the population as a whole.
- › For cancer screening NSLHD has been below the national participation rate for breast and bowel screening in 2014/15 and 2015/16, but above the national average participation in the cervical screening program.

2.4 Summary

Since the last Clinical Services Plan was released in 2015, the population of Northern Sydney has continued to grow, driven largely by overseas migration. The total population of NSLHD will pass one million over the life of this plan, with the overall highest growth rate in residents aged over 80 years. This high growth rate for elderly residents will increase further over the following 10 years.

The Ryde Hunters Hill planning sector stands out as the area with highest overall population growth, greatest housing change, a high proportion of older residents, the greatest proportion of residents from non-English speaking backgrounds, a lower socioeconomic profile than the rest of NSLHD, more public housing and greatest support needs in terms of people requiring assistance and people with disability. Ryde Hunters Hill can also look forward to continued population growth at faster than the rate for the rest of NSLHD for most age groups but particularly for 0-17 year olds.

While the health status of NSLHD residents is high, areas for attention include immunisation and cancer screening.



BETWEEN 2019 AND 2026 RYDE HUNTERS HILL SECTOR (13.8%) IS EXPECTED TO GROW AT NEARLY DOUBLE THE RATE OF THE REST OF NSLHD (7.6%) AND FASTER THAN THE REST OF NSW (9.5%).

3

TRENDS IN ACTIVITY AND SERVICE IMPACT

3.1 Emergency Care

- NSLHD Emergency Departments treated 218,267 patients in 2017/18; RNS Hospital treated nearly 41 per cent of all presentations and, with 89,365 presentations, was the busiest ED in NSW.
- Presentations have increased by 13 per cent (25,734 presentations) over the five years since 2013/14. At RNS Hospital presentations increased by almost 25 per cent (17,696 presentations), more than double the growth experienced at any other NSLHD hospital.
- In 2017/18, ambulance (and other emergency transport) arrivals accounted for 24 per cent of presentations (compared with 26 per cent in 2013/14). Patients arriving by their own transport accounted for most of the growth in ED presentations: at Hornsby Hospital ambulance arrivals grew by 1 per cent while own transport grew by 15 per cent; at RNS Hospital ambulance arrivals grew by 10 per cent while own transport grew by 30 per cent; at Ryde Hospital ambulance arrivals actually reduced by 10 per cent while own transport increased by 11 per cent.
- There appears to be a shift away from local hospitals towards RNS Hospital for emergency care. The increase in presentations to RNS Hospital comprised patients from all parts of NSLHD and beyond. There were over 3,300 additional Ryde Hunters Hill resident presentations at RNS Hospital (45 per cent growth) compared to 455 at Ryde Hospital (3 per cent growth); a similar trend is observed for Hornsby Ku-ring-gai residents (28 per cent increase at RNS Hospital, 10 per cent increase at Hornsby) and to a lesser extent for Northern Beaches residents (23 per cent vs 5 per cent).
- When analysed by age group there is no overall pattern in the change in presentations except that the high percentage growth at RNS Hospital is strongest at the young (27 per cent growth) and older (33 per cent growth) ends of the age spectrum while at Ryde Hospital there was a 12 per cent growth in paediatric presentations. Manly and Mona Vale Hospitals also experienced higher proportional growth in older presentations while growth at Hornsby Hospital was distributed across all age groups.
- Admission rates vary by hospital and age group; on average 34 per cent of presentations to ED are admitted to inpatient care. Children are less likely to be admitted than adults or older people with an average admission rate of 13 per cent; admission rates are slightly lower than in previous years possibly related to the development of paediatric short stay units where some patients who might previously have been admitted from ED are now cared for in an ambulatory model. Almost 65 per cent of older people (aged 70 and over) presentations are admitted to hospital reflecting the often chronic or complex health needs and co-morbidities. Changes to admission rates have also been influenced by the availability of ED, Medical Assessment and other short stay units.

Table 7: NSLHD ED Presentations by Hospital, 2013/14 to 2017/18

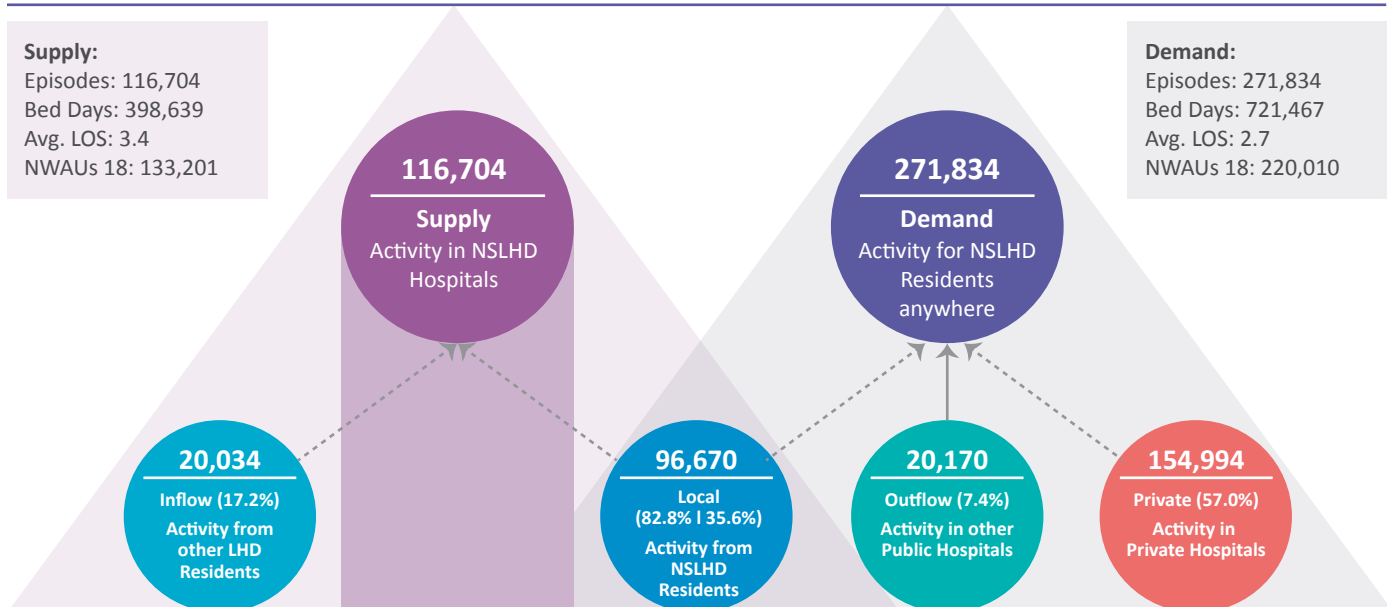
	2013/14	2014/15	2015/16	2016/17	2017/18	Change n	Change %	Change Annual
Hornsby	36,577	37,867	37,741	39,379	40,760	4,183	11.4%	2.7%
Manly	24,843	24,546	24,142	24,580	25,507	664	2.7%	0.7%
Mona Vale	33,048	33,851	34,420	35,035	34,894	1,846	5.6%	1.4%
RNSH	71,669	75,483	79,447	83,618	89,365	17,696	24.7%	5.7%
Ryde	26,396	27,103	26,985	26,519	27,741	1,345	5.1%	1.3%
NSLHD	192,533	198,850	202,735	209,131	218,267	25,734	13.4%	3.2%

IN 2017/18 NSLHD HOSPITALS AND SERVICES TREATED 218,267 PATIENTS IN ED: 163,238 ADULTS AND 55,029 CHILDREN.

3.2 Acute Admitted Care

- In 2017/18 there were 271,834 acute hospital episodes for Northern Sydney residents (Figure 4), of which 154,994 (57.0 per cent) were in private hospitals, 96,670 (35.6 per cent) were in Northern Sydney LHD hospitals and 20,170 (7.4 per cent) were in public hospitals outside Northern Sydney. Northern Sydney hospitals also cared for 20,034 patient episodes from outside Northern Sydney, comprising 17.2 per cent of the total 116,704 episodes occurring in Northern Sydney public hospitals.
- When same day episodes are excluded, the private hospital share of demand decreases from 57.0 per cent of all demand to 38.9 per cent of overnight episodes, and the total supply figure reduces to 80,314 overnight episodes in NSLHD hospitals.
- It is noted that standardised hospitalisation for rates for nearly all chronic medical conditions is lower for NSLHD residents than for any other LHD in NSW, usually by a significant amount; this reflects the relative affluence of NSLHD residents and underlying better overall health status compared to other LHDs.
- For a number of elective interventions (or example, myringotomy in 0-9 year olds and colonoscopy) hospitalisation rates are higher but largely driven by private hospital utilisation, where up to 90 per cent of hospitalisations for these procedures occur for NSLHD residents. Across most elective interventions the rate of private hospital utilisation is very high and the rate of public hospital utilisation is low, but for most interventions the overall rate appears to be below the state or national average.

Figure 4: Acute Episodes for NSLHD Hospitals and residents, 2017/18



Source: Ministry of Health (MoH), Clinical Services Planning Analytics Portal (CaSPA) FlowInfo V18. Excludes renal dialysis and unqualified neonates, patients admitted and discharged from ED, and admissions for chemotherapy. The following tables show acute episodes and bed days for Northern Sydney public acute hospitals only, for 2013/14 and 2017/18 (totals vary slightly from Figure 4 due to exclusion of a small number of acute admissions in the acute post-acute care service and in other facilities). Activity is shown for maternity and neonates, paediatrics and for adult acute (medical and surgical/procedural). Change in admissions is calculated as an average annual change over five years. Table 8 shows NSLHD totals while Source: Ministry of Health (MoH), Clinical Services Planning Analytics Portal (CaSPA) FlowInfo V18.

The following analysis focuses on episodes provided in public hospitals and specifically NSLHD hospitals. While Local Health Districts can see the quantum of episodes provided by the private sector, access to more detailed information at individual private hospital level is not available.

Table 8 shows acute episodes and bed days for Northern Sydney public acute hospitals only, for 2013/14 and 2017/18 (totals vary slightly from Figure 4 due to exclusion of a small number of acute admissions in the acute post-acute care service and in other facilities). Activity is shown for maternity and neonates, paediatrics and for adult acute (medical and surgical/procedural). Change in admissions is calculated as an average annual change over five years. Manly and Mona Vale Hospitals have been combined into a single line for the Northern Beaches, and represents activity before the opening of the new Northern Beaches Hospital.

- Total NSLHD acute episodes grew by nearly 16 per cent over the five years to 2017/18, while bed days increased by only 7.8 per cent. RNS and Hornsby Hospitals showed the greatest proportional increase in both episodes and bed days, while Manly/Mona Vale and Ryde Hospitals showed a decrease in total bed days.
 - The increase in overnight bed day utilisation across NSLHD was the equivalent to 68 extra overnight acute beds over five years at 85 per cent occupancy. This comprised 79 extra beds at RNS Hospital and 17 extra beds at Hornsby Hospital, balanced by a reduction of 17 beds at Ryde Hospital and 12 fewer overnight beds at Manly/Mona Vale Hospitals.
 - RNS Hospital accounted for just over half of all overnight episodes and 60 per cent of overnight bed days in 2017/18. Paediatric activity increased significantly at Hornsby Hospital for same day and short stay patients, and to a lesser extent at RNS Hospital, reflecting the uptake of short stay and ambulatory care models.
 - Maternity and neonatal episodes increased by 17 per cent over the five years at Hornsby Hospital, but only by 3 per cent at RNS Hospital while episodes decreased on the Northern Beaches.
 - The average overnight length of stay among acute patients in NSLHD public hospitals was 4.4 days.
- Adult medical admissions (which are predominantly unplanned) account for more than half of all acute admissions and 72 per cent of the total growth in admissions between 2013/14 and 2017/18. Adult medical admissions increased by 21 per cent while overnight bed days for this group increased by only 6 per cent. All adult medical admissions grew by 39 per cent over five years at Hornsby Hospital, 19 per cent at Northern Beaches Hospitals, 18 per cent at RNS Hospital, and by 12 per cent at Ryde Hospital. But short stay medical episodes increased at Hornsby Hospital by 135 per cent for same day and by 82 per cent for overnight under 24 hours, reflecting use of ED short stay units.
 - Over the five years the growth in adult unplanned medical admissions required the equivalent of 46 extra beds at RNS Hospital (at 85 per cent occupancy) and 14 beds at Hornsby Hospital, while there would have been a decrease of 4 beds at Manly/Mona Vale Hospitals and 11 beds at Ryde Hospital.
 - For surgical and procedural patients, there has been a 10 per cent growth in both planned and unplanned episodes. But by hospital, while planned overnight surgery hardly changed, RNS Hospital accounted for a 30-bed increase in surgery and procedures and Hornsby a 4 bed increase, while Manly/Mona Vale Hospitals decreased by 4 beds and Ryde Hospital by 4 beds.

In 2017/18 NSLHD hospitals and services:



Delivered

112,944

acute overnight episodes of care using 379,320 bed days

Table 8: Trends in Acute Overnight Episodes in NSLHD Hospitals 2013/14-2017/18

Table 8a: NSLHD Hospitals

Service Stream	LOS Group	2013/2014		2017/2018		Change		Change %		Change % p.a.	
		Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days
Maternity/Neonates		8,663	31,193	8,971	33,029	308	1,836	3.6%	5.9%	0.9%	1.4%
	Same Day	895	895	817	817	(78)	(78)	(8.7%)	(8.7%)	(2.3%)	(2.3%)
	ON <24	638	638	584	584	(54)	(54)	(8.5%)	(8.5%)	(2.2%)	(2.2%)
	ON >24	7,130	29,660	7,570	31,628	440	1,968	6.2%	6.6%	1.5%	1.6%
Paediatric		7,461	11,603	8,550	14,673	1,089	3,070	14.6%	26.5%	3.5%	6.0%
	Same Day	2,060	2,060	2,218	2,218	158	158	7.7%	7.7%	1.9%	1.9%
	ON <24	1,704	1,704	1,856	1,856	152	152	8.9%	8.9%	2.2%	2.2%
	ON >24	3,697	7,839	4,476	10,599	779	2,760	21.1%	35.2%	4.9%	7.8%
Adult Medical		53,617	186,918	64,702	201,473	11,085	14,555	20.7%	7.8%	4.8%	1.9%
	Same Day	14,959	14,959	19,920	19,920	4,961	4,961	33.2%	33.2%	7.4%	7.4%
	ON <24	8,028	8,028	10,586	10,586	2,558	2,558	31.9%	31.9%	7.2%	7.2%
	ON >24	30,630	163,931	34,196	170,967	3,566	7,036	11.6%	4.3%	2.8%	1.1%
Adult Surg/Proc		27,788	122,289	30,721	130,145	2,933	7,856	10.6%	6.4%	2.5%	1.6%
	Same Day	11,043	11,043	12,269	12,269	1,226	1,226	11.1%	11.1%	2.7%	2.7%
	ON <24	976	976	1,108	1,108	132	132	13.5%	13.5%	3.2%	3.2%
	ON >24	15,769	110,270	17,344	116,768	1,575	6,498	10.0%	5.9%	2.4%	1.4%
NSLHD Total		97,529	352,003	112,944	379,320	15,415	27,317	15.8%	7.8%	3.7%	1.9%

Table 8b: Hornsby Hospital

Service Stream	LOS Group	2013/2014		2017/2018		Change		Change %		Change % p.a.	
		Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days
Maternity/Neonates		1,645	4,156	1,924	5,180	279	1,024	17.0%	24.6%	4.0%	5.7%
	Same Day	126	126	167	167	41	41	32.5%	32.5%	7.3%	7.3%
	ON <24	139	139	159	159	20	20	14.4%	14.4%	3.4%	3.4%
	ON >24	1,380	3,891	1,598	4,854	218	963	15.8%	24.7%	3.7%	5.7%
Paediatric		1,928	2,818	2,048	3,427	120	609	6.2%	21.6%	1.5%	5.0%
	Same Day	469	469	464	464	(5)	(5)	(1.1%)	(1.1%)	(0.3%)	(0.3%)
	ON <24	472	472	419	419	(53)	(53)	(11.2%)	(11.2%)	(2.9%)	(2.9%)
	ON >24	987	1,877	1,165	2,544	178	667	18.0%	35.5%	4.2%	7.9%
Adult Medical		7,579	29,154	10,543	33,557	2,964	4,403	39.1%	15.1%	8.6%	3.6%
	Same Day	1,282	1,282	3,014	3,014	1,732	1,732	135.1%	135.1%	23.8%	23.8%
	ON <24	993	993	1,812	1,812	819	819	82.5%	82.5%	16.2%	16.2%
	ON >24	5,304	26,879	5,717	28,731	413	1,852	7.8%	6.9%	1.9%	1.7%
Adult Surg/Proc		4,758	14,809	5,642	16,183	884	1,374	18.6%	9.3%	4.4%	2.2%
	Same Day	2,409	2,409	2,883	2,883	474	474	19.7%	19.7%	4.6%	4.6%
	ON <24	138	138	181	181	43	43	31.2%	31.2%	7.0%	7.0%
	ON >24	2,211	12,262	2,578	13,119	367	857	16.6%	7.0%	3.9%	1.7%
NSLHD Total		15,910	50,937	20,157	58,347	4,247	7,410	26.7%	14.5%	6.1%	3.5%

Table 8c: Manly/Mona Vale Hospitals

Service Stream	LOS Group	2013/2014		2017/2018		Change		Change %		Change % p.a.	
		Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days
Maternity/Neonates		2,470	6,644	2,418	6,833	(52)	189	(2.1%)	2.8%	(0.5%)	0.7%
	Same Day	253	253	253	253	-	-	-	-	-	-
	ON <24	198	198	154	154	(44)	(44)	(22.2%)	(22.2%)	(6.1%)	(6.1%)
	ON >24	2,019	6,193	2,011	6,426	(8)	233	(0.4%)	3.8%	(0.1%)	0.9%
Paediatric		2,032	3,153	1,905	3,495	(127)	342	(6.3%)	10.8%	(1.6%)	2.6%
	Same Day	646	646	437	437	(209)	(209)	(32.4%)	(32.4%)	(9.3%)	(9.3%)
	ON <24	468	468	450	450	(18)	(18)	(3.8%)	(3.8%)	(1.0%)	(1.0%)
	ON >24	918	2,039	1,018	2,608	100	569	10.9%	27.9%	2.6%	6.3%
Adult Medical		13,895	41,181	16,561	40,157	2,666	(1,024)	19.2%	(2.5%)	4.5%	(0.6%)
	Same Day	4,440	4,440	5,939	5,939	1,499	1,499	33.8%	33.8%	7.5%	7.5%
	ON <24	2,128	2,128	2,844	2,844	716	716	33.6%	33.6%	7.5%	7.5%
	ON >24	7,327	34,613	7,778	31,374	451	(3,239)	6.2%	(9.4%)	1.5%	(2.4%)
Adult Surg/Proc		6,353	19,353	6,994	17,993	641	(1,360)	10.1%	(7.0%)	2.4%	(1.8%)
	Same Day	3,243	3,243	3,749	3,749	506	506	15.6%	15.6%	3.7%	3.7%
	ON <24	269	269	305	305	36	36	13.4%	13.4%	3.2%	3.2%
	ON >24	2,841	15,841	2,940	13,939	99	(1,902)	3.5%	(12.0%)	0.9%	(3.1%)
NSLHD Total		24,750	70,331	27,878	68,478	3,128	(1,853)	12.6%	(2.6%)	3.0%	(0.7%)

Table 8d: RNS Hospital

Service Stream	LOS Group	2013/2014		2017/2018		Change		Change %		Change % p.a.	
		Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days
Maternity/Neonates		4,373	20,217	4,496	20,874	123	657	2.8%	3.2%	0.7%	0.8%
	Same Day	390	390	310	310	(80)	(80)	(20.5%)	(20.5%)	(5.6%)	(5.6%)
	ON <24	254	254	234	234	(20)	(20)	(7.9%)	(7.9%)	(2.0%)	(2.0%)
	ON >24	3,729	19,573	3,952	20,330	223	757	6.0%	3.9%	1.5%	1.0%
Paediatric		3,482	5,613	4,583	7,737	1,101	2,124	31.6%	37.8%	7.1%	8.4%
	Same Day	926	926	1,303	1,303	377	377	40.7%	40.7%	8.9%	8.9%
	ON <24	764	764	987	987	223	223	29.2%	29.2%	6.6%	6.6%
	ON >24	1,792	3,923	2,293	5,447	501	1,524	28.0%	38.8%	6.4%	8.6%
Adult Medical		25,639	89,933	30,285	104,565	4,646	14,632	18.1%	16.3%	4.3%	3.8%
	Same Day	7,437	7,437	8,702	8,702	1,265	1,265	17.0%	17.0%	4.0%	4.0%
	ON <24	3,902	3,902	4,806	4,806	904	904	23.2%	23.2%	5.3%	5.3%
	ON >24	14,300	78,594	16,777	91,057	2,477	12,463	17.3%	15.9%	4.1%	3.7%
Adult Surg/Proc		13,303	78,881	14,803	88,092	1,500	9,211	11.3%	11.7%	2.7%	2.8%
	Same Day	3,548	3,548	3,948	3,948	400	400	11.3%	11.3%	2.7%	2.7%
	ON <24	424	424	490	490	66	66	15.6%	15.6%	3.7%	3.7%
	ON >24	9,331	74,909	10,365	83,654	1,034	8,745	11.1%	11.7%	2.7%	2.8%
NSLHD Total		46,797	194,644	54,167	221,268	7,370	26,624	15.7%	13.7%	3.7%	3.3%

Table 8e: Ryde Hospital

Service Stream	LOS Group	2013/2014		2017/2018		Change		Change %		Change % p.a.	
		Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days
Maternity/Neonates		175	176	133	142	(42)	(34)	(24.0%)	(19.3%)	(6.6%)	(5.2%)
	Same Day	126	126	87	87	(39)	(39)	(31.0%)	(31.0%)	(8.8%)	(8.8%)
	ON <24	47	47	37	37	(10)	(10)	(21.3%)	(21.3%)	(5.8%)	(5.8%)
	ON >24	2	3	9	18	7	15	350.0%	500.0%	45.6%	56.5%
Paediatric		19	19	14	14	(5)	(5)	(26.3%)	(26.3%)	(7.4%)	(7.4%)
	Same Day	19	19	14	14	(5)	(5)	(26.3%)	(26.3%)	(7.4%)	(7.4%)
Adult Medical		6,504	26,650	7,313	23,194	809	(3,456)	12.4%	(13.0%)	3.0%	(3.4%)
	Same Day	1,800	1,800	2,265	2,265	465	465	25.8%	25.8%	5.9%	5.9%
	ON <24	1,005	1,005	1,124	1,124	119	119	11.8%	11.8%	2.8%	2.8%
	ON >24	3,699	23,845	3,924	19,805	225	(4,040)	6.1%	(16.9%)	1.5%	(4.5%)
Adult Surg/Proc		3,374	9,246	3,282	7,877	(92)	(1,369)	(2.7%)	(14.8%)	(0.7%)	(3.9%)
	Same Day	1,843	1,843	1,689	1,689	(154)	(154)	(8.4%)	(8.4%)	(2.2%)	(2.2%)
	ON <24	145	145	132	132	(13)	(13)	(9.0%)	(9.0%)	(2.3%)	(2.3%)
	ON >24	1,386	7,258	1,461	6,056	75	(1,202)	5.4%	(16.6%)	1.3%	(4.4%)
NSLHD Total		10,072	36,091	10,742	31,227	670	(4,864)	6.7%	(13.5%)	1.6%	(3.6%)

Source: Ministry of Health (MoH), Clinical Services Planning Analytics Portal (CaSPA) FlowInfo V18.

3.3 Sub-acute Care

Sub-acute care includes rehabilitation, maintenance and palliative care, along with some admissions for psychogeriatric care and non-acute mental health (the latter have been omitted from this analysis). General rehabilitation units are located at Ryde (Graythwaite), Mona Vale and Hornsby Hospitals, with Royal Rehab contracted for provision of specialist brain and spinal injury rehabilitation. Inpatient sub-acute palliative care is provided by HammondCare through units located at Greenwich and Neringah Hospitals, while patients are also type changed to palliative care and managed within acute hospitals. Maintenance patients (mainly those awaiting residential aged care placement or home modification) may be located in either acute or sub-acute beds.

- In 2017/18 there were 11,819 sub-acute overnight episodes in Northern Sydney public and private hospitals, of which 57.9 per cent were in private hospitals, 38.5 per cent in NSLHD public hospitals and 3.6 per cent in hospitals outside NSLHD. Public overnight rehabilitation is no longer provided by Greenwich Hospital.

In 2017/18 NSLHD hospitals and services:



Delivered

5,271 sub-acute overnight episodes of care using 93,932 bed days.

➤ Table 9 shows 5-year trends in activity in Northern Sydney hospitals, including Greenwich, Neringah and Royal Rehab (which includes some private

patients). Although data is shown for rehabilitation in Greenwich Hospital in 2017/18, these were all private admissions.

Table 9: Trends in Sub-Acute episodes in NSLHD Hospitals 2013/14 to 2017/18

Hospital	Episode Type	2013/2014		2017/2018		Change		Change %		Change % p.a.	
		Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days	Episodes	Bed Days
Hornsby		589	13,183	733	11,519	144	(1,664)	24.4%	(12.6%)	5.6%	(3.3%)
	Rehabilitation	500	12,316	509	9,367	9	(2,949)	1.8%	(23.9%)	0.4%	(6.6%)
	Palliative Care	1	4	86	326	85	322	8500.0%	8050.0%	204.5%	200.5%
	Maintenance	88	863	138	1,826	50	963	56.8%	111.6%	11.9%	20.6%
Manly/MV		882	13,093	693	15,502	(189)	2,409	(21.4%)	18.4%	(5.9%)	4.3%
	Rehabilitation	523	10,858	645	14,996	122	4,138	23.3%	38.1%	5.4%	8.4%
	Palliative Care	5	22	1	3	(4)	(19)	(80.0%)	(86.4%)	(33.1%)	(39.2%)
	Maintenance	354	2,213	47	503	(307)	(1,710)	(86.7%)	(77.3%)	(39.6%)	(31.0%)
RNSH		1,621	11,355	956	8,865	(665)	(2,490)	(41.0%)	(21.9%)	(12.4%)	(6.0%)
	Rehabilitation	735	5,169	413	4,694	(322)	(475)	(43.8%)	(9.2%)	(13.4%)	(2.4%)
	Palliative Care	236	998	204	790	(32)	(208)	(13.6%)	(20.8%)	(3.6%)	(5.7%)
	Maintenance	650	5,188	339	3,381	(311)	(1,807)	(47.8%)	(34.8%)	(15.0%)	(10.2%)
Ryde		685	13,114	1,306	21,043	621	7,929	90.7%	60.5%	17.5%	12.5%
	Rehabilitation	548	11,418	774	15,413	226	3,995	41.2%	35.0%	9.0%	7.8%
	Palliative Care	17	73	88	428	71	355	417.6%	486.3%	50.8%	55.6%
	Maintenance	120	1,623	444	5,202	324	3,579	270.0%	220.5%	38.7%	33.8%
Greenwich		913	19,513	961	18,645	48	(868)	5.3%	(4.4%)	1.3%	(1.1%)
	Rehabilitation	419	10,274	537	11,536	118	1,262	28.2%	12.3%	6.4%	2.9%
	Palliative Care	436	7,652	424	7,109	(12)	(543)	(2.8%)	(7.1%)	(0.7%)	(1.8%)
	Maintenance	58	1,587	-	-	(58)	(1,587)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
Neringah		393	5,815	429	5,481	36	(334)	9.2%	(5.7%)	2.2%	(1.5%)
	Rehabilitation	-	-	-	-	-	-	-	-	-	-
	Palliative Care	393	5,815	429	5,481	36	(334)	9.2%	(5.7%)	2.2%	(1.5%)
	Maintenance	-	-	-	-	-	-	-	-	-	-
Royal Rehab		464	16,559	193	12,877	(271)	(3,682)	(58.4%)	(22.2%)	(19.7%)	(6.1%)
	Rehabilitation	459	16,489	193	12,877	(266)	(3,612)	(58.0%)	(21.9%)	(19.5%)	(6.0%)
	Palliative Care	-	-	-	-	-	-	-	-	-	-
	Maintenance	5	70			(5)	(70)	(100.0%)	(100.0%)	(100.0%)	(100.0%)
NSLHD Total		5,547	92,632	5,271	93,932	(276)	1,300	(5.0%)	1.4%	(1.3%)	0.3%

Source: Ministry of Health (MoH), Clinical Services Planning Analytics Portal (CaSPA) FlowInfo V18.

➤ New rehabilitation facilities opened at Ryde Hospital (September 2013) and Mona Vale Hospital (May 2014), resulting in large activity increases at those centres.

➤ With Greenwich Hospital excluded from this analysis, inpatient rehabilitation episodes in public hospitals have reduced by 28 per cent over the past five years reflecting strong growth in private rehabilitation services.

➤ RNS Hospital showed a decrease in sub-acute activity: in 2017/18 there were an average of 28 acute beds occupied by sub-acute patients (14 beds by rehabilitation, 12 by maintenance and 2 by palliative care) despite it having no dedicated sub-acute unit (this reflects a certain level of patient type-changing without immediate transfer to a suitable sub-acute unit).

- Royal Rehab has a 20-bed spinal injury unit. There were also the equivalent of 7 beds at RNS Hospital occupied by spinal cord injured patients who had been type changed to rehabilitation, a 79 per cent increase in bed days since 2013/14. This may indicate periodic difficulties in discharge of these patients from RNS Hospital.
- Bed days for maintenance were highest at Ryde, RNS and Hornsby Hospitals, with an average length of stay of 10 to 13 days. Maintenance activity increased at both Ryde and Hornsby Hospitals, and while it decreased at RNS Hospital the average length of stay increased. Further analysis of this activity and an understanding of the drivers for demand will be important to inform clinical services planning, particularly for the Ryde Hospital redevelopment.
- Inpatient palliative care activity at Greenwich and Neringah Hospitals has remained stable over time, possibly related to available capacity.
- Inpatient palliative care at Hornsby and Ryde Hospitals appears to have grown substantially but this is from a low base and reflects the practice of type changing selected acute patients who are palliative.

3.4 Non-admitted Care

Non-admitted care includes outpatient services, community and home-delivered services such as home nursing and procedures such as renal dialysis and chemotherapy.

Table 10 shows the number of service events in 2017/18 by facility and national Tier 2 service category. A service event is defined as an interaction between one or more health care provider(s) with one non-admitted patient, which must contain therapeutic/clinical content and result in a dated entry in the patient's medical record. These categories are divided into series 10 (procedures), series 20 (medical consultations), series 30 (diagnostic services) and series 40 (services provided by nurses and allied health practitioners). Procedures do not include in-centre renal dialysis, which is counted as admitted activity and considered separately, but do include peritoneal and home haemodialysis, along with radiation oncology, chemotherapy and some endoscopies. Many community health (including mental health) consultations are not reported through the non-admitted patient data system.

Table 10: Non-Admitted Service Events 2017/18 by Facility and Tier 2 Clinic Type

Facility	10 series - Procedures	20 series - Medical Consultation	30 series - Diagnostic Services	"40 series - Allied Health and/or Clinical Nurse Specialist Intervention"	Total	% AH/Nursing
RNSH	96,716	191,028	47,574	214,028	549,346	39%
Northern Sydney Home Nursing	-	-	-	165,229	165,229	100%
Hornsby	5,242	25,386	4,836	84,983	120,447	71%
Community Health	-	20,406	-	74,964	95,370	79%
Manly	3,207	10,396	602	66,323	80,528	82%
Mona Vale	5,039	11,793	3,023	20,126	39,981	50%
Ryde	663	10,121	4,153	25,008	39,945	63%
Greenwich	-	19,435	-	10,496	29,931	35%
Royal Rehab	-	5,549	-	5,187	10,736	48%
Neringah	-	4,238	-	233	4,471	5%
Total	110,867	298,352	60,188	666,577	1,135,984	59%
% RNSH	87%	64%	79%	32%	48%	

Source: NSLHD Report Central Non-admitted Data Explorer Report

- In 2017/18 there were 1.1 million non-admitted service events, with 48 per cent reported through RNS Hospital (but 87 per cent of procedures and 79 per cent of diagnostic services). This is equivalent to over

3000 service events per day. Allied health and nursing clinics or services accounted for 59 per cent of all service events.

- › Services vary enormously in volume and frequency. In 2017/18 there were 732 clinics reporting between 1 to 33,563 service events. Half of all service events were accounted for by 49 clinics while 202 clinics reported fewer than 100 service events (some of these may not have operated through the whole reporting period). Greater understanding is required of the nature of the non-admitted sector, including how services are established and whether the large number of lower volume clinics is warranted.

In 2017/18 NSLHD hospitals and services provided

1.1 MILLION

non-admitted service events – the equivalent of 3000 service events each day.

Renal dialysis

- › In 2017/18 there were 40,963 admissions of Northern Sydney residents for maintenance haemodialysis (equivalent to 263 patients), with 36.7% of these in the private sector, 50.4% in NSLHD hospitals and 12.9% in other LHDs. Since the closure of the Mona Vale dialysis unit, all public dialysis activity is admitted to RNS Hospital or to the Northern Beaches Hospital. In the five years since 2013/14 activity at RNS Hospital has been growing at an average of 6.3% per year. Residents of areas other than Northern Sydney comprised 14% of all dialysis admissions in 2017/18 (excluding the Big Red Kidney Bus) and their activity at RNS Hospital has been growing at an average of 32.5% per year. The availability of transplantation will have moderated some demand, and transplants have increased from 26 in 2013/14 to a peak of 44 in 2017/18.
- › About 19,000 service events for each of home haemodialysis and home peritoneal dialysis (PD) were provided by RNS Hospital in 2017/18 (there were 140 individual home haemodialysis patients and 92 individual PD patients within that financial year based on medical record number). Just over one quarter (25.7%) of home haemodialysis patients were residents of Northern Sydney (RNS Hospital provides a supra-LHD home dialysis role) while 83.7% of home PD patients were Northern Sydney residents. While home haemodialysis activity remained steady over the four years to 2017/18 home PD increased by an average of 8.8% per year.

Cancer therapies

Table 11 summarises non-admitted cancer care (medical and radiation oncology) in RNS and Manly Hospitals for 2015/16 to 2017/18 within the confines of the data system.

Non-chemotherapy includes treatments in the day therapy unit such as infusions, apheresis, venesection or bone marrow biopsies. Radiation oncology activity includes planning and simulation and brachytherapy as well as treatments, and which can amount to about half of all activity. Activity in all categories at RNS Hospital increased over the three years, particularly for radiation oncology treatments and medical oncology clinic attendances, while at Manly Hospital chemotherapy treatments increased significantly in 2017/18. However, there remain concerns about the quality of the non-admitted data and it is difficult to draw conclusions.

- › Based on the 2016 annual report for Radiotherapy Treatment Services in Australia, 58 per cent of Northern Sydney demand was met by RNS Hospital, with the remainder going predominantly to private providers. At RNS Hospital activity is equivalent to about 95 patients per day through the three linear accelerators.
- › Hornsby chemotherapy demand is met through a contract with a provider at the Sydney Adventist Hospital. In 2017/18, about 600 services were provided to about 60 patients. Many patients from Hornsby Ku-ring-gai also travel to RNS Hospital for public dialysis.

Renal dialysis and chemotherapy capacity is being planned into Hornsby Hospital Stage 2A redevelopment, which may provide some relief to capacity constraints at RNS Hospital.

In 2017/18 NSLHD hospitals and services:

- › Performed

44 kidney transplants.

- › Cared for approximately

365 patients receiving dialysis (home peritoneal dialysis and haemodialysis at home or in hospital).



Table 11: Non-Admitted Activity for Cancer Care, NSLHD 2015/16 to 2017/18

	RNSH					Manly				
	2015/16	2016/17	2017/18	Change n	Change %	2015/16	2016/17	2017/18	Change n	Change %
Chemotherapy treatment	7,570	7,708	8,326	756	10%	1,668	1,655	2,952	1,284	77%
Non-chemotherapy treatment	8,306	8,417	8,953	647	8%	-	-	-	-	
Radiation Oncology treatment	29,353	32,069	34,677	5,324	18%	-	-	-	-	
Haematology clinic	6,209	5,536	5,766	-443	-7%	-	-	-	-	
Medical Oncology clinic	6,435	6,920	7,594	1,159	18%	3,352	3,228	3,228	-124	-4%
Radiation Oncology clinic	11,397	11,618	11,698	301	3%	126	80	80	-46	-37%

Source: NSLHD Report Central Non-admitted Data Explorer Report

3.5 Service Impact

Formal projections for 2022 are not undertaken due to a number of methodological issues including:

- The official projection tool for acute inpatient and emergency activity derived its projections from a base year of 2014/15, while subsequent activity trends have deviated from trends leading up to that year. One of the significant trends has been a decrease in average length of stay for many admission types.
- Activity at RNS Hospital is expected to reduce following the opening of the Northern Beaches Hospital, and while reasonable assumptions have been made consistent with clinical advice, the actual impact will be better understood over time. Capacity requirements to meet Northern Beaches demand are effectively removed from NSLHD responsibility.
- Patient flows across the LHD have been changing following the completion of the redevelopment of RNS Hospital in 2015/16, particularly in relation to ED presentations, and these will affect projections based on existing flows.
- There have been significant changes in the provision of rehabilitation care with the opening of Graythwaite rehabilitation centre at Ryde Hospital, additional capacity at Mona Vale Hospital, cessation of purchasing general inpatient rehabilitation services from Greenwich Hospital and Royal Rehab and expanded capacity in the private rehabilitation sector.

However, using observed trends over the past five years, the following observations can be made:

- At the current rate of growth of 3.2 per cent per annum (which is more than twice the underlying rate of population growth), by 2022 ED activity across NSLHD will have increased by the equivalent of another Ryde Hospital ED, and RNS Hospital will have exceeded 100,000 presentations per annum.
- Regarding acute adult medical and surgical activity, on current trends by 2022, there is likely to be more than 16,000 additional acute admissions requiring approximately 55 beds. The district as a whole will have just enough built capacity to accommodate this growth. However, the current distribution of workload across hospitals would result in RNS Hospital's existing congestion becoming critical. The need to both address the rate of growth in activity and the distribution of workload across facilities is a high priority.
- With a total of 45 operating theatres, 10 endoscopy rooms and 96 intensive care beds there is sufficient built capacity across NSLHD to accommodate anticipated growth in demand for several years to come, with commensurate step-change increases in resources and redistribution of appropriate acute services from RNS Hospital to Hornsby, Northern Beaches and Ryde Hospitals.

- › Beyond 2022, additional built inpatient capacity will be required and Ryde Hospital redevelopment represents the next major opportunity. Over the longer term additional capacity will also be required at RNS Hospital, but this can only be assessed intelligently once changes in service distribution and implementation of new models of care to reduce inpatient demand or provide alternatives to inpatient care have been successfully implemented.
- › NSLHD is subject to the health of the private health care market with any changes potentially resulting in rapid shifts of activity into the public system, placing pressure on both infrastructure and costs. Services most likely to be affected by significant changes in the private health care market include elective surgery, maternity, renal dialysis, rehabilitation and mental health.
- › The future rate of growth in inpatient sub-acute activity is likely to be influenced as much by supply in the private health care market for rehabilitation as by changes to existing models of care.
- › New inpatient palliative care capacity at Mona Vale Hospital is likely to result in palliative care growth for the district, as palliative care activity has been constrained within its current capacity for a number of years.
- › There is likely to be an excess of built capacity in sub-acute beds across the district in the short to medium term. This may present an opportunity to use this spare capacity to address existing patient flow issues in the acute setting where it is reported that there are many patients no longer requiring acute care but whose progress is delayed waiting for suitable care elsewhere.

Beyond 2022 additional built inpatient capacity will be required across NSLHD.

- › **Ryde Hospital redevelopment represents the next major opportunity to increase capacity.**
- › **In the longer term additional capacity will also be required at RNS Hospital.**

4

ACHIEVEMENTS SINCE LAST CSP

2019 is the mid-point in the life of the NSLHD Clinical Services Plan 2015 – 2022. This chapter highlights the achievements to this point. The CSP identified 150 recommendations for the Clinical Networks and other service providers within NSLHD to be implemented by 2022. Following the release of the plan the scope of the Clinical Networks were realigned and the recommendations were expanded to a total of 184.

By early 2017, 27 recommendations had been implemented and 120 were in progress representing 80 per cent of the expanded total. This chapter focuses on the high level achievements of the LHD to 2019 and acknowledges that the achievements presented are not an exhaustive list. Many of the expanded recommendations are currently the focus of attention and others are scheduled for implementation in the future.

The transition of acute services from Manly and Mona Vale Hospitals to the new Northern Beaches Hospital in October/November 2018 was a major achievement; the smooth transfer of services and restructuring within NSLHD to reflect the changed configuration of services particularly at Mona Vale and RNS Hospitals. The community health services in the Northern Beaches were consolidated in three new or redeveloped hubs at Mona Vale, Brookvale and Seaforth (Dalwood) as part of the service transition.

NSLHD has implemented a number of Leading Better Value Care projects as part of the Ministry of Health's value-based health care to improve patient's experience of health care and their health outcomes. The projects include:

- Renal Supportive Care - offers a positive non-dialysis pathway for patients with end stage kidney disease.
- Diabetes High Risk Foot Service - prevents and manages complex wounds.
- Osteoporosis Refracture Prevention Program - allows patients to improve their self-management, increase their functioning, reduce osteoporosis/osteopenia, and ultimately reduce re-fracture rates.
- Osteoarthritis Chronic Care Program - improves patient's self-management, weight loss, increases function and reduces pain and length of stay post joint replacement surgery, and, for some patients, avoids surgery.
- Heart Failure Re-Design Program involves multidisciplinary coordination of care to support heart failure patient's self-management and prevent acute exacerbations of their condition.

Maternal, Neonatal and Women's Health

- The Towards Normal Birth policy has been implemented with standard practices in place to increase the number of women who access Midwifery Group Practice and GP Shared Care models, increase the number of women who birth with minimal or no medical intervention, improve pain relief in labour and access to water immersion, and mother-baby skin to skin contact within an hour of birth.
- Women who birth in NSLHD hospitals now receive midwifery support at home for two weeks after the baby is born. Special Care Nursery staff at Manly and Mona Vale Hospitals were up-skilled in anticipation of their move to a higher level neonatal service at the new Northern Beaches Hospital; at Hornsby Hospital staff have been up-skilled so that they can care for babies born at ≥ 32 weeks.
- A Women's Ambulatory Care Clinic was established at RNS Hospital in July 2018 to provide minor gynaecology procedures reducing the need for women to be admitted to hospital.

Child, Youth and Family Health

- › A youth health team has been established to provide clinical consultancy services for young people aged 12 to 24 years in acute and community settings through age-appropriate assessment, brief intervention and referral with the aim of reducing re-admissions and improving access to appropriate health care.
- › Hornsby Healthy Kids is one of only a few services in NSW outside Sydney Children's Hospitals Network providing secondary level, multidisciplinary healthy weight management program for children and families. Evaluation of the program demonstrated health improvements for children and families.
- › An integrated suite of services has been established to reduce the need for children to be admitted to hospital. Paediatric Acute Review Clinics and Paediatric Hospital in the Home services are now available at Hornsby and RNS Hospitals.

Acute and Critical Care Medicine

- › Patients presenting to the ED have access to short stay and early review by a senior clinician to streamline their care as part of the model of care. Patient pathways have been established for children with acute abdominal pain or scrotal pain, and adults with suspected myocardial infarction, renal colic, cellulitis, diabetic ketoacidosis, syncope and electrolyte disturbance.
- › Standardisation of medical assessment unit models across NSLHD hospitals against the ACI defined model of care provides rapid access to hospital care and care coordination across the hospital and community.
- › RNS Hospital is the accredited hospital in NSLHD for the provision of ERCP services with referral pathways from Hornsby and Ryde Hospitals.
- › The new model of care for the infectious diseases service has improved microbial stewardship protocols and responsiveness to service demand.

SINCE LATE 2018 NO PATIENTS WAIT LONGER THAN THE RECOMMENDED TIME FOR THEIR ELECTIVE SURGERY ("TRIPLE ZERO").

Chronic and Complex Medicine

- › A diabetes telephone hot-line for general practice provides education and the opportunity for case conferencing for GPs managing patients with diabetes particularly women from culturally and linguistically diverse (CALD) backgrounds who have gestational diabetes.
- › Young adults in the Northern Beaches are now able to access endocrinology services at the new Brookvale Community Health Centre and insulin stabilisation clinics with telehealth follow up, help patients optimise the time it takes them to achieve glycaemic control.
- › Health professionals in rural and regional areas and GPs in Northern Sydney have been trained in the tiered approach to management of chronic pain.

Surgery and Anaesthesia

- › The Hornsby Hospital STAR (Surgery, Theatres, Anaesthetics and Recovery) building opened in 2016, providing a new perioperative unit, eight operating theatres, two endoscopy rooms, and 56 surgical beds.
- › Since late 2018, NSLHD hospitals had no patients waiting longer than the recommended time for their elective surgery (Triple Zero) and, with some exceptions, have performed well in treating emergency surgery patients.
- › The development of the Elective Surgical Waitlist and Theatre Information Management system (TIMS) dashboards and reporting tools has improved NSLHD's ability to deliver efficient elective and emergency surgical services. The dashboards consolidate, visualise, analyse and report on key performance indicators (elective waiting times, emergency theatre access) and service efficiency measures (theatre utilisation, day of surgery admission, extended day only, on-time starts, and day of surgery cancellations).
- › Contemporary models of care and district guidelines have been developed and implemented for:
 - › Perioperative preparation for adult elective surgery patients
 - › Pre-operative fasting
 - › Management of children with torsion of the testes and abdominal pain
 - › Criteria led discharge for thyroidectomy.

Cardiothoracic and Vascular Health

- › Rapid Access Chest Pain Clinics at both RNS and Hornsby Hospitals provide access to cardiology diagnostic services and specialist consultation for patients with chest pain following discharge from ED.
- › The interventional cardiology and cardiothoracic surgical departments deliver integrated interventions to streamline referral, comprehensive assessment and management across admitted and non-admitted settings.
- › The district-wide lung cancer project established new lung cancer referral pathways to support condition management, service navigation and links with general practice.

Musculoskeletal Health, Plastics/Burns, Spinal and Trauma

- › Implementation of a model of care for the delivery of elective lower limb arthroplasty has reduced the length of stay for patients with planned hip and knee replacements by at least one day.
- › The orthogeriatric model of care provides older patients with hip fractures access to surgery within 48 hours, improved pain management and earlier mobilisation.
- › The Back and Neck Pain pathway has reduced the non-admitted ortho-spinal waitlist by about 10 months.
- › A review of spinal cord injury bed shortages resulted in integrated management pathways between acute and rehabilitation spinal units and additional allied health positions.

Neurosciences

- › Consolidation of hyperacute stroke care at RNS Hospital has improved patient outcomes and reduced variation in stroke care across NSLHD.
- › Patient's early access to stroke rehabilitation services was improved with a standardised approach to confirm eligibility for rehabilitation, integration of rehabilitation review within the stroke pathway, and better integration between neurology and rehabilitation services.
- › A shared arrangement with Westmead Hospital for endovascular clot retrieval for eligible patients has increased the number of interventional neuroradiology cases and reduced door to treatment time.
- › A service mapping exercise of neuroscience services in NSLHD has identified access, use and gaps in service provision, which will inform the future models of care.
- › Non-thrombolysing stroke services commenced at Ryde Hospital to provide stroke care for patients closer to where they live.
- › The genetic service has implemented an improved diagnostic pathway for patients affected by mitochondrial disease to provide better outcomes for these patients.

Cancer and Palliative Care

- › Clinical pathways have been developed for breast, gynaecological and colorectal cancers in collaboration with the SNPHN, and lung and liver cancer pathways are being developed internally.
- › A medical oncology information system provides improved safety in chemotherapy prescribing.
- › RNS Hospital and HammondCare have an agreed approach to end of life care which improves patients' access to palliative care consultations and ensures consistency of care across all NSLHD hospitals.
- › Planning was completed for the Mona Vale Hospital palliative care inpatient unit.



Almost
700 STAFF
from Manly and Mona Vale
Hospitals transferred with
105 PATIENTS
to the new Northern Beaches Hospital which
opened at the end of October 2018.

Rehabilitation and Aged Care

- › The performance framework for rehabilitation services provides a consistent referral to rehabilitation across all NSLHD hospitals and improved clinician awareness of related services.
- › The “Memory Problems” brochure assists consumers with service navigation and links with general practice.
- › The identification and management of delirium in admitted patients has improved in NSLHD hospitals.
- › Specialist geriatric outreach to residential aged care has contributed to hospital avoidance.
- › The *Asia Pacific Clinical Guidelines for Frailty* provides integrated care for older people to manage their diet (protein intake), physical activity, inappropriate polypharmacy and vitamin D.

Mental Health Drug and Alcohol

- › MHDA consumers are able to access services through the dedicated telephone access line. A GP clinic located at Hornsby Hospital provides a safe environment for mental health consumers to address their physical health concerns, particularly for those who have chronic health conditions.
- › A range of strategies has improved service development for children, young people and older people, consumers with eating disorders, borderline personality disorders and bi-polar disorder.
- › The *NSLHD MHDA Directorate Mental Health Service Plan 2017-2026* and *NSLHD MHDA Directorate Drug and Alcohol Service Plan 2017-2026* provide strategic directions for MHDA services across NSLHD.



THE DISTRICT LAUNCHED THE SECOND CARERS STRATEGY 2018 – 2023 TO BUILD ON THE ACHIEVEMENTS OF THE FIRST PLAN THAT WILL SEE INITIATIVES SUCH AS A PATIENT’S STATUS AS A CARER BEING LISTED ON THEIR MEDICAL RECORDS.

Primary and Community Health

- › The Acute Post-Acute Care Service (APAC) medical model provides an expanded scope of service for consumers including children with specific conditions.
- › The Northern Sydney Home Nursing Service has expanded its services to patients to include transitional nursing practice, social work and other allied health.
- › The Chronic Disease Service has integrated with the MACARF (Management of Cardiac Failure) program to improve the health outcomes of patients with chronic cardiac and respiratory diseases.
- › The Refugee Health Assessment Program has been expanded to provide services to Syrian refugees settling in the Ryde and Northern Beaches areas, providing access to GPs, oral health, optometry, mental health and specialist health services on arrival in NSLHD.
- › The Domestic Violence Service has worked with other health services in the LHD to improve recognition and care for people experiencing violence, abuse and neglect.

Allied Health

- › The capture and useability of management and activity reports has significantly improved. The utilisation of allied health activity data in inpatient, non-admitted and community health services provides the basis for ongoing evidence-based service development, evaluation of clinical variation, and strategic service and workforce planning.
- › Allied health assistant positions have been established with appropriate certificate IV training provided.
- › An allied health professorial position was established in January 2018 in partnership with University of Sydney to support allied health clinicians to engage in clinical research.

Pharmacy

- › The implementation of the electronic medical record, including electronic medication management (eMeds) and specialised systems for Intensive Care (eRIC) and cancer chemotherapy (OMIS), has facilitated pharmacy service improvements across NSLHD hospitals.
- › RNS Hospital has established a research collaborative with Clinical Pharmacology and the Kolling Institute and obtained approval for a Chair of Pharmacy Practice with the University of Sydney to commence in 2019.

Medical Imaging

- › The two CT machines at RNS Hospital radiology have been upgraded and one replaced, which enables faster imaging, reconstruction times and access to CT coronary angiography (CTCA) capabilities.
- › Stage 2 of the Hornsby Hospital redevelopment has commenced; imaging services will be provided within the hospital and will include two CT machines, a fluoroscopy room, orthopantomography (OPG) and an MRI.
- › RNS Hospital Nuclear Medicine service has provided increased therapeutic procedures and was selected with St George Hospital to provide lutate therapy for neuroendocrine tumours funded by the Ministry of Health.

Aboriginal Health

- › The Aboriginal Health Clinic (Bungee Bidge) GP Training Unit at Hornsby Ku-ring-gai Hospital provides chronic disease management, mental health, dental and specialist health services to Aboriginal and Torres Strait Islander people.
- › The [NSLHD Aboriginal Health Services Plan 2017-2022](#) outlines strategies for improved service delivery and recognition of Aboriginal and Torres Strait Islander people.

Research

- › NSLHD research has moved toward health and wellbeing of people from birth and across the lifespan, focusing on translation of research into clinical practice; providing more holistic, preventive health care strategies; trials of new technologies and systems of care; and implementation of innovations into clinical care.

The NSLHD Speak Up For Safety program was launched first at Royal North Shore Hospital to build on the culture of providing safe and high-quality health care and empower staff to respectfully raise any safety and quality concerns should they arise.



5

SERVICE DRIVERS

Over the last decade there have been multiple external and internal service drivers affecting the provision of health services in NSLHD and the health system more broadly. Figure 5 summarises the major drivers of change.

- › While NSLHD residents generally have good health, the population is growing and ageing. Some vulnerable groups do not share the health benefits experienced by most of the community. Many patients have increasingly complex conditions, particularly those from vulnerable groups. This requires an increased focus on chronic illness, conditions of ageing and better integration across service and provider boundaries. These strategies involve sustained efforts to link providers in a patient-centred model of care, across the continuum of care from primary care to admitted services and between the public, private and not for profit sectors.
- › There is a greater need for collaboration and partnerships with patients or consumers and their carers, across disciplines, with primary health care, the private sector, non-government or not for profit sector and with universities and industry in research. Developing workforce capabilities will be crucial to respond to future service demands.
- › Rapid advances in technology and translational research have supported improved diagnosis and targeted care. Sophisticated data analytics provides opportunities to identify patients who would benefit from targeted programs delivering better integrated care. Telehealth will enable treatment and monitoring close to home. Each of these drivers will contribute to improved patient outcomes and experience.
- › NSLHD has invested in new and redeveloped hospitals and community health centres to improve the efficient delivery of new models of care. Hospitals and community health centres operating in buildings that are not designed for their current purpose can struggle to attract patients. Detailed planning will be required to address this issue.
- › More generally there is an increased focus on the environmental sustainability of the health care sector which is reported to contribute to 7 per cent of all Australian emissions (Malik A et al. The carbon footprint of Australian health care. The Lancet Planetary Health 2018; 2(1):27-35). Coordination at a state or national level will support and amplify local strategies that seek to address waste management, energy use and construction or upgrade of health facilities. In addition, local efforts that focus on the design and delivery of frontline clinical services have the potential to reduce NSLHD's environmental footprint and subsequent impact on climate change.

The changing social and policy environment recognises that care needs to reflect each person's choice about what services they access and how those services are provided. NSW Health is focusing on value-based health care where patients' outcomes and experiences are monitored and used to improve the service response to each patient's particular needs.



Value-based health care means delivering services that improve:

- › Health outcomes that matter to patients
- › The experience of receiving care
- › The experience of providing care, and
- › The effectiveness and efficiency of care

Value-based health care

The health system is evolving from measuring volume in terms of activity and outputs, to measuring value to patients in terms of their health outcomes and experiences of care. A system which delivers high value care requires a strong focus on evidence-based care, high levels of integration across internal and external service providers, and strong commitment from clinical staff and the organisation as a whole.

The [Leading Better Value Care Program](#) seeks to identify and implement opportunities for delivering value-based care. NSLHD is working with the Ministry of Health to develop and implement initiatives to improve the management of bronchiolitis, hip fractures and wounds, improve access to colonoscopy services and to evidence-based hypo-fractionated radiotherapy treatment for breast cancer. It has also, with the support of the Agency for Clinical Innovation and the Clinical Excellence Commission, introduced new or improved models of care for:

- Management of Osteoarthritis (Osteo-Arthritis Chronic Care Program OACCP)
- Osteoporotic Refracture Prevention (ORP)
- Renal Supportive Care (end stage kidney disease, palliative and end-of-life care)
- Diabetes High Risk Foot Services (HRFS)
- Management of Diabetes Mellitus
- Management of Chronic Heart Failure (CHF) and Chronic Obstructive Pulmonary Disease (COPD)
- Adverse Events: Falls in Hospitals.

Patient reported measures

Patient Reported Measures (PRMs) are a critical component in supporting Leading Better Value Care. Patient reported measures capture what matters to patients in their life. It enables patients to provide direct timely feedback to their health professionals about outcomes and experiences that are important to them. It also enables a consistent and structured method to capture and use patient reported outcomes and experiences in real time. This information will also support services to identify opportunities to improve outcomes over time.

Patient reported measures can be broken into two groups: Patient Reported Outcome Measures (PROMs) and Patient Reported Experience Measures (PREMs).

- PROMs capture patients' perspectives about how their illness and care impacts on their physical, mental and emotional health and wellbeing. Surveys are collected regularly, usually before or during an appointment or visit with their health care provider, service or hospital. The questions help to identify what matters most to a patient and how their care, treatment or symptoms are affecting them. The answers help the health care provider or service to have a conversation with their patient about the important things in their life, such as the impact pain may have on things they enjoy like socialising and being active. Because the surveys are completed over time they help to identify if the care or treatment is making a difference. Patients also like to see or keep track of their progress as often it can be difficult to recall how they were feeling 12 months ago.
- PREMs gauge patients' experiences and satisfaction with their health care. They are surveys that are completed anonymously by patients to capture honest feedback about their experience with health care services. Patient cannot be identified by the information they provide to an individual provider. PREMs are typically collected at the end of the service or program, or at regular intervals for longer term services, to allow patients to reflect on their overall experiences.

The future sustainability of the health care system is one of the most significant challenges for both clinicians and consumers. The demand on the health system cannot be met without significant change in how services are delivered. Together the value-based health care and patient reported measures programs will help patients, carers, the community and clinicians identify initiatives that will create better value health care, optimise the use of health resources and improve the quality and safety of patient care. The strategic directions and recommendations identified by clinical networks, hospitals and services respond directly and indirectly to these challenges and changes.



Figure 5: Major drivers of change in the provision of health services





Primary Health Care

- Increasing opportunities for collaboration with general practice through Primary Health Networks.
- Impact of availability of GPs on emergency department demand.
- Ongoing development of Health Pathways which support service navigation, condition management and referral to specialist care when required.



Private Health Care

- NSW residents have a very high level of private health insurance and the highest concentration of private hospital beds in NSW.
- By the end of 2018 there were 2,283 licensed private beds in the LHD representing a growth of 500 beds or 28% over a five year period.
- There are benefits to patients in having greater choice in health care provider, with the private sector providing care predominantly, but not exclusively, in the areas of elective surgery, maternity, renal dialysis, rehabilitation and mental health.
- NSW is subject to the health of the private health care market with any changes potentially resulting in rapid shifts of activity into the public system, placing pressure on both infrastructure and costs.



Regional Development

- The Greater Sydney Region Plan identifies St Leonards, Macquarie Park and Frenchs Forest, in particular, as areas of significant growth.
- This plan also targets the development of Health and Education Precincts and the need for affordable housing and improved transport links.
- Concord Hospital redevelopment has potential to affect patient flows to NSW hospitals.



NSLHD RECOGNISES THE IMPORTANCE OF REDUCING ITS ENVIRONMENTAL FOOTPRINT - SUSTAINABLE HEALTH CARE IS ACHIEVED BY DELIVERING HIGH QUALITY CARE AND IMPROVING PUBLIC HEALTH WITHOUT EXHAUSTING NATURAL RESOURCES OR CAUSING ECOLOGICAL DAMAGE.

6

STRATEGIC DIRECTIONS

NSLHD's primary purpose is to deliver high quality health care that is responsive to the needs of the population. The *NSLHD Clinical Quality Improvement Framework 2016-2022* sets out a strategy to reliably deliver the best possible clinical care that is person centred, safe, effective, appropriate, efficient, timely and equitable. Based on comments and community feedback through the NSW Patient Survey and local community forums, our patients define quality health care as one that provides "compassionate and respectful person-centred care in a clean environment and in partnership with them as an informed and contributing team member". Clinicians' vision for high quality care often focuses on delivering care sustainably and with good outcomes for every patient, every time, while organisationally, high quality care is often described as "the right care, at the right time, delivered by the right people, in the right place".

Clinicians and patients further define elements of good care:

- Participative – patients are at the centre of care, are active contributors as well as receivers of care, co-design care with their treating team, and co-design care systems.
- Joined up – care is delivered by a team of clinicians than can span multiple clinical disciplines and services provided by NSLHD or affiliated health organisations, and extends to providers in primary and community settings; good clinical outcomes and patient outcomes and experiences are dependent on excellent communications between services, and, where possible or appropriate, the integration of services.
- As close to home as possible – development of high quality care and services at local hospitals will give patients confidence to access care locally rather than having to travel some distance to access routine care at RNS Hospital.

- Informed by evidence – including through the translation of research into practice, the application of best practice guidelines, and continuous evaluation of services with insights from data analytics and a deep understanding of health needs and options for service delivery.
- Evaluated and improved in partnership with consumers – with a particular emphasis on developing better understanding of patients' perspectives on outcomes that are important to them and their experience of care.

Strategic directions and recommendations for service development have been developed with reference to these constructs of high quality care.

In undertaking consultation for this Clinical Services Plan, a number of major themes emerged, three of which led to the Think Tanks for emergency (unplanned) care, the health of older people and non-admitted care. These themes, as described in Figure 6, will underpin many of the clinical network recommendations and the strategic directions for hospitals and services, and reflect components of the NSLHD Strategic Plan.

Quality health care:

- **Compassionate and respectful person-centred care in a clean environment and in partnership with the patient as an informed and contributing team member.**
- **Right care, right time, right people, and right place with good outcomes for every patient, every time.**
- **Participative, joined-up, as close to home as possible, informed by evidence, evaluated and improved in partnership with consumers.**



Figure 6: Strategic Directions for NSLHD



Proactively manage the increasing demand for emergency care

Emergency, or unplanned care, represents a significant proportion of acute hospital workload and resources, representing over three quarters of hospital admissions and hospital beds.

The increasingly high utilisation of ED services has many drivers beyond an increase in population. These include the ageing of the population and increasing prevalence of chronic illness, the convenience of receiving definitive, comprehensive and timely care at no cost, the excellent amenity of new hospital buildings, equipment and infrastructure, perceived lack of alternatives to emergency departments for patients, and many others. This growth in ED is significantly faster than historical rates and underlying population increases. While some of the growth can be attributed to an increase in ambulance arrivals the growth is predominantly among walk-in patients.

This is particularly evident at RNS Hospital where the ED, which has become the busiest in NSW, now sees an average of 250 presentations each day, often peaking above 300 presentations. Since RNS Hospital was redeveloped, growth in ED presentations has occurred at twice the rate of surrounding hospitals and has led to a shift in historical patient flows towards RNS Hospital, including ambulance arrivals. This sustained growth in ED presentations and the follow-on demand for admitted hospital care is not only threatening RNS Hospital's capacity to deliver care at agreed performance benchmarks but also to fulfil its role as the tertiary referral centre for the district (and beyond for a number of complex services).

To better manage the growth in emergency or unplanned care NSLHD will focus on

1. Reducing preventable ED presentations and hospital admissions, including:
 - Chronic conditions – keep people well, access to comprehensive primary care supported by specialist services, pathways to primary or specialist care for exacerbations or deteriorations.
 - Frail aged – early identification and intervention before reaching crisis that precipitates presentation/admission.

- › Other targeted patient groups such as cancer and palliative care patients – pathways to access primary or specialist care for patients in active treatment programs where care would be more appropriately provided by the specialist team rather than through the ED.
- 2. Distributing unplanned workload across the NSLHD hospital network, including:
 - › Review of the NSW ambulance matrix to direct minor, orthogeriatric care and other appropriate presentations to local hospitals and away from RNS Hospital.
 - › Improve the capabilities of local hospitals to deliver a comprehensive suite of secondary level services.
 - › Increase the attractiveness of and confidence in local services for residents and referring GPs.
- 3. Developing alternatives to ED presentation or hospital admission, including:
 - › Identifying high priority specialty services where patients can be referred for rapid assessment of urgent but non-life-threatening symptoms.
 - › Care/assessment in the community.
 - › Direct admission or referral to non-ED services for selected conditions, presentation types, particularly for patients who are known to or are in active treatment.
 - › Partnership/collaboration with the Primary Health Network to identify and design high priority services as alternatives to the emergency department.
 - › Education of referrers and community about pathways to care.
- 4. Improving the flow of patients who present to emergency, including:
 - › Consistent early specialist review and decision making.
 - › Use of an appropriate workforce skill mix, including an allied health emergency department resource model.
 - › Improved access to diagnostics, particularly outside standard working hours.
 - › Matching capacity to demand patterns across short stay and other units.



Improve the health and care of older people

The NSLHD population will see large increases in the number of older people over the next decade with the number of residents aged over 70 years expected to increase at three times the rate of the general population. ED presentation and hospital admission rates increase significantly as people age and care needs become more complex, with the presence of one or more chronic diseases and increasing frailty. Despite multiple hospital avoidance strategies, rapid responses and other programs implemented over the last 5-10 years, there appears to have been little change in the rates of presentation to NSLHD EDs and hospital admissions, with the total volume increasing with population growth.

Given the expected population growth in the older age groups, NSLHD needs to build on, and better coordinate, existing services and identify new ways to proactively meet the health needs of older people and manage the anticipated growth in service demand. This will require collaboration and partnerships across specialties within NSLHD hospitals and community services (particularly hospital in the home and community nursing), with GPs and other primary care providers such as pharmacists and allied health practitioners, and with non-health community service providers.

It is anticipated that the report of the Royal Commission into Aged Care Quality and Safety will result in further recommendations for action by the Local Health District.

To improve the health and care of older people NSLHD will focus on

1. Improving the care of older people who require hospital type care:
 - › Identification of frailty or complex health needs using a standardised assessment tool across all specialties with subsequent referral of patients who could benefit from geriatric assessment, referral or shared care between admitting specialist and geriatric or general medicine teams.
 - › Routine care for older people admitted to hospital, regardless of clinical specialty, encompassing a review of medications, maintenance or improvement of mobility, enhancement of nutritional status to promote recovery, identification and management of delirium and dementia, and other opportunistic restorative care.

- Proactive management of post-hospital care with, for example, transfer of care to community nursing services for support in the first hours and days post discharge, follow-up on day after discharge, proactive and real-time referral back to GP, and partnerships with community services to provide wrap around health and social support on discharge
 - Development of the Hospital in the Home model and associated care bundles so that an increasing number of older patients can be cared for at home and avoid admission to a hospital ward
- 2. Supporting residential aged care facilities to meet the health needs of residents:
 - Expansion and improvement in rapid response service delivery models with scheduled proactive review and intervention to manage simple infections, delirium, etc., in place rather than transporting residents from their residence to the emergency department. This could include increasing use of telehealth solutions and exploration of nurse practitioner roles (with Medicare billing opportunities) within NSLHD, primary care or other organisation
 - Innovative approaches to continuing education and support for residential aged care facility staff such as webinar and video platforms to reinforce best practice care at any time
- 3. Early identification and coordinated support for patients living at home when needed:
 - Identification by GP or other primary care provider of older people living at home who are at risk of, or are experiencing, decline in physical or cognitive health and could benefit from specialist assessment
 - Development of Geriatric Evaluation and Management (GEM) model (at Mona Vale Hospital in the first instance) to provide a comprehensive assessment and coordinated response to identified needs of patients with complex needs
 - Development of bundles of care, coordinated across providers to address mobility, nutrition, dental health, physical health needs and support in daily living, as well as social and emotional wellbeing

- 4. Improving the integration and patient focus of care systems for older people:
 - Simplification of service provision, through single points of access, reduction of duplication and standardisation of models across NSLHD including service naming, scope, eligibility criteria, prioritisation criteria, assessment tools, care bundles, and agreed response times, performance standards.
 - Development of systems to respond to patient reported measures.



Invest in non-admitted care

Non-admitted care encompasses services that are delivered at a hospital or community health centre, at home or other community setting, or using telehealth and associated technology platforms. It includes: specialist and multidisciplinary consultation clinics; imaging, pathology and other diagnostics; minor surgery or procedures; chair-based therapies such as dialysis, chemotherapy and infusions; allied health therapies and nursing interventions; preventive care for children and young families; supportive care for older people; rehabilitation following injury or for chronic disease; ongoing mental health care; and end of life or palliative care.

The increasing demand for health care, improvements in treatments and communication platforms, and availability of skilled and expert clinicians presents us with opportunities to re-imagine the provision of patient-centred care in non-admitted settings. The current over-reliance on hospital-based health care is placing significant pressure on services in NSLHD, is unsustainable, costly and does not represent the best value for patients or providers when alternative approaches are available. There is a global trend that seeks to deliver more non-admitted care and the NSW Ministry of Health has given a clear signal that future growth funding will be weighted towards non-admitted services.

NSLHD already provides a wide range of services in non-admitted settings but there is little evidence of system design, and services have often developed piecemeal and in isolation from each other. Consumers and referrers report that they have difficulty knowing what services are available, who they are for, where they are provided and how to access them. Clinics and services vary enormously in levels of activity, with large numbers of low-volume clinics.

The development of non-admitted services requires a new approach that sees the community or other appropriate non-admitted setting as the natural location for most health care, with ED presentation or hospital admission as the alternative if the illness is severe, requires complex surgery or more intensive assessment, treatment and care which cannot be provided in a non-admitted setting.

The development of a comprehensive system of non-admitted care cannot be achieved by NSLHD in isolation; it will need to engage with the community and patients, with the Sydney North Primary Health Network, with the private health sector and with non-health community providers. The development of non-admitted services also needs to complement rather than duplicate or replace services that are currently provided in other health sectors including primary care and private specialist and allied health practices.

To support the development of non-admitted care NSLHD will focus on

1. Designing a contemporary non-admitted care system:
 - Developing a framework to guide the design and development of an integrated system of care including: principles for non-admitted service development; determining the appropriate scope and mix of services; what services should be prioritised for development; funding and resource models that will support transition from admitted to non-admitted care; structures required to ensure access is equitable, standards of care are safe, evidence-based and consistently applied; and that there is transparency in performance and compliance expectations.
 - Reviewing existing non-admitted services to identify innovative models and best practice, streamline and rationalise services that are similar or target similar patient groups, and consideration of how services should be further developed, distributed across NSLHD, and incorporated into the integrated system of care.
 - Identifying tertiary services that should be provided in one location for the whole district and the suite of secondary services that should be made available in all sectors.
 - Developing a comprehensive, searchable directory of services that will support referrers, patients and service providers to select, access and navigate appropriate services.
2. Developing non-admitted services that can reduce the need for ED presentation and admitted hospital care:
 - Access to specialist expertise that supports GPs in managing most patients within the primary care setting.
 - Providing continuing education and rapid access to specialist support and advice on management of specific conditions and patients, particularly those with chronic health conditions, in a primary care setting.
 - Targeting older and younger patient groups, who are the most frequent users of ED services, to identify alternative pathways to care.
 - Targeting high risk patients with chronic illness or complex conditions with comprehensive multidisciplinary care integrated across primary and community care providers.
3. Developing non-admitted services as a substitute for hospital admission
 - Investment in alternative pathways including expansion of the scope and capacity of the Hospital in the Home and community nursing services.
 - Developing responsive services that facilitate rapid access to specialist consultation and review.



Optimise the distribution of health services

RNS Hospital has experienced greater than expected growth in ED presentations in recent years and is currently operating at peak capacity. Unplanned care is a key driver of hospital activity so increased ED presentations have also meant that admitted services are also operating under increased pressure. This increase in admitted care has flow on effects on outpatient and other non-admitted care, along with clinical and corporate support services such as medical imaging, pathology and operating theatres. The growth in ED presentations and admissions at RNS Hospital includes increased inflows from neighbouring parts of the LHD, particularly the Ryde area, as well as from outside NSLHD.

The increases in demand are also occurring at a time of unprecedented urban growth and consolidation, with changes in the population mix between young families and older people. This growth has been widespread but is particularly noticeable in the catchment of Ryde Hospital.

The opening of the Northern Beaches Hospital, the redevelopment of Hornsby Hospital and the recently announced government investment in Ryde Hospital provide an opportunity to review the role delineation of selected services, identify specific roles for individual hospitals and further develop the concept of NSLHD facilities as an integrated hospital network. The outcome should be an improvement in the distribution of services, such that RNS Hospital is sustainable over the medium term, existing and planned future capacity across the hospital network is fully utilised, services of excellence outside of RNS Hospital are developed and patients have greater access to care closer to home. Redistribution of activity will also offer opportunities for RNS Hospital to identify and plan for the further expansion and development of tertiary and supra-LHD services.

This will require attention to relationships between hospitals as well as between hospitals and their community health services, referral networks and workforce responsibilities. While the focus of redistribution has often been on elective surgery, to have any real impact attention will also need to be paid to the full range of medical, surgical, maternal and community health services. It is noted that any changes in the distribution of activity will need to consider the impact on teaching and training programs.

To optimise the distribution of workload across acute hospitals, NSLHD will focus on

1. Supporting NSLHD hospitals as they develop high quality secondary level services for their catchment population:
 - Service by service review, beginning with RNS Hospital, to identify opportunities for the re-distribution of acute activity. Initial areas for consideration should include management of minor trauma and hip fractures; elective joint replacement; general surgery including cholecystectomy and hernia repair; selected specialty surgery including urology and ENT.
 - Development of innovative models of care that include step-down or repatriation pathways for patients referred for tertiary care but no longer requiring it following intervention. One example is stroke care where RNS Hospital provides hyper-acute stroke care for the district but ongoing acute and rehabilitation care could be provided well in local stroke care units at other hospitals. Consideration should also be given to post-discharge follow up that could be provided locally rather than requiring patients to travel to RNS Hospital.
2. Review of the comparatively large volume of sub-acute care at RNS Hospital to fully understand the profile and needs of this cohort. The review should consider opportunities to increase in-reach and non-admitted sub-acute care at RNS Hospital and models of care that include planned pathways and early referral to Graythwaite rehabilitation service at Ryde Hospital.
2. Considering the development of appropriate non-admitted health services to support the redistribution of admitted care, informed by the district-wide review of non-admitted care.



Realise the benefits of capital investments

NSLHD has had significant capital infrastructure investment over the last decade which has seen most hospitals and many community health centres redeveloped and updated to support the delivery of high quality, innovative and contemporary patient-centred care.

The redevelopment of RNS Hospital in the first instance led to some concentration of secondary level services prior to the enhancement of other hospitals and centres. While major change management programs prepared staff and services for the commissioning of new facilities up until now opportunities have not been fully exploited to expand the capacity and capabilities of local hospitals so that most secondary level care can be provided to local communities in their local hospital.

In addition to the capital redevelopment of hospitals and community health centres, NSLHD has entered into a public-private partnership for the provision of public acute hospital services at the new Northern Beaches Hospital replacing those previously provided by Manly and Mona Vale Hospitals.

The NSW Government recently announced \$479m for the redevelopment of Ryde Hospital, as the last of NSLHD acute hospitals to undergo transformation. Redevelopment of community health facilities in Ryde and Hornsby Ku-ring-gai and improved mental health and drug and alcohol facilities are priorities on the NSLHD Asset Strategic Plan.

NSLHD has had significant capital infrastructure investment over the last decade which has seen most hospitals and many community health centres redeveloped and updated to support the delivery of high quality, innovative and contemporary patient centred care.

To realise the benefits of current and future capital investments NSLHD will focus on

1. Hornsby Hospital

- Making better use of extensive built theatre capacity through re-distribution of appropriate surgical workload across the district with a potential to develop expertise in specific surgical specialities or procedures.
- Capitalising on new imaging services and ambulatory care centre to develop an expanded profile in non-admitted services.

2. Northern Beaches Hospital

- Supporting the Northern Beaches Hospital to progressively scale up clinical services maximising the benefits of this new major hospital for the local population.

3. Mona Vale Hospital

- Scaling the rehabilitation services to meet demand and developing community facing aged care services under the Geriatric Evaluation and Management (GEM) model.
- Building on the new palliative care inpatient unit, in collaboration with the broader palliative care network, to develop integrated services delivered at home, in clinics and in admitted settings.

4. Ryde Hospital

- Planning for the redevelopment of Ryde Hospital with an eye to the future and a clearly defined role in the NSLHD integrated hospital network.
- Ryde Hospital will deliver a broad range of services to meet the growing local health needs, particularly the very young and older population groups, including the development of paediatric, geriatric and general medicine services, along with an identified suite of surgical services, with pathways into rehabilitation.
- Consideration should also be given to consolidation of community-based services on the Ryde Hospital campus to create a single “health hub” for the Ryde area.

5. Community Health

- Planning for the redevelopment of community health centres in Hornsby and Ryde-Hunters Hill.

6. RNS Hospital

- Preparing and positioning for the future expansion of tertiary and supra-LHD services at RNS Hospital.



Develop a platform for innovation and knowledge


NSLHD provides health services in a dynamic and constantly evolving environment. There are increasing demands on the health care system and rapidly changing policy, social and technological trends. Costs of providing care have increased and the need to provide patient-centred, evidence-based and sustainable services has been recognised by all levels of government as well as locally. NSLHD’s priority is the provision of high quality health care, ensuring that consumers – our patients – get the best possible care at the right time. To ensure that this happens, NSLHD must constantly seek to improve services, develop innovative ways of working, and adopt new and emerging technologies.

To ensure that NSLHD stays ahead of the curve in the provision of high value clinical care NSLHD will need to



1. Build on the Network-led operating model – Clinical Network play a key role in establishing and overseeing standards of care, providing leadership in relation to education and research, and providing advice in relation to service development, resource allocation and workforce requirements. Further refinement of the operating model has seen Clinical Networks, hospital and directorate executive teams, and the NSLHD executive team and support functions (quality, finance, workforce, performance, planning, etc.), coming together to develop services and effect desirable improvements and changes. This operating model will continue to evolve and will play a lead role in the implementation, monitoring and evaluation of outcomes associated with the clinical network recommendations outlines in this clinical services plan.

RYDE HOSPITAL IS THE LAST OF NSLHD ACUTE FACILITIES TO RECEIVE SIGNIFICANT CAPITAL INVESTMENT TO SUPPORT THE DELIVERY OF MODERN HEALTH CARE TO ITS POPULATION AND AS PART OF THE NSLHD NETWORK.

2. Improve service integration and partnerships – with increasing specialisation, the presence of multiple providers and funders and jurisdictional boundaries and, in the case of NSLHD, a large number of private providers, patients and referrers often report difficulty navigating services or fragmentation of care across multiple providers. This is particularly relevant to patients who have chronic or multiple health conditions or require complex care. The NSW Ministry of Health has provided \$680,000 recurrent “seed” funding in 2019/20 and 2020/21 for integrated care models across five domains (reducing ED attendance for frequent users, targeted support for residential aged care, community support for vulnerable families, specialist outreach to primary care, and networking of paediatric services for regional patients). In partnership with the Sydney North Primary Health Network, reflecting a broader view of system (as opposed to service) integration NSLHD will initially focus efforts on frail older people through improving support for residential aged care facilities, and specialist support in primary care so that the GP can remain the main coordinator of a patient’s care. Priority enablers to support these approaches, complementing the existing efforts in the development of the Health Contact Centre and Health Pathways, include the development of a comprehensive, searchable and readily updated service directory and an electronic referral tool to facilitate and streamline access to NSLHD services.
3. Define an approach to the adoption of clinical informatics and telehealth platforms – the last five years have been foundational in the establishment of major clinical systems, such as electronic medical records, and health information services have focused on strengthening the core systems and platforms to optimise integration and communication capabilities across NSLHD:
 - › Digitisation of clinical and operational records has been a fundamental precursor to the next stage of evolution in the way that data is used in health care. Data analytics and informatics will combine operational and clinical data to create true clinical and business intelligence systems that will provide a sound basis for evidence-based decision making and the improvement of clinical care. Over the life of this Clinical Services Plan, NSLHD approaches will focus on capturing and delivering useful data and insights to clinicians to inform day to day care and design more effective and efficient systems and models of care. This will encompass improvements in systems for data governance, capture of relevant clinical and operational/ corporate data, ease of access to inform clinical decisions and service design, and interoperability across systems and reports.
 - › Telehealth is not new in NSLHD and a number of clinical networks and services have identified opportunities to augment traditional models of care with virtual capabilities including remote patient monitoring and video consultation services. Telehealth offers the potential to improve both the patient and clinician experience, as well as the quality and cost of care. In many instances approaches to telehealth and related virtual health services in NSLHD have developed in isolation and the full potential of opportunities have not yet been realised. NSLHD will take an enterprise approach to accelerate the development of telehealth services setting out a clear strategy and direction, with leadership and systems that will advance the design and delivery and optimisation our virtual health capabilities.
4. Harness service innovation, research and insights from patient reported outcomes and experience measures – NSLHD has an impressive clinical research record that it is seeking to transform through its soon to be released Research Strategy, and there are numerous initiatives aimed at promoting a culture of innovation across the broader workforce. These include an active innovation program that provides funding for ideas to support frontline staff to improve patient care, including regular pitch events to select projects for ongoing support. There are a significant number of recommendations in this plan addressing areas such as clinical and translational research and clinical trials.



CLINICAL NETWORKS



MATERNAL, NEONATAL AND WOMEN'S HEALTH

7

MATERNAL, NEONATAL AND WOMEN'S HEALTH

7.1 Service Description

Maternal, neonatal and women's health (including gynaecology) services are provided at Hornsby, Northern Beaches, RNS and Ryde Hospitals. Services are provided in admitted, non-admitted and community health settings.

There is a well-functioning Tiered Maternity and Neonatal Network (TMNN) within Northern Sydney and Central Coast and the private hospitals in both Local Health Districts. The TMNN includes processes for consultation, in addition to maternal-fetal medicine and escalation and/or transfer of care. The TMNN provides clinical advice, support and guidance for obstetrics, gynaecology, midwifery and neonatology. There is established clinical governance through committee structure. The NSW Ministry of Health is undertaking a Maternal Transfers project to improve maternal and neonatal transfers across NSW and the ACT.

Maternity care

Maternity care is provided through a variety of service models including:

- › General Practitioner Shared Antenatal Care.
- › Midwifery Group Practice.
- › Admitted antenatal, birth and maternity care.
- › Maternal Fetal Medicine Services (RNS Hospital only).
- › Midwifery in the home postnatal care.
- › Pregnancy Day Assessment Unit (Hornsby, Northern Beaches and RNS Hospitals) for medium to high risk pregnancies.
- › Obstetric medical and midwifery antenatal clinics.
- › Multidisciplinary specialist obstetric clinics.

Neonatal services

Neonatal services include special care nurseries with designated spaces and cots at Hornsby, Northern Beaches and RNS Hospitals. High dependency and intensive care for neonates are provided in the Neonatal Intensive Care Unit (NICU) at RNS Hospital, which also has a supra-LHD role.

Perinatal and infant mental health

Perinatal and infant mental health services are provided by the community-based NSLHD Perinatal and Infant Mental Health Service under the [SAFE START](#) program. Care is provided to families where parental mental illness is impacting on the family's ability to care for their infant (up to two years of age). There are currently no public admitted mother and baby mental health services in NSW. Admitted mental health services that accommodate both mother and baby are available in the private sector (St John of God, Burwood) and the NSW government recently committed to the development of public mother and baby units at Westmead and Royal Prince Alfred Hospitals.

Women's health

Women's Health services are provided at Hornsby, Northern Beaches, RNS and Ryde Hospitals in both admitted and non-admitted settings. Hornsby Hospital provides low to moderate complexity same day and overnight services for planned and unplanned gynaecological procedures. Northern Beaches Hospital has replaced the services previously provided at Manly and Mona Vale Hospitals. RNS Hospital provides low, moderate and high complexity services, including gynae-oncology and complex vaginal and bladder surgery. Ryde Hospital provides low to moderate complexity gynaecological services, and is networked with RNS Hospital.

Other women's health services are provided by NSLHD Primary and Community Health and NSLHD Health Promotion. They include programs to address healthy living, emotional and mental health, violence against women, sexual and reproductive health (including cervical and breast screening, pregnancy, childbirth and parenting), cardiac health, and chronic disease management.

Role levels and resources

Table 12 shows NSLHD maternity and neonatal service capability levels and gynaecology role delineation levels.

Table 12 NSLHD maternity and neonatal service capability levels and gynaecology role delineation levels.

Service	Hornsby	Northern Beaches	RNSH	Ryde
Maternity	4	5	6	2
Neonatal	3	4	5	1
Gynaecology	4	5	6	3

Source: NSLHD Maternal, Neonatal and Women's Health Network 2018 and advice from NSLHD hospitals 2017

Table 13: Maternity and Neonatal Physical Capacity at NSLHD Hospitals

	Hornsby	Northern Beaches Public (Private)	RNSH	Ryde	NSLHD Public (Private)
Maternity beds	16	20 (20)	41	-	77 (20)
Birthing/Assessment	4	5 (5)	11	3	23 (5)
Special Care Nursery (SCN)	8	6 (6)	9	-	23 (6)
NICU	-	-	24	-	24

Source: NSLHD Patient Flow Portal Bed Board and Maternal, Neonatal and Women's Health Network, 2019

Service demand and activity

A total of 9891 babies were born in 2017/18 to residents of NSLHD, a reduction of 5 per cent or 513 births compared to 2013/14; prior to 2017/18 births had been relatively stable from year to year.

There has been some change in trend of where mothers choose to have their babies:

In 2013/14 there was a relatively even split between women choosing to birth in private hospitals (48.7 per cent) and in NSLHD hospitals (47.9 per cent). By 2017/18 larger proportions (51.5 per cent) chose to birth in NSLHD hospitals and fewer (45.5 per cent) in private hospitals (Table 14).

Table 13 describes maternity and neonatal physical capacity at each of the NSLHD hospitals. RNS Hospital has a total of 33 cots in a combined NICU/Special Care Nursery (SCN). Cots are used flexibly depending on patient demand and dependency. Of the 33 cots, 24 are suitably equipped to manage babies requiring intensive care. An average of 21 NICU/SCN cots was occupied in 2017/18.

NSLHD hospitals delivered 5581 babies in 2017/18. This included 490 (8.8 per cent) babies of mother's resident in other local health districts (mainly from neighbouring Western Sydney, Central Coast and Sydney LHDs). Overall births in NSLHD hospitals remained stable, increasing by one per cent (56 births) over the five years between 2013/14 and 2017/18. Most of that activity increase was at Hornsby and RNS Hospitals (Table 15).

In 2013/14, an estimated 29.4 per cent of births in NSLHD hospitals were by caesarean section, increasing to 31.4 per cent in 2017/18. Rates vary between hospitals reflecting caseload complexity and models of care, with 34.4 per cent at RNS Hospital, 27.0 per cent at Hornsby Hospital, 31.6 per cent at Manly/Mona Vale Hospitals, and none at Ryde Hospital.

Table 14: Births to Residents of NSLHD by Hospital Location of Birth (%)

	2013/14	2014/15	2015/16	2016/17	2017/18
NSLHD Public Hospitals	47.9	48.6	50.4	50.6	51.5
Other Public Hospitals	3.4	3.3	2.9	3.1	3.0
Private Hospitals	48.7	48.1	46.7	46.3	45.5
Resident Births	10,404	10,424	10,637	10,515	9,891

Source: Ministry of Health (MoH), Clinical Services Planning Analytics Portal (CaSPA) FlowInfo V18.

Table 15: Births in NSLHD Hospitals

Hospital	2013/14	2014/15	2015/16	2016/17	2017/18	5 Year Change n	%
Hornsby	1,167	1,174	1,190	1,171	1,254	87	7.5
Manly-Mona Vale	1,596	1,605	1,719	1,706	1,541	(55)	3.4
RNSH	2,642	2,647	2,846	2,871	2,699	57	2.2
Ryde	120	130	110	106	87	(33)	27.5
NSLHD	5,525	5,556	5,865	5,854	5,581	56	1%

Source: Ministry of Health (MoH), Clinical Services Planning Analytics Portal (CaSPA) (FlowInfo V18)

7.2 Issues and Opportunities

Framework for maternal services

- A new *National Framework for Maternity Services* is expected to be released in mid-2019, and will be followed by a *NSW Health Maternity Services Plan*. Foreshadowing the anticipated strategic directions of these plans, the Maternal, Neonatal and Women's Health Clinical Network will, in collaboration with primary care providers and community health services, focus on preparation for pregnancy, continuity of care during and after pregnancy, and women's health over the life course. The network will focus specifically on preventive care so that women begin pregnancy in better health. It will also look at optimising early and ongoing management of complications of pregnancy (gestational diabetes, pre-eclampsia, and others), which if not monitored can increase risks of poorer health outcomes in later life.

Maternity care

- The focus of the network in relation to maternity care includes delivering consistent models of care; developing overarching clinical care standards for maternal and neonatal care; increasing the number of women using the Midwifery Group Practice and GP Shared Care models; delivering care close to home with non-complex care delivered in primary and community settings; and providing telehealth consultations and outreach maternal-fetal medicine where appropriate.
- The decrease in residents of NSLHD birthing in private hospitals will require monitoring over the coming years, as it is likely to impact on NSLHD maternity services.
- An increased range of non-invasive prenatal screening tests, including a replacement for amniocentesis, are now offered in the private sector, with tests not yet Medicare-funded. These non-invasive tests have significantly lower risks than amniocentesis, and more women are choosing to undertake genetic screening prior to conception or in early pregnancy. While these tests are requested in primary care, if a test is abnormal and the patient is not privately insured, they are referred to NSLHD for consultation and, if necessary, ongoing care. This requires staff to develop skills in interpreting these tests and providing counselling for women.

- › The Red Cross Blood Bank is advocating testing for fetal Rhesus (RhD) status prenatally. Pregnant women who have an RhD-negative blood type may carry an RhD-positive fetus. The presence of *fetal RhD*-positive cells in the maternal circulation (which can happen at any time during the pregnancy) can cause a mother who is RhD negative to produce anti-D antibodies against the RhD antigen. The current treatment is prophylaxis with anti-RhD immunoglobulin, which can substantially reduce the risk of 'sensitisation' in RhD-negative women and adverse effects on the fetus. Non-invasive prenatal testing of fetal RhD status for all RhD-negative women, could avoid unnecessary treatment with anti-D immunoglobulin.

Northern Beaches Hospital

- › Northern Beaches Hospital opened in October 2018, replacing the maternity, neonatal and gynaecology services previously provided at Manly and Mona Vale Hospitals. The clinical network will work collaboratively with the hospital to support the integration of services within the NSLHD tiered maternal and neonatal service model.

Neonatal Intensive Care and Special Care Nursery Services

- › About 45 per cent of admissions to the NICU at RNS Hospital are from other LHDs. Options to deliver care as close to home as possible, and avoid the need to travel to RNS Hospital for neonatal services, should relieve some of the burden of travel and separation from family for these patients. Fully functioning neonatal services (level 3 at Hornsby Hospital, level 4 at Northern Beaches and Gosford Hospitals) with inreach and telehealth support, staff education and up-skilling from RNS Hospital, would improve local services for families, reduce demand on RNS NICU, and allow the neonatal service at RNS Hospital to fulfil its supra-LHD role.



1,672
babies were cared for in
neonatal intensive care or
special care nurseries across
NSLHD hospitals.

Perinatal and infant mental health

- › Currently NSLHD supports women experiencing perinatal mental health issues through the SAFE START program. Mothers requiring admission for mental health problems during the perinatal period are currently admitted to adult mental health units without their babies, or if they have private health insurance, can choose to be admitted to the mother and baby mental health unit at St John of God Burwood. The NSW Government has identified funding to establish a state-wide public mother and baby mental health unit at a hospital location yet to be decided. NSLHD will continue to advocate for mother and baby mental health care within the district.

Women's health services

- › There are opportunities to further increase breastfeeding rates for women from Aboriginal and Torres Strait Islander and culturally and linguistically diverse (CALD) backgrounds. Women and their babies who present to ED or are admitted to hospital outside of maternity and neonatal services, also need to be supported to continue breastfeeding.
- › There are long waiting times to access urogynaecology clinics in the LHD. A new model of care is under development that will include the development of Health Pathways (an online health information portal for GPs, to be used at the point of care), initial assessment and treatment by GPs, early referral and direct access to a physiotherapist skilled in the assessment, treatment and counselling of women, and if required, further referral within the multidisciplinary team to a urogynaecologist. This model will avoid long waiting times to see an urogynaecologist before accessing appropriate care, and ensure that women can access care as early as possible.
- › Recent changes to the cervical screening program, where the two-yearly Pap smear test has been replaced by a five-yearly human papillomavirus (HPV)-based screening test, has resulted in increased demand for colposcopy and associated gynaecology consultation services. While most of this demand is met by specialist in their private consulting rooms, the Colposcopy Clinic at RNS Hospital has already experienced increased demand in the first year of the new screening program.

7.3 Recommendations

- MN1** Promote and support a preventative and primary health care approach to women's health across the lifespan. This involves improved collaboration with primary care providers, and supporting women to access appropriate clinical advice, consultation and referral for lifestyle risk factors and diseases.
- MN2** Identify and respond to the impact of the new changes in health screening techniques and address the requirements to implement these changes, including demand and consultative follow up services.
- MN3** Develop consistent models of care for maternal, newborn and women's health services across NSLHD. These will include:
- › Delivering services as close to home as possible (outreach maternity services, education and support of staff) within the tiered maternity and neonatal network of Northern Sydney and Central Coast LHDs.
 - › Increasing rates of breast feeding, especially for Aboriginal and Torres Strait Islander, and Culturally and Linguistically Diverse (CALD) women.
 - › Increasing capacity in gynaecology non-admitted care services (including Women's Health physiotherapists, who could be first contact practitioners for women presenting with urinary incontinence and pelvic organ prolapse).
 - › Improving communication and shared care with primary service partners (GPs, community services and non-government organisations) for maternal, neonatal and women's health services.
- MN4** Develop clearly defined pathways and processes for consultation, escalation of care and/or transfer within the tiered maternal and neonatal network.



In 2017/18:

> **9,891**

babies born to NSLHD resident mothers

> **5,581**

babies born in NSLHD hospitals

CHILD YOUTH AND FAMILY HEALTH

8

CHILD YOUTH AND FAMILY HEALTH

8.1 Service Description

The Child, Youth and Family Health Network brings together child and family health, paediatric and youth health service. This includes: child health surveillance and screening services; child protection and developmental disability services; paediatric admitted services; paediatric acute review clinics; and paediatric non-admitted services including hospital in the home; paediatric endocrine services; youth health; and neonatal care (shared with the maternity, neonatal and women's health network).

The age range for child health and paediatric services is defined as from birth to their 16th birthday. The age range for youth health services is 12 to 24 years. Exceptions to these age bands occur depending on the nature of the diagnosis or planned procedure, maturity level of the patient and the wishes of the patient and family.

The provision of services is dependent on the integration with a large number of other providers including other NSLHD services, specialist paediatric services, GPs, the Sydney North Primary Health Network, Family and Community Services, Ministry of Health, and Departments of Education, Planning and Housing, local councils, and the National Disability Insurance Scheme (NDIS).

Community based services

Community based services are provided in child and family health centres across NSLHD, provide universal services such as health and development, vision and hearing surveillance and screening services (including the State-wide Eyesight Pre-schooler Screening for vision [StEPS]) as well as targeted services such as community paediatrics, day stay facilities, extended health home visiting and allied health services (speech pathology, physiotherapy and occupational therapy).

- › Child and family health services are based on a wellness model of care and the principles of health promotion, prevention, early intervention and helping parents learn to care for babies and young children. Child and family health nurses, who are specialists in child health and development and child behaviour, assist families “to be the best parent they can be” and support them in understanding how to maintain their own health. Families attend Child and Family Health Centres for regular Personal Health Record (Blue Book) checks and can track their child's brain, emotional and physical development from birth to five years of age.
- › The NSLHD child protection service offers a range of services to children and adolescents (and their parents/carers) who have experienced emotional, sexual or physical abuse, neglect, or domestic violence.
- › The child development service provides specialist diagnosis and assessment for young children suspected of having a global developmental delay or intellectual disability.
- › The youth health nursing team provides clinical consultancy services for young people aged 12 to 24 years in acute and community settings through age-appropriate assessment, brief intervention and referral, with the aim of reducing hospital admission and improving access to appropriate health care.
- › The Dalwood Spilstead Service provides early intervention, holistic and integrated multidisciplinary health, education and support services for vulnerable families and “at risk” children, who are in stress or experiencing difficulties in the care and parenting of their children in the early years

Hospital based services

Hospital based services are provided at Hornsby, Northern Beaches and RNS Hospitals. Children can also present to the ED at Ryde Hospital, however, where a child's clinical need exceeds the scope of the service available, they are referred to another hospital in the LHD or to a specialist children's hospital. Paediatric services span both medical and surgical health needs in emergency, acute review, non-admitted and admitted services.

- Paediatric wards provide care for children who require admission to stay in hospital for observation or treatment for part or whole of their recovery from injury or illness.
- Paediatric Hospital in the Home (HITH) provides acute, sub-acute and post-acute care to infants, children and young people as a substitution for, or prevention of, in-hospital care. Care may be provided at home or in hospital or community clinics, schools or workplaces.
- Paediatric Acute Review Clinics provide non-admitted clinical care for children who are acutely unwell, have chronic and complex conditions that require specialist care, or for general paediatric conditions requiring specialist paediatric assessment.
- Paediatric non-admitted clinics provide care for children who require ongoing review or management of non-acute or post-acute conditions. These include general paediatrics, as well as sub-speciality clinics in paediatric endocrinology, burns and allergy at RNS Hospital, and healthy weight management at Hornsby Hospital.

Allied health services

Allied Health services include specialist admitted, and specialist and generalist non-admitted clinics, and community services.

- Paediatric community-based allied health clinicians work jointly with child and family health nurses and community paediatricians to provide services across the LHD.
- At RNS Hospital paediatric allied health services are provided in the child and adolescent unit, neonatal intensive care and special care nurseries and non-admitted clinics.
- Hornsby Hospital provides non-admitted and community-based allied health services along with in-reach into the paediatric ward and special care nursery.

8.2 Issues and Opportunities

Youth health

- Young people experience a range of health and wellbeing issues that are distinct from those of younger children and the adult population. Young people experience physical, emotional, cognitive and social development throughout adolescence and early adulthood which influences their behaviours, feelings, impulses, sense of self, relationships and resilience. Increased risk taking, experimentation, independence and engagement beyond family are also important and normal aspects of adolescent development. These factors can affect health and wellbeing, health choices and can increase risks of harm.
- The population of young persons aged 17-24 years is projected to grow 1.1 per cent per year across NSW. There is some variation between sectors with Hornsby experiencing the slowest growth and Ryde Hunters-Hill the greatest. The development of the NSW Youth Health Service, guided by the directions and priorities set out in the [NSW Youth Health Framework 2017-24](#), will address the diverse health needs of young people, including those who are vulnerable, earlier and prevent chronic and serious health concerns from developing. A comprehensive and robust youth health model of care would include a dedicated community-based service that provides multidisciplinary primary health care, specialist adolescent/young adult admitted patient resources to support developmentally appropriate acute care for young people with complex presentations, and non-admitted and transition care services for young people with chronic illness conditions.

Childhood obesity

- Childhood obesity is a chronic and complex condition that requires a multidisciplinary approach over a prolonged period to address the associated psychological, social and health issues. The management of children and families with obesity includes access to general paediatric services, respiratory and sleep medicine, endocrinology, psychology and allied health services as well as gastroenterology and orthopaedics.

- › One of the NSW Premier's Priorities is to [reduce overweight and obesity rates of children by five percentage points by 2025](#). In NSLHD it is estimated that 26,500 or one in five children aged five to 17 years are overweight or obese. To address this, all children who come into contact with NSW Health facilities, including admitted, non-admitted and community settings, are now required to have a [Routine Growth Assessment](#). Routinely measuring a child's height/length and weight allows staff to identify when a child is above (or below) a healthy weight, offer parents/carers brief advice, and if appropriate, refer the family to a secondary or tertiary weight management service.
 - › The NSLHD Health Promotion service provides a range of population level healthy weight management campaigns and programs. The Hornsby Healthy Kids (HHK) program provides one of only a few secondary level child weight management services outside Sydney Children's Hospitals Network in NSW. The HHK clinic has capacity to provide a service for families in the Hornsby Ku-ring-gai area and similar secondary health weight management services are required for families in the Northern Beaches, Lower North Shore and Ryde areas.
- Acute paediatric care**
- › In 2017/18 an estimated 50,402 children aged 0-15 years presented to NSLHD EDs, a 9.0 per cent increase since 2014/15. This increase in demand is particularly noticeable at RNS Hospital (where the increase was almost 19 per cent) and for children and young people presenting with mental health issues. The increased rate of ED presentations has placed additional pressure on ED and paediatric admitted services. In 2017/18 there was an estimated 6,612 episodes in admitted paediatric services, an increase of 10 per cent since 2013/14. Similar to the growth in ED, RNS Hospital experienced growth of over 18 per cent in admitted episodes. To manage the increased demand, new models of care need to be developed or expanded, particularly in the non-admitted care setting (for example acute review clinic, hospital in the home).
 - › Ryde Hospital saw a total of 4,044 children presenting to its ED in 2017/18, an increase of 4.0 per cent since 2013/14, reflecting the population growth and demographic changes in the surrounding area. The physical design of the ED is not ideally suited for the care of children and families. The Paediatric Visiting Medical Officer (VMO) model and the absence of paediatric admitted or non-admitted services at Ryde Hospital means that there are inequities in access to paediatric care for the local population, and families often need to travel to other NSLHD hospitals for care. Consideration needs to be given to the redesign of the physical space in ED and to the development of non-admitted paediatric services to meet the needs of the growing paediatric population in the Ryde hospital catchment.
 - › The Child Youth and Family Health Clinical Network, in collaboration with acute hospitals and community health services, has made significant progress in establishing non-admitted models of care including short stay, Hospital in the Home, acute review clinics, and other clinics or services. In 2017/18 approximately 17 per cent of acute episodes were managed under the Paediatric Hospital in the Home model. Further development of these models remains a priority along with exploration of post-operative surgical models of care and paediatric dermatology services to reduce hospitalisation and readmission.
 - › Opportunities to improve paediatric services have been identified following a joint assessment of services, by the Child Youth and Family Health Network and the NSW Ministry of Health, against the [NSW Paediatric Service Capability Framework](#) (the "Framework") and the accompanying [Toolkit](#). The Framework supports NSLHD services in the delivery of paediatric short stay and acute review services; close observation capability in paediatric wards; emergency surgery for children; paediatric clinical emergency response system; involvement of paediatricians in the care of children in NSW hospitals; requirements for child friendly and child safe health facilities; and children and young people in paediatric services requiring mental health care.

One of the NSW Premier's Priorities is to reduce overweight and obesity rates in children by five percentage points by 2025.

Non-admitted paediatric models of care, including acute review outpatient clinics and Hospital in the Home services, are being developed.

Child and family health community services

- › Child and family health services have been providing care for families for over 100 years and during this time service models have evolved and changed in response to community needs and consumer expectations. Updated communication options and the development of a Centralised Intake System could further improve access and service responsiveness.
- › Increasing understanding and awareness of child and family health services among clinicians, such as those in the EDs, could assist in the development of referral pathways for children/families who could be managed in the community through child and family health universal services, avoid hospital admission, for example, those who require breastfeeding support or crying and settling management of infants.
- › The provision of services outside child and family health centres could raise the service profile and increase, not only utilisation, but the opportunities for families to discuss concerns allowing for early identification and implementation to support children to be ready for school.
- › In 2019 NSW Health released [The First 2000 Days Framework](#), a strategic document outlining the importance of the first 2000 days of a child's life from conception to five years of age, and the actions required to ensure all children have the best possible start in life.

National Disability Insurance Scheme (NDIS)

- › The [National Disability Insurance Scheme \(NDIS\)](#) was initiated in 2016 by the Australian Government for Australians with moderate to severe disabilities, including people with intellectual, physical, sensory and psycho-social disabilities. The NDIS can pay for reasonable and necessary support services that relate to a person's disability and are required for them to live a normal life and achieve their goals. The [Cerebral Palsy Alliance Australia](#) now provides a single point of contact in NSLHD to support and guide families in NDIS access requests and application processes for children aged under seven years (children over seven years will follow the same process as adults). Further work is required at the interface between disability and health services to resolve who should most appropriately provide specific services or equipment.

Out of home care (OOHC)

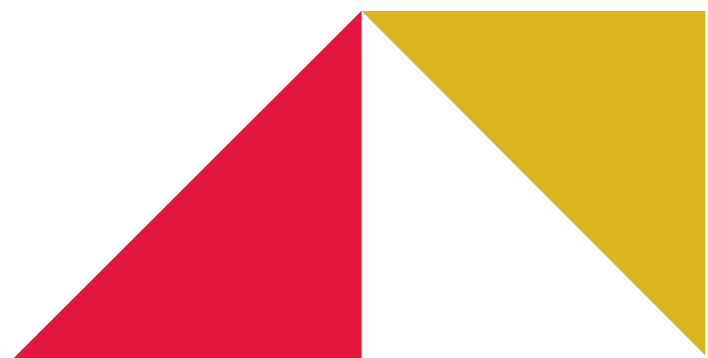
- › The NSW Government [Keep Them Safe - a shared approach to child wellbeing Action Plan 2009-2014](#) requires that all children and young people entering out of home care receive a comprehensive multidisciplinary health and developmental assessment within 30 days. The Out of Home Care Coordinator in NSLHD facilitates and manages this assessment process using the agreed model pathway. This particularly vulnerable population requires a high profile to maintain focus on continually improving services to meet their needs and reduce their vulnerability.

Violence, abuse and neglect (VAN)

- › In 2016/17, nearly 120,000 children in NSW were reported to the child protection helpline, of which 72 per cent were at risk of significant harm. Domestic violence is a contributor of ill health and premature death for women aged between 15 and 45 years. Women experiencing domestic and family violence may also experience increased risk of self-harm; greater likelihood of having low birth-weight infants; increased rates of pre-term delivery and miscarriage, and health costs that are 20 per cent higher than for those who have not experienced abuse.
- › Child and family health nurses are well placed to identify children at risk of harm and to undertake [Domestic Violence Routine Screening](#) to create a safe and confidential environment for facilitating disclosure, and to offer support, interventions and referral to relevant services.

Social media, technology and child health

- › Emerging evidence about the positive and negative impact of social media on child and adolescent development (physical, emotional and mental) exists in international literature. The impact on child health development and wellbeing in NSLHD is being seen by paediatric, emergency, mental and allied health clinicians. This potential has wide-reaching implications for child development and long-term health concerns in adulthood.



8.3 Recommendations

- CF1** Develop a comprehensive NSLHD youth health service response to address the specific and unique health needs of the vulnerable population of young people aged 12 to 24 years, including community-based multidisciplinary youth health service, adolescent/young adult admitted patient service, non-admitted and transition care services for young people with chronic illness conditions.
- CF2** Develop and implement strategies for the prevention, early intervention and management of childhood and adolescent obesity across NSLHD including consideration of obesity management clinics; support for breastfeeding; access to general paediatric, respiratory and sleep medicine, endocrinology, psychology and allied health services as well as gastroenterology and orthopaedic services.
- CF3** Meet the performance targets for the implementation of the Routine Growth Assessments of Children across NSLHD.
- CF4** Develop, implement and evaluate strategies and models of care to better respond to the increasing demand for mental health services for children and young people presenting to the ED, admitted to the paediatric ward or accessing child and family health services.
- CF5** Evaluate performance against the Out of Home Care (OOHC) Health Pathway and NSLHD performance agreement, and identify and implement strategies and consider alternative models of care, including multidisciplinary team assessments that will strengthen and consolidate business processes, clinical referral pathways, and partnerships with other service providers in providing a health care pathway for children and young people entering OOHC.
- CF6** Develop and expand hospital-in-the-home and integrated paediatric non-admitted care services, including acute review clinics, to support “care for children as close to home as possible” and manage the increasing demand for acute paediatric services.
- CF7** Improve ease of access for consumers and streamline pathways to primary, secondary and tertiary child and family health services, including consideration of a single point of entry.
- CF8** Improve collaboration with other service providers to reduce the number of children starting school with identified vulnerabilities.
- CF9** Improve developmental services including developmental surveillance and partnerships with NDIS providers.
- CF10** Develop and implement plans to address the outcomes of the *NSW Paediatric Services Capability Framework* in NSLHD, in particular develop a business plan for services required for infants, children and young people at Ryde Hospital.
- CF11** Develop and implement strategies to improve identification of domestic violence and referral to services that supports the Premier’s Priority.
- CF12** Develop strategies to address the impact of social media and technology on child and adolescent development, health and wellbeing including physical, emotional and mental health.
- CF13** Review current models of care for child and family health services and develop innovative models of service delivery to meet the changing needs of families in NSLHD in particular for families and children with developmental vulnerabilities, including communication strategies to improve awareness of and advocacy for child and family health services to internal and external stakeholders, and models incorporating a multidisciplinary response.
- CF14** Explore opportunities to integrate telehealth into the care of children and families in their home or in the community.
- CF15** Implement the requirements of the NSW Health “*The First 2000 Days Framework*”.

THE NSW HEALTH “FIRST 2000 DAYS FRAMEWORK” OUTLINES THE IMPORTANCE OF THE FIRST 2000 DAYS OF A CHILD’S LIFE FROM CONCEPTION TO FIVE YEARS, AND THE ACTIONS REQUIRED TO ENSURE ALL CHILDREN HAVE THE BEST START IN LIFE.

ACUTE AND CRITICAL CARE MEDICINE

The Acute and Critical Care Medicine Network encompasses services in:

- › Emergency Medicine, including Emergency Department short stay units (EDSSU)
- › Intensive Care
- › General Medicine, including Medical Assessment Units (MAU)
- › Acute Medicine in the sub-specialties of:
 - › Gastroenterology and endoscopy
 - › Hepatology
 - › Infectious diseases
 - › Immunology and allergy
 - › Dermatology

9

EMERGENCY MEDICINE

9.1 Service Description

ED services are provided at four acute hospitals in NSLHD with a level 6 service at RNS Hospital, level 4 at Hornsby Hospital, and level 3 at Ryde Hospital. The new Northern Beaches Hospital provides a level 5 ED service, replacing the level 4 services previously provided at Manly and Mona Vale Hospitals. An urgent care centre opened at Mona Vale Hospital in late 2018.

- › Each ED has a Short Stay Unit (EDSSU) located in close proximity to the ED providing care for up to 24 hours.
- › Each ED has access to Computed Tomography (CT) and/or Magnetic Resonance Imaging (MRI). At RNS and Northern Beaches Hospitals both CT and MRI scans are available 24/7. Hornsby and Ryde Hospitals have 24/7 access to CT only. As part of the stage 2 redevelopment of Hornsby Hospital, the medical imaging service will include additional CT capacity and MRI capabilities.
- › At Ryde and Hornsby Hospital EDs, allied health services are available during business hours but not overnight or at weekends. Allied health staff (apart from Aged Care Services in Emergency Teams (ASET)) are not specifically allocated to ED so availability depends on workload elsewhere in the hospital, and in some instances, is not sufficiently experienced to respond to the often complex ED patient needs. In RNS Hospital ED there is a seven day extended hours' primary care physiotherapy service and social work is available during standard business hours and on-call after hours.

Private emergency medicine services

Private emergency medicine services available in the Northern Sydney catchment include:

- › ED at Sydney Adventist Hospital in Wahroonga.
- › Walk-in Specialist Emergency (WiSE) Clinic in Macquarie Park close to the university and business hub.
- › Smartphone app "My Emergency Doctor" which allows patients to access emergency video consultation for common conditions and injuries, including prescriptions, x-ray and pathology referrals.

Alternatives to ED

Health care advice and treatment can be accessed via:

- › Health Direct Australia (1800 022 222) offers fast and simple expert advice on any health issue and what to do next for people with non-life-threatening health needs who do not require immediate medical attention. The 24/7 phone advice line can also help people find and access local after-hours health services and pharmacies.
- › Extended Care Paramedics (ECP) are deployed by the NSW Ambulance service in response to 000 calls to treat patients with minor illnesses and minor injuries and provide definitive care and referral to community-based health services. Appropriate presentations include minor allergic reactions, asthma, back pain, mammal bites, minor burns, catheter problems, dislocations, falls in the elderly, urinary retention or infections and wounds.

Service demand and activity

Almost 220,000 patients (598 per day) passed through NSLHD EDs in 2017/18. ED presentations in NSLHD increased by almost 26,000 (13 per cent) over the five years between 2013/14 and 2017/18. Over two-thirds of this increase occurred at RNS Hospital

(presentations increased by 25 per cent, double the other hospitals' growth). Hornsby Hospital has also experienced an 11 per cent growth over the same time period, significantly higher than the underlying population growth. Non-ambulance arrivals, that is patients who walked in or self-presented, comprised 88 per cent of the increase in demand.

Table 16: NSLHD ED Presentations by Hospital and change from 2013/14 to 2017/18

	2013/14	2014/15	2015/16	2016/17	2017/18	Change n	Change %	Change of %	% of Total
Hornsby	36,577	37,867	37,741	39,379	40,760	4,183	11%	19%	16%
Manly	24,843	24,546	24,142	24,580	25,507	664	3%	12%	3%
Mona Vale	33,048	33,851	34,420	35,035	34,894	1,846	6%	16%	7%
RNSH	71,669	75,483	79,447	83,618	89,365	17,696	25%	41%	69%
Ryde	26,396	27,103	26,985	26,519	27,741	1,345	5%	13%	5%
NSLHD	192,533	198,850	202,735	209,131	218,267	25,734	13%	100%	100%

Source: NSLHD Report Central ED Explorer Report

9.2 Issues and Opportunities

Challenges for NSLHD EDs are associated with the continued growth in ED presentations and achievement of the Emergency Treatment Performance (ETP) target. The introduction of an urgent care centre at Mona Vale Hospital will also require close monitoring and refinement of the model of care as the service develops.

Since 2012 NSW Health has set an ETP target for EDs to discharge or admit 81 per cent of patients within 4 hours of presentation. The target varies from 75 per cent at RNS Hospital to 80 per cent at Hornsby Hospital, 83 per cent at Ryde Hospital and 84 per cent at Northern Beaches Hospital. Since 2012 there has been an improvement in ED waiting times in NSLHD hospitals with all patient triage categories being seen in clinically appropriate times. However, NSLHD has been unable to consistently achieve more than 70 per cent ETP over the 12 months to May 2019 despite considerable and persistent efforts at individual hospitals.

Opportunities to ensure the delivery of safe and cost-effective care that is satisfactory to both patients and staff will need to focus on:

Effectiveness and efficiency within the ED

- Early senior review to reduce crowding in ED and improve clinical outcomes: There is considerable variation between hospitals according to the availability of senior staffing, time of day, patient acuity and workload factors. Key barriers to the provision of consistent early senior review include the shortage of middle grade doctors (reduced numbers entering emergency medicine training programs), inadequate training and experience of middle grade doctors in some district hospitals, and the diversion of senior and middle grade doctors to tasks more appropriately carried out by other clinical or administrative staff.
- Appropriate workforce skill mix includes: scribes, surgical dressers, communication clerks, physiotherapist, social workers, IV technicians and nurse practitioners to support the medical and nursing teams to provide efficient and effective care. This will become more important as the medical workforce challenges deepen.
- Better alignment of important hospital services with periods of known higher ED demand has the potential to improve ED throughput including: after-hours MRI and reporting; specialist teams' responsiveness and admission acceptance practices; and on-call after-hours availability of essential allied health services including physiotherapy practitioners, pharmacy, social work, and associated support services such as ASET.

Options for the disposition from ED

- › Improved access to non-admitted specialist services for hand injuries, transient ischaemic attack (TIA), moderate risk chest pain, concussion and other similar conditions as well as the establishment of the Paediatric Acute Review Clinics has allowed ED physicians to confidently and safely discharge patients knowing that patients can be followed up in a timely manner. Hospital in the Home and community-based services can also provide ongoing care rather than admitting to wards.
- › Improving options for the care and management of patients with acute behavioural disturbance who often require sedation and close monitoring before being discharged within 24 hours. Many of these patients have drug-related, self-harm, or psychosocial problems often with coexisting mental health, and medical problems; currently these patients remain in unsuitable accommodation in ED as they are not generally suitable for admission to EDSSU, Medical Assessment Unit (MAU), Psychiatric Emergency Care Centre (PECC) or medical/surgical wards.
- › Improved understanding of patient flow and discharge practices across whole of hospital to better match capacity with demand, consideration of “specialty home wards” or the identification of “flow beds” on each ward to better manage surges in admissions from ED.

Diversion of non-tertiary activity from RNS Hospital

- › Continued diversion of non-time critical patient transports from RNS Hospital to Ryde Hospital.
- › Making better use of the ED at Ryde Hospital for appropriate patients such as those requiring identified surgical interventions (to be determined in collaboration with the Surgery and Anaesthesia Network), patients with single site injuries or where the ensuing care is likely to require rehabilitation services.
- › Improving confidence and clarity for patients and GPs in the range of services offered and capabilities of Ryde Hospital.



EMERGENCY DEPARTMENT PRESENTATIONS IN NSLHD INCREASED BY ALMOST 26,000 (13%) OVER THE FIVE YEARS BETWEEN 2013/14 AND 2017/18.

Reducing demand for ED services

- › Aged care services along with Primary and Community Health have developed services that aim to reduce the number of patients requiring transfer from their RACF to ED for assessment.
- › Identifying alternative pathways to care before patients require ED services:
 - › Other models such as Hospital in the Home, rapid access review clinics and tele-health advice can offer opportunities to avoid ED presentation with appropriate pathways directly to these services to ensure patients receive the right care at the right time.
 - › Under current arrangements, access to urgent specialist review, such as orthopaedics, requires the patient is first triaged and assessed in ED; there are opportunities to consider alternative pathways that facilitate access to specialist care without the need to first attend ED.
 - › Development of non-admitted care pathways for predetermined or low acuity conditions that would be better managed with early direct access to specialist services rather than in the ED, for example Early Pregnancy Assessment Services and chronic or complex wound clinics and services.

9.3 Recommendations

- AC1** Improve efficiency, outcomes and patient experience in the ED with:
- › Consistent early senior review and decision making.
 - › Use of appropriate workforce skill mix including; scribes, surgical dressers, communication clerks, physiotherapist, social workers, IV technicians and nurse practitioners for appropriate patient cohorts.
 - › Better access to Magnetic Resonance Imaging (MRI), particularly at weekends and after hours at Hornsby and Ryde Hospitals.
 - › Appropriate accommodation and consistent pathways for the care of behaviourally disturbed patients.
- AC2** Expand options for the disposition from ED of non-admitted and admitted patients:
- › Improve pathways for admission avoidance such as Hospital in the Home, and non-admitted services such as acute review, follow up, rapid access and other specialist care.
 - › Work with the whole of hospital to shorten patient waiting times in ED following decision to admit. (This includes better understanding of patient flow and matching capacity to demand patterns across short stay units, wards and hospital substitution services.)
- AC3** Review the ambulance matrix in collaboration with the NSW Ambulance Service to identify opportunities to reduce the burden of non-tertiary activity at RNS Hospital and redistribute to other hospitals in NSLHD.



ALMOST 220,000 PATIENTS (598 PER DAY) PRESENTED TO NSLHD EMERGENCY DEPARTMENTS IN 2017/18.

10

INTENSIVE CARE

10.1 Service Description

Service, network and role delineation

Intensive care services for adults are provided at Hornsby, Northern Beaches, RNS and Ryde Hospitals. Children requiring intensive care services are transferred to one of the specialist children's hospitals.

The role of the individual units is determined by the range and specialty services provided by the hospital:

- › RNS Hospital provides services at level 6 with collocated cardiothoracic, neurosurgical and general intensive care services, fulfilling its role in the provision of supra-LHD services for severe burn injury, major trauma and spinal cord injury, and other tertiary services for NSLHD.
- › Hornsby and Northern Beaches Hospitals are designated at level 5. The new Northern Beaches Hospital replaces the services previously provided at Manly and Mona Vale Hospitals.
- › Ryde Hospital is currently being upgraded to a level 4 service reflecting the changed definitions and standards set out in the revised [NSW Health Guide to the Role Delineation of Health Services](#). While there is no immediate change in the type of patient or care provided, this upgrade will facilitate the development of services to meet the needs of the local population into the future.
- › Within NSLHD the intensive care units work as a network so that patient care can be escalated to a higher level service that meets clinical needs. Hornsby Hospital is the default or preferred unit for patients who require a higher level of care than is available at Ryde Hospital while RNS Hospital accepts referrals for patients requiring more complex care from Hornsby, Northern Beaches and Ryde Hospitals.

Resource distribution

NSLHD has a total of 96 intensive care unit beds (Table 17). Beds are notionally designated as high dependency (HDU) or intensive care (ICU) beds: at Ryde Hospital the 6 ICU beds are complemented by 9 coronary care beds in a combined unit. The intensive care bed capacity across NSLHD hospitals forms part of the supra-LHD ICU bed base and may be required to accommodate critically ill patients from other parts of NSW when there is increased demand.

The number of ICU/HDU beds varies depending on patient demand and acuity, management of capacity across seasons and days of the week, and allocated budgetary resources (Table 17). There is sufficient physical capacity across NSLHD units to accommodate anticipated growth in demand for several years to come with commensurate step-change increases in resources.

INTENSIVE CARE SERVICES FOR ADULTS ARE PROVIDED AT HORNSBY, NORTHERN BEACHES, ROYAL NORTH SHORE AND RYDE HOSPITALS. CHILDREN REQUIRING INTENSIVE CARE SERVICES ARE TRANSFERRED TO ONE OF THE SPECIALIST CHILDREN'S HOSPITALS.

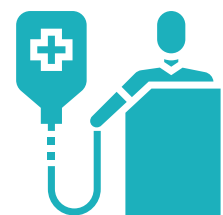


Table 17: Physical, Funded and Utilised ICU beds

	Hornsby	Northern Beaches	RNSH	Ryde	NSLHD
¹ Physical capacity	12	20 (10 private)	58	6	96
² Funded capacity 2018/19	6-8	n/a	38	4	48-50
³ Beds Utilised 2017/18	5.6	n/a	38.4	4.1	48.1
Beddays 2017/18	2,040	3,340	14,020	1,509	20,909
Patient Stays 2017/18	629	1,180	4,758	630	7,197

Source and Notes:

1 NSLHD Patient Flow Portal Bed Board and Northern Beaches Hospital Departments by Floor, accessed June 2018

2 Advice from ICU Clinical Directors and Nurse Manager/NUM, accessed April 2019

3 NSLHD Report Central Admitted Patient Dataset (Ward Stay), accessed February 2019

10.2 Issues and Opportunities

Ryde Hospital ICU

In 2016, Ryde Hospital high dependency unit (HDU) participated in the [Agency for Clinical Innovation \(ACI\) Intensive Care Model](#) project to meet the clinical safety and quality requirements to upgrade to a level 4 Intensive Care Unit. Since the project commenced in 2017/18, significant progress has been made in achieving the standards including, but not limited to:

- Networked arrangements with a higher level intensive care.
- Improved after hours medical cover with credentialed airway and vascular access skills.
- Recruitment to the Clinical Director position with responsibilities for unit leadership and governance.
- Standard operating procedures for multidisciplinary team patient review and handover.
- Regular mortality and morbidity reviews.
- Structured education and training program for nursing staff with clinical rotations to Hornsby Hospital, and access to clinical educators.

Networking and inter-hospital transfers

Significant work has been completed and a formal networking arrangement is in place to manage care escalation and inter-hospital transfers between Ryde, Hornsby and RNS Hospitals as appropriate.

Further consultation and agreement will be required to include the Northern Beaches Hospital in this guideline.

Managing increasing demand

All ICUs will be required to respond to increases in the volume of planned and unplanned surgical activity and increasing complexity of unplanned medical admissions that will occur at each hospital. At Hornsby Hospital this is particularly relevant with the surgical theatres and ED being expanded as part of the Hornsby Hospital redevelopment. It is expected there will be an increase in demand for the ICU over the next five years.

The ICU Network will support collaboration on key issues and promotion of sustainable and effective staffing and clinical models of care in relation to the changing demands.

10.3 Recommendations

- AC4** Finalise and operationalise the provision of level 4 ICU services at Ryde Hospital.
- AC5** Develop standard operating procedures for the dynamic management of intensive care nurse staffing levels.
- AC6** Develop standard operating procedures for the management of inter-hospital intensive care patient referrals.

NSLHD has 96 built intensive care beds with sufficient capacity across all ICUs to accommodate anticipated growth in demand for several years to come.

11

GENERAL MEDICINE

11.1 Service Description

General Medicine services are provided in Hornsby, Northern Beaches, RNS and Ryde Hospitals with role levels determined by the range and specialty services provided by the hospital. RNS Hospital provides a level 6 service, Northern Beaches level 5, Hornsby level 4 and Ryde level 3.

While patients admitted under General Medicine are admitted to different wards in each hospital, a significant proportion are admitted to Medical Assessment Units (MAU). MAUs were originally established in NSW in 2008 to deliver faster, safer and better care for patients who are elderly and/or have chronic or complex but stable medical conditions, who require detailed investigation, observation and/or definitive treatment. Designed as an alternative to treatment in ED and to eliminate long waits, it was anticipated that these short stay units (24-48 hours) with a dedicated consultant led multidisciplinary team would improve care coordination and improve patient flow across the hospital. MAUs have been established at each of the acute hospitals in NSLHD although the location, governance and operation of each one varies.

11.2 Issues and Opportunities

General medicine as a sub-speciality

With increasing sub-specialisation there has been a renewed focus on the development and provision of General Medicine services across the NSW health system in response to the large number of older patients who often present with undifferentiated and ambiguous conditions, frequently complicated by complex, chronic and multisystem problems.

General Medicine services are able to provide and coordinate patient care across multiple medical, nursing and allied health disciplines and teams and across acute and primary care settings. Specifically services can:

- Work alongside other specialists so that the combination of the breadth of General Medicine with depth of sub-specialty services delivers the best care to patients.
- Work alongside emergency physicians to fast track and coordinate care from the initial presentation.
- Support GPs and other primary care providers following discharge from acute care, or when there are diagnostic issues, or acute or complex management needs, beyond the capability of the GP.

Care under General Medicine is ideal for patients whose care does not fall specifically within the domains of single-organ sub-specialty services and where integration of multidisciplinary expertise may be required. Patients suitable for admission under general medicine include:

- Complex pathology/symptomatology where a definitive single system diagnosis cannot be determined following investigation or where multiple diagnoses can be determined.
- Multi-system complex disease where the patient is not suitable for sub-speciality or aged care admission.
- Common conditions that do not require admission under a sub-specialty, for example dehydration, sepsis/pyrexia of unidentified origin, envenomation, below knee deep vein thrombosis.

Academic general medicine unit

The establishment of a General Medicine Academic Unit, initially identified in the 2015-2022 Clinical Services Plan, remains a priority. A first for NSW, the academic unit would provide clinical leadership, direction and research for the ongoing development of acute medicine services and further development of medical short stay units across NSLHD. It is anticipated that the development of an academic unit would improve the provision of evidence-based interventions, reduce unwarranted clinical variation, support the operation of efficient MAU, and result in decreased lengths of stay and better patient outcomes.

While the scope and reach of the General Medicine Academic Unit would extend across all NSLHD hospitals it would be ideally placed at Ryde Hospital, supporting the large proportion of patients who are admitted under General Medicine rather than under sub-specialty services.

11.3 Recommendations

- AC7** Establish a General Medicine Academic Unit at Ryde Hospital to support the development of General Medicine and Medical Assessment Unit (MAU) services across NSLHD hospitals.

CARE UNDER GENERAL MEDICINE IS IDEAL FOR PATIENTS WHOSE CARE DOES NOT FALL SPECIFICALLY WITHIN THE DOMAINS OF SINGLE-ORGAN SUBSPECIALTY SERVICES OR WHERE INTEGRATION OF MULTIDISCIPLINARY EXPERTISE MAY BE REQUIRED.

12

GASTROENTEROLOGY

12.1 Service Description

Gastroenterology and endoscopy services are provided at each of the acute hospitals in NSLHD. Secondary level services are provided at Hornsby (level 4) and Ryde (level 3) Hospitals while secondary and tertiary services are provided at RNS Hospital (level 6). The new Northern Beaches Hospital (level 5) provides a comprehensive range of services at a higher level than previously provided at Manly and Mona Vale Hospitals (level 4).

- › Routine diagnostic and therapeutic endoscopy and colonoscopy services are provided at all hospitals with more complex patients referred to RNS Hospital.
- › Acute gastrointestinal bleeding services are provided at each hospital with gastroenterologists participating in general medical or sub-specialty on-call rosters.
- › Endoscopic retrograde cholangio-pancreatography (ERCP) is provided at RNS Hospital with referral pathways from other NSLHD hospitals.
- › RNS Hospital provides comprehensive physiology measurement services including pH testing, oesophageal and ano-rectal manometry, as well as endoscopic ultrasound, balloon and push enteroscopy, percutaneous endoscopic gastrostomy (PEG) placement and luminal stents.
- › Stoma-therapy services are provided at RNS Hospital; parenteral nutrition services are provided at each hospital in collaboration with pharmacy services.

Services are provided predominantly in admitted settings; endoscopy services are provided in both admitted and non-admitted settings. Non-admitted services are provided at RNS Hospital while follow up services for patients discharged from Hornsby and Ryde Hospitals are provided from specialist private rooms.

12.2 Issues and Opportunities

Access to care

Gastroenterology non-admitted clinics are provided at RNS Hospital while follow up services for patients discharged from Hornsby and Ryde hospitals are provided from specialist private rooms.

- › The number of patients and waiting times for non-admitted clinic appointments at RNS Hospital are increasing and due to the high demand, a significant proportion of non-urgent patients are not seen within the clinically recommended waiting times.
- › There can also be some delays in accessing admitted patient endoscopy services in Hornsby and Ryde Hospitals for patients who require investigation for gastrointestinal bleeding depending on scheduling of Visiting Medical Officers and to procedure room/operating suite resources.

Bowel cancer screening

Australia has a high incidence of bowel cancer. The Cancer Institute NSW has developed a comprehensive approach to the prevention and screening, early detection, assessment and diagnosis, and treatment and survivorship of bowel cancer. [The National Bowel Cancer Screening Program](#) commenced in 2006 and NSLHD has responded with the provision of diagnostic colonoscopy services, prioritising patients with a positive Faecal Occult Blood Test (+FOBT) so that they are followed up quickly.

The [NSW Health Leading Better Value Program](#) includes a new initiative to provide direct access to colonoscopy for patients with a +FOBT. The project aimed to reduce time from referral to procedure, reduce duplication of referrals across specialties and LHDs, manage demand for non-admitted appointments, and improve cancer treatment options and surveillance. The project includes standardisation of a health pathway and referral process, and phone screening to identify patients suitable to proceed directly to colonoscopy and bypassing non-admitted clinics. Early work on this project commenced in 2018/19 and it will be implemented in 2019/20.

12.3 Recommendations

- AC8** Review the arrangements for the provision of admitted patient endoscopy services in Hornsby and Ryde Hospitals and ensure appropriate and timely cover is provided.
- AC9** Develop the gastroenterology non-admitted services offered at RNS Hospital and explore opportunities for the roll-out of satellite or dedicated clinics at Hornsby and Ryde Hospitals.
- AC10** Develop an expedited colonoscopy service for patients with positive (+FOBT) at suitable hospitals across NSLHD.



**THE DIRECT ACCESS COLONOSCOPY PROJECT
AIMS TO REDUCE THE LENGTH OF TIME BETWEEN
REFERRAL AND PROCEDURE FOLLOWING A POSITIVE
BOWEL CANCER SCREEN.**

13

HEPATOLOGY

13.1 Service Description

Hepatology and other liver disease services are predominantly provided at RNS Hospital with a small hepatic clinic at Hornsby Hospital, caring for patients with viral liver disease (hepatitis C and B), cirrhosis, hepatoma (primary liver cancer), and non-viral liver conditions such as non-alcoholic fatty liver disease (NAFLD), autoimmune and metabolic disorders, and liver enzyme derangements.

- › Patients with cirrhosis, hepatic decompensation or hepatitis B/ human immunodeficiency virus (HIV) co-infection are reviewed and managed by the specialist service which encompasses medical, nursing, dietetic and counselling services. Remote hepatology consultation services support GPs and other medical officers in prescribing hepatitis C viral treatment to patients in the community without the patient having to be seen in the liver clinic.
- › The service works closely with Maternal and Neonatal Services for the management of pregnancy-related liver enzyme derangement and pregnant women with hepatitis B. It also works with the Infectious Diseases Service in the management of patients with HIV and chronic hepatitis.

NSLHD has a hepatitis B notification rate of 31 per 100,000 population with 291 notifications in 2017, up 2.5 per cent on the previous year. An estimated 1352 residents accessed treatment in 2017, a nine per cent increase on the previous year and a 15 per cent increase since 2015. Almost 21 per cent accessed treatment in primary care while the majority (79 per cent) were managed by a specialist. Not all people with chronic hepatitis B need treatment but all require regular (six to 12 monthly) monitoring. Everyone living with chronic hepatitis B should be receiving ongoing care, incorporating either yearly monitoring (including a deoxyribonucleic acid (DNA) viral load test) or antiviral treatment.

In 2017 it was estimated that 5210 NSLHD residents were living with hepatitis C and there were 146 hepatitis C notifications, down from 153 notifications in 2016. This is a crude rate of 17 per 100,000 population, the lowest of all NSW LHDs, and almost half the rate of Western Sydney LHD. It is estimated that 23 per cent of NSLHD residents who are living with hepatitis C initiated treatment since the direct acting antiviral medicines were listed on the Pharmaceutical Benefits Scheme (PBS) in March 2016. Of those, 64 per cent are under the care of specialists while 36 per cent are being managed in primary care. Further efforts are needed to actively find people with hepatitis C and link them to treatment services.



An estimated **5,210** NSLHD residents are living with hepatitis C. There were 146 notifications in 2017, a crude rate of 17 per 100,000 population, the lowest of all NSW local health districts.

13.2 Issues and Opportunities

Managing service demand

NSLHD commissioned a significant review of hepatology services in 2014/15. Demand projections undertaken as part of this review estimated that by 2016, the number of residents in NSLHD living with liver disease would increase by two per cent to around 248,990. Of those it is estimated that NAFLD will account for 85 per cent, hepatitis C for 5 per cent and hepatitis B for four per cent; annual notifications would remain at approximately 270 for hepatitis B and around 140 to 150 for hepatitis C; these estimates are consistent with the actual activity reported in the [*NSW Hepatitis B and C Strategies 2014-2022 Annual Data Report 2017*](#).

The NSW Hepatitis B and C Strategies have been in progress since 2014; at this mid-point it would be timely to evaluate current service delivery arrangements, identify pressure points, and consider partnership and support with primary care providers to ensure that services are well positioned to achieve the goals set out in those strategies. Specifically the plan should consider strategies to up-skill and support primary care providers in the management of patients with hepatitis B or C, and supporting Mental Health Drug and Alcohol Services to identify high risk patients who would benefit from testing and treatment.

13.3 Recommendations

- AC11** Develop a hepatology service delivery plan for patients with viral and non-viral liver disease.



14

INFECTIOUS DISEASES

14.1 Service Description

The Infectious Diseases Service, provided from a level 5 hub at RNS Hospital with linkages to level 4 services at other hospitals, encompasses clinical, laboratory and public health with particular focus on:

- › Infection prevention and control is located in each of the acute hospitals in NSLHD and within Mental Health and Drug and Alcohol Service, Northern Sydney Home Nursing and at affiliated health organisations Royal Rehab and HammondCare. The service focuses on development of guidelines and initiatives; health care worker education; surveillance of health care associated infections, colonisation with multiple-resistant organisms and transmissible infectious diseases and development of strategies for their reduction and management of outbreaks and infection-related incidents.
- › Anti-Microbial stewardship including antibiotic usage, antimicrobial resistance and multi-resistant organisms including the development and roll-out of decision support and auditing tool (eASY) which provides practical advice on appropriate antibiotic selection based on indication, adult and paediatric antibiotic creatinine clearance-based dosing, and standardised antibiotic administration methods.
- › Infectious diseases consultation and expertise on matters pertaining to infection to other specialist services including emergency medicine, perioperative care, intensive care, and to oncology and other services with immuno-compromised patients. The service also works closely with the Hepatology service for patients with HIV and chronic hepatitis, respiratory services for tuberculosis (TB), and sexual health services.

- › Microbiology laboratory services provided by NSW Health Pathology Northern Sydney for Hornsby, RNS and Ryde Hospitals and the Mona Vale Urgent Care Centre; services for the Northern Beaches Hospital are provided by Australian Clinical Labs.

The Infectious Diseases Service is delivered largely as a consultative service to other specialties. A very small number of patients are admitted under infectious diseases specialists. The service has a significant and increasing role in the management of acute infections through the Hospital in the Home and Acute Post-Acute Care services.

14.2 Issues and Opportunities

Evaluation of service model

A hub and spoke service delivery model was implemented in 2016. It would be timely to evaluate current service delivery arrangements, identify any pressure points, and consider networked arrangements across NSLHD hospitals.

14.3 Recommendations

- AC12** Review current Infectious Diseases Services and develop a district-wide integrated service delivery model.

15

IMMUNOLOGY AND ALLERGY

15.1 Service Description

Allergy and Immune Diseases encompass allergic, immunodeficiency and autoimmune diseases.

- Allergic diseases occur when a person's immune system reacts to substances that are normally harmless; these allergens can be found in foods, airborne particles such as dust mite or pollens and medications. Care includes allergy assessment, management of anaphylaxis, and antibiotic desensitisation.
- Immunodeficiency diseases are either inherited (primary immunodeficiency) or acquired (secondary immunodeficiency) conditions in which the immune system does not function correctly to protect against microbes, leading to increased risk of potentially life-threatening infections and cancers.
- Autoimmune diseases are a broad range of related diseases in which a person's immune system produces an inappropriate, detrimental response against its own cells, leading to damage to healthy tissue.

Immunology and Allergy Services are provided at RNS Hospital (level 6). Hornsby and Ryde Hospitals have level 4 services which rely on networked consultation and support from immunologists at RNS Hospital as required. The new Northern Beaches Hospital provides a level 5 immunology and allergy service. Patients are also referred to RNS Hospital from Central Coast and elsewhere in NSW where immunology and allergy services are not routinely available. Private immunology and allergy services are provided in Chatswood, Wahroonga, Belrose, and at North Shore Private Hospital in St Leonards.

The Immunology and Allergy Service provides clinical consultation to a wide range of specialties including: anaesthesia, infectious diseases, respiratory medicine, endocrinology, rheumatology, gastroenterology, neurology, and post-transplant, haematology and oncology services. A considerable component of the service is laboratory based and as such there is a close working relationship with NSW Pathology North.

15.2 Issues and Opportunities


Access to non-admitted care

The wait lists for non-admitted appointment in the Department of Clinical Immunology and Allergy at RNS Hospital are reported to be up to 12 months and between four and six months in private practices across Northern Sydney and Central Coast LHDs, respectively.

Penicillin de-labelling

In 2017/18, a feasibility study commenced at RNS Hospital to de-label patients who have previously been identified as allergic to penicillin. The project is a collaboration with Pharmacy, the Antibiotic Stewardship Committee, Infectious Diseases and Respiratory Medicine services.

- It is estimated that 45 per cent of patients admitted to RNS Hospital each year will require antibiotics, with penicillin being the first-line therapy for many conditions. Ten per cent of patients have a history of penicillin allergy, although 95-98 per cent of those are found not to have an allergy on subsequent testing. Over a nine-month period, 65 patients admitted to RNS Hospital were recruited to the study with 95 per cent successfully de-labelled.

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- › De-labelling, using oral challenge and skin prick testing protocols, results in better patient outcomes including avoidance of iatrogenic infections, drug resistance and drug toxicity, as well as shorter lengths of stay and reduced likelihood of readmission; direct and indirect financial savings are also expected.

15.3 Recommendations

- AC13** Review the provision of non-admitted immunology and allergy services and develop a service delivery plan to meet the demand for adult and paediatric consultation and procedural services across NSLHD hospitals.
- AC14** Continue and expand penicillin de-labelling to all patients who will benefit across NSLHD hospitals and services.

16

DERMATOLOGY

16.1 Service Description

Dermatology consultation services are available at each of the acute hospitals in NSLHD. A district-wide service is located at RNS Hospital offering remote advice using telehealth and/or referral to dermatology non-admitted clinics and a small number of patients are admitted under the dermatology specialty. The dermatology service largely operates as a non-admitted service.

The service plays a key role in the management of patients with skin cancer including the provision of micrographic surgery (Mohs). It also provides a laser service for the cancer genetics clinic (neurofibromatosis patients) and for burn injury patients, as well as treating patients with more common disorders of the skin, mouth and genitalia including acne, psoriasis, atopic eczema, skin infections such as warts and dermatitis. The service has strong clinical linkages with Rheumatology and Microbiology services.

16.2 Issues and Opportunities

Access to non-admitted care

The Dermatology service reports a large number of patients waiting for appointments for non-admitted consultation at RNS Hospital, with extended waiting times for non-urgent referrals.

Delivering efficient dermatology services

A range of operational issues have been identified as barriers to the provision of an efficient dermatology service including: access to clean procedure rooms; poor administrative support with missed billing Medicare Benefits Schedule (MBS) opportunities and loss of revenue for privately referred patients; scattered services components across RNS Hospital making the integration and provision of a clinical service, research and training difficult. These issues are being addressed through the Division of Medicine at RNS Hospital.

16.3 Recommendations

- AC15** Review the demand for, and provision of, non-admitted dermatology services and develop a service delivery plan to meet the demand for adult and paediatric consultation and procedural services in NSLHD hospitals.
- AC16** Plan towards a best practice non-admitted clinic model that would include services in one geographical location with consistent staffing.

CHRONIC AND COMPLEX MEDICINE

The Chronic and Complex Medicine (CCM) Network includes the specialties of endocrinology, pain management and renal medicine. Other clinical networks include services for people with chronic illnesses, including respiratory and cardiac conditions, while the Primary and Community Health Service manages the Chronic Disease Management Program and the Integrated Chronic and Complex Care leadership group. The CCM network has a number of common projects with the Sydney North Primary Health Network including the development of health pathways for chronic and complex conditions, particularly in relation to the management of patients with diabetes and end stage kidney disease. Comprehensive research programs exist in diabetes, pain management and renal medicine to support standards.

Issues, challenges and opportunities common to all services in the Chronic and Complex Medicine Network include:

- Clinical governance for chronic care is complex due to the range of chronic health conditions and services, including the range of responsible networks. Patients with these conditions are becoming more complex with longer lengths of stay.
- Further work is required to ensure access to services for harder to reach population groups. Appropriate and equitable care for patients with chronic illnesses at Ryde and Hornsby hospitals has emerged as an issue for all three specialties. Telehealth options are being explored for a number of services.
- Continued support should be provided to primary medical care to reduce the number of patients presenting to hospitals that could be managed by their GP.

17

ENDOCRINOLOGY AND DIABETES

17.1 Service Description

The Endocrinology and Diabetes component of the Chronic and Complex Medicine Network aims to improve outcomes and services for patients with diabetes and other endocrine disorders.

Sub-specialty endocrinology services

Sub-specialty endocrinology services are generally multidisciplinary and are concentrated at RNS Hospital. These include bone densitometry and re-fracture prevention, endocrine testing, specialist obstetric services, thyroid cancer services, genetic endocrinology and obesity services. An endocrinology-led multidisciplinary healthy weight clinic is also provided at RNS Hospital.

Diabetes services

- › Specialist adult diabetes services in NSLHD are currently provided at the Northern Beaches, Hornsby, RNS and Ryde Hospitals, and at the Mona Vale and Brookvale Community Health Centres. The Northern Beaches Hospital is required to provide admitted (including consultative) and non-admitted services including gestational diabetes and follow up for public paediatric patients. GPs are central to good diabetes care and work is continuing to improve integration of diabetes care.
- › Diabetes in pregnancy services are available at the Northern Beaches Hospital and Hornsby Hospital (by arrangement with private endocrinology services) as well as at RNS Hospital.
- › RNS Hospital provides a tertiary service for paediatric diabetes and endocrinology largely delivered in paediatric non-admitted care. The service includes the provision of new technologies such as continuous blood glucose monitoring and new generation insulin pumps which have been shown to significantly reduce long-term and chronic complications of diabetes; these services require additional education and support for children, young people and families.
- › Diabetes high risk foot services provide a multidisciplinary approach to the management of diabetes related foot complications aiming to avoid ulcers, infections and amputations. The service at RNS Hospital has been complemented by a second service at Hornsby Hospital, with work to establish services at Ryde Hospital and Northern Beaches Community Health Centres under discussion. This is linked with network initiatives to develop a skin and wound model of care that is being progressed across the NSLHD.
- › A number of initiatives aim to support prevention and early intervention with diabetes:

 - › Services provided by Primary and Community Health include chronic and complex care coordination and home-based community nursing interventions for people with diabetes, including medication management and monitoring.
 - › Collaboration with primary care around GP education, a GP hotline, case conferencing and work to improve services for pregnant women from different ethnic backgrounds diagnosed with gestational diabetes.

- › A mental health and diabetes clinic at Hornsby Hospital and a young adult clinic at Brookvale Community Health Centre.
- › A nurse-led insulin stabilisation service to improve glycaemic control between routine clinic visits.
- › A rapid access clinic at RNS Hospital supported by a post-hospital discharge service.

17.2 Issues and Opportunities

The *NSLHD Diabetes Service Implementation Framework (April 2016)*, which provides direction for service development, has largely been implemented. Further service development opportunities include:

Managing service demand

- › Population growth and incidence of diabetes requires a collaborative approach between primary and secondary services with uncomplicated patients managed primarily by their GP. Many GPs continue routine referral of patients to hospital-based non-admitted clinics and specialist diabetes teams upon diagnosis of a patient with uncomplicated diabetes. One in nine admitted patients in Northern Sydney hospitals had diabetes and their average length of stay was 1.4 days longer than the average.

Diabetic patient education and support

- › NSLHD diabetes services provide education and support to people with either a new or existing diagnosis of type 1, type 2 and gestational diabetes. The goal of these services is to enable people with diabetes to develop practical diabetes self-management skills to minimise the effect of diabetes on their daily lives. The services provide consultation to support people with diabetes, together with their GP, in managing complex issues as well as complications.
- › Diabetes education services at each hospital have evolved independently and work is underway to improve efficiency, quality of service and patient experience of care. Diabetes education models need to be developed to support patients in the uptake of new technologies such as telehealth and continuous glucose monitoring.


Models of care

- › Models of care need to consider the health needs of hard to reach patients, including people with English as a second language, patients with mental illness and residents in aged care facilities.
- › The NSLHD diabetes model of care needs to be enacted in terms of services available at each site. This may include further devolution of high risk foot services to local facilities.
- › Future development of capacity for metabolic surgery for the management of co-morbidities in patients who are obese will require attention to the volumes of activity and links with the private sector.
- › Diabetes is also one of the conditions targeted in the NSW Ministry of Health [*Integrated Care for People with Chronic Conditions*](#) program.

Transition from paediatric to adult services

- › The transition of young people from paediatric to adult care for diabetes and endocrine services is important in order to maintain the adolescent or young adult's engagement with their health management including attention to psychosocial and mental health issues. The percentage of patients meeting the glycosylated haemoglobin (HbA1c) benchmark in this transitional group still remains below recommended levels. The decline in diabetes control and loss of patients to follow-up by both primary and specialist care has an impact on the rate of long-term complications of diabetes such as kidney disease, blindness, cardiovascular disease and neuropathy.

ONE IN NINE PATIENTS ADMITTED TO NSLHD HOSPITALS HAS DIABETES; AND STAY 1.4 DAYS LONGER ON AVERAGE THAN PATIENTS WITHOUT DIABETES.



17.3 Recommendations

- CC1** Effectively manage and realise the benefits of the increased uptake of insulin pumps and continuous blood glucose monitoring, as well as the use of mobile apps and new devices.
- CC2** Evaluate and review the mental health diabetes clinic developed at Hornsby Hospital to determine the scalability of this service to other facilities and to enable increased access for people with metabolic issues related to the treatment of mental health disorders.
- CC3** Develop better access to multidisciplinary transition services for young adults with diabetes to optimise diabetes management into adulthood.
- CC4** Work in collaboration with primary care partners to:
- › Increase capacity for general practice to manage people with type 2 diabetes (including developing and evaluating a strategy for primary care case conferencing with specialist services).
 - › Evaluate the training program for primary care nurses provided by diabetes educators and establish a sustainable strategy for ongoing support.
- CC5** Maintain current telehealth and face-to-face support to remote NSW endocrinology and diabetes services and:
- › Expand the utilisation of telehealth for clinical management, education and corporate use, to increase patient choice in service access and convenience.
 - › Explore applicability of remote monitoring for service providers to optimise patient outcomes and experiences, clinician experiences and system efficiencies.



CARE FOR PATIENTS WITH DIABETES REQUIRES A COLLABORATIVE APPROACH BETWEEN PRIMARY AND SECONDARY SERVICES WITH UNCOMPLICATED PATIENTS MANAGED PRIMARILY BY THEIR GP.

18

RENAL MEDICINE

18.1 Service Description

The spectrum of renal medicine services includes care of patients with acute renal impairment and chronic kidney disease (CKD), hypertension and kidney stones, acute and maintenance dialysis and dialysis education, renal transplantation and conservative care. A large proportion of medical non-admitted care aims to prevent end stage kidney disease. Services are also provided to manage hypertension and CKD in pregnancy.

The Renal Medicine Service has a strong element of basic science and clinical research with a model aiming to incorporate research into clinical care delivery.

Acute hospital services

- › The admitted renal services at Hornsby and Ryde Hospitals are provided as consultative services.
- › The Northern Beaches Hospital provides renal care in admitted and non-admitted settings, including high risk pregnancy, in-centre renal dialysis and support for patients on home dialysis.
- › The Department of Renal Medicine at RNS Hospital acts as the hub for renal services in NSLHD and provides a comprehensive nephrology service including general nephrology, hypertension, haemodialysis, peritoneal dialysis, renal transplantation and hypertensive and renal disorders of pregnancy. Diagnostic and day procedure services are provided.

Demand for renal dialysis continues to grow despite an increase in transplantation and the development of supportive care pathways

Renal dialysis

- › The RNS Hospital hub is responsible for peritoneal and haemodialysis services at the RNS Community Health Centre and provides training and outreach services to home-based dialysis patients, as well as maintaining strong links with the private sector. The satellite dialysis unit that operated at Mona Vale Hospital until October 2018 transferred to the Northern Beaches Hospital. RNS Hospital is the main centre for the Big Red Kidney Bus, a joint venture with Kidney Health Australia that provides opportunities for dialysis patients to receive care while on holiday.

Transplant services

- › Transplantation services include donor and recipient work up, pre-operative care, surgery and post-operative and non-admitted care. Referral patterns extend state-wide with outreach services provided to referral areas including Central Coast, southern NSW and the ACT.

Non-admitted services

- › Non-admitted services include general nephrology, pre-dialysis vascular and educational support and transplantation clinics. Most clinics are based at RNS Hospital with renal and supportive care clinics provided at Hornsby Hospital. A review of renal care was undertaken in 2017 with directions agreed for future development including a renal clinical nurse consultant contributing to screening referrals and contacting GPs as well as developing an education strategy for clinicians and patients, review of the chronic kidney disease nurse role as a care coordinator, and work with the primary health network to develop renal Health Pathways and provide professional development for GPs.

Renal supportive care

- › Renal supportive care, a priority of the Leading Better Value Care program, integrates renal medicine and palliative care to provide a positive non-dialysis pathway for patients with end stage kidney disease and is led by the RNS Hospital Division of Medicine with outreach through the Northern Sydney Home Nursing Service. This clinic has grown from 12 patients in 2014/15 to 78 patients in 2017/18.

18.2 Issues and Opportunities

Renal dialysis

- › Public renal dialysis demand continues to rise despite an increase in transplantation and initiation of a supportive care pathway. In the five years to 2017/18, dialysis activity increased by 27 per cent, with out-of-NSLHD patient inflows growing by 181 per cent. Excluding the Big Red Kidney Bus, local growth was 25 per cent and inflow growth 149 per cent. Currently public dialysis is only available from the RNS and Northern Beaches Hospitals. Redevelopment of Hornsby Hospital includes provision of dialysis chairs, and planning has been undertaken to identify chair requirements if Ryde Hospital were to include dialysis. Continued work is required to encourage patients into the most suitable treatment option, including peritoneal or haemodialysis, transplantation and renal supportive care.
- › Northern Sydney is unique regarding the high proportion of renal dialysis (over one third of local demand) that is provided in the private sector, at centres at Sydney Adventist and the Mater Hospitals and at the Fresenius centre in Lindfield. Renal dialysis is also provided at the Northern Beaches Hospital for public and private patients. This provision reduces demand on the public sector, but any change to the viability and growth of these units would represent a risk.
- › As noted by the Rehabilitation and Aged Care Network, prior to the transfer of services from to the new Northern Beaches Hospital, rehabilitation patients requiring dialysis could access both services at Mona Vale Hospital. Patients admitted for rehabilitation now need to be transported to other hospitals for dialysis but this often extends the time required in rehabilitation or, in some instances, presents a barrier to accessing rehabilitation. Currently transfer arrangements are in place to transport sub-acute patients from Ryde Hospital to RNS Hospital for dialysis.

Kidney transplantation

- › Kidney transplantation continues to increase at RNS Hospital, from 25 transplants in 2013/14 to 44 in 2017/18. With ongoing incentives to increase organ donation, renal transplant services are predicted to increase by at least 50 per cent over the next five years, with further demands on perioperative and hospital resources, including intensive care.
- › Work has begun to review the transition of complex renal patients into palliative or supportive care. This may require additional capacity in palliative services to manage increased demand.

Prevention and early detection

- › Strategies are required to reduce patient progression to stage five kidney disease. While physician clinics provide a service to patients with stage three to five chronic kidney disease, there has been minimal nursing staff or educational involvement in this earlier group of patients. Strategies would include the further involvement of renal medicine in prevention and early detection of impaired kidney function (such as the routine review of pathology results) and programs to strengthen clinical co-management of patients, such as with endocrinology.

Multidisciplinary care

- › Programs are required to strengthen clinical co-management of patients, including with intensive care (particularly in the non-tertiary hospitals), with general practice through formal pathway development and with cardiology where patients present with both cardiac and renal complications.

Non-admitted care

- › Further development of non-admitted care options for a greater number of patients is warranted, including innovative use of telehealth technologies, partnerships with general practice and review of non-admitted models and locations to improve access for the whole population. This would build on the previous review of renal ambulatory care.

18.3 Recommendations

- CC6** Improve networking and governance of dialysis services across NSLHD with common clinical pathways, practices and protocols to make best use of resources and to support the flow of patients to the closest, most convenient and appropriate service. This includes vascular access, dialysis education, and support for primary care.
- CC7** Develop a strategic plan to guide the staged development of additional dialysis capacity to meet anticipated demand over the next five to 10 years, including consideration of access issues for patients in sub-acute rehabilitation, and workforce requirements for multidisciplinary teams.
- CC8** Develop strategies to increase numbers of patients in home dialysis therapies by addressing factors that may prevent people from opting for or continuing with home treatments.
- CC9** Develop a renal transplant plan to support the expected growth of services over the next five to 10 years.
- CC10** Continue to monitor and evaluate the provision of conservative and palliative care for end stage renal failure patients, act on evaluation findings and ensure equitable implementation across NSLHD.
- CC11** Implement recommendations of the review of outpatient and ambulatory care services for patients with renal disease. This includes involvement in development of a CKD Health Pathway, support for the recruitment and education of nursing staff and allied health to focus on this group of patients, better access to distributed multidisciplinary services across NSLHD, and support for community and primary care clinicians.

THE DIALYSIS SERVICE AT RNS COMMUNITY HEALTH CENTRE PROVIDES TRAINING AND OUTREACH SERVICES TO HOME-BASED DIALYSIS PATIENTS, AS WELL AS MAINTAINING STRONG LINKS WITH THE PRIVATE SECTOR.



19

CHRONIC PAIN MANAGEMENT

19.1 Service Description

The Pain Management service provides consultative services to admitted patients and non-admitted services linked to a strong research program and a major contribution to NSW pain management planning. The pain service is primarily based at the Michael J Cousins Pain Management and Research Centre at RNS Hospital, and provides:

- Non-admitted services including the ADAPT multidisciplinary intensive pain management program and a clinic for patients fitted with infusion pumps.
- Admitted care, primarily day-surgery, for the provision or testing of implantable pain management devices.

Most presentations are for musculoskeletal and neurological pain, particularly migraine. A back pain pathway has been developed for NSLHD, with the RNS Hospital Pain Management service being a key participant. The service also provides outreach training to health professionals in rural and regional areas through the University of Sydney and PHNs, including to local GPs through the Sydney North Primary Health Network.

There is a solid research program including clinical trials and programs for injured workers. The service has submitted a grant application to NSW Health for translational research to establish a model for care coordination for patients frequently presenting to ED for chronic pain, and to improve care pathways for these patients.

Acute pain management services are generally provided by anaesthesia services in each of the NSLHD hospitals with admitted patient consultative services provided as required.

Chronic pain management services are also provided in the private sector at the Sydney Adventist, North Shore Private, Mater and Macquarie University Hospitals as well as at Greenwich Hospital.

19.2 Issues and Opportunities

Models of care and service planning

- A pain management model is required that outlines services to be provided across the LHD at each site, including management of patients presenting multiple times to the ED and improved consultation for admitted patients at Ryde and Hornsby Hospitals.
- A district pain management plan will provide guidance on the level of service to be provided at each site. Services will need to be assessed against new role delineation standards for chronic pain management released by NSW Health in 2017. Nursing resources will be critical to the success of any model.
- Nearly one-third of pain management admissions at RNS Hospital are for out-of-area patients, with large numbers from Central Coast.

19.3 Recommendations

- CC12** Identify gaps in pain management referral pathways across the LHD, particularly with respect to patients identified through ED and acute pain management services, and develop consistent LHD-wide strategies to improve timely access for patients.
- CC13** Improve education and clinical links between pain management services and services treating challenging patients, such as mental health and drug and alcohol, and develop appropriate care options.



SURGERY AND ANAESTHESIA

20

SURGERY AND ANAESTHESIA

20.1 Service Description

The overarching goal of the Surgery and Anaesthesia Clinical Network is to set out a framework to guide and support hospitals in the delivery of surgery, the provision of anaesthesia services, and the efficient use of operating theatres and other associated resources (for example surgical non-admitted clinics, pre-admission services, surgical bed capacity, etc). The Network plays a key role in improving access to reliable, validated activity data to support continuous improvement in the quality and safety of patient care and to assist surgical services and hospitals to measure and monitor performance against NSW Health targets and other locally agreed indicators.

Specifically, the Surgery and Anaesthesia Clinical Network has a district-wide role in the development of care systems and governance for:

- › Anaesthesia and acute pain management
- › Breast and Endocrine
- › Ear, Nose and Throat
- › General Surgery
- › Upper Gastrointestinal
- › Colorectal
- › Ophthalmology
- › Urology

A significant proportion of surgical services are supported through other clinical networks. These clinical networks have responsibility for the development of care systems for patient groups within their remit; they also must engage with the Surgery and Anaesthesia Clinical Network to ensure appropriate access to and efficient use of operating theatres and anaesthesia services. These surgical services are described in more detail in other parts of this Clinical Services Plan including:

- › Acute and Critical Care Medicine for diagnostic and procedural gastroenterology, endoscopy and endoscopic retrograde cholangio-pancreatography (ERCP).
- › Cardiothoracic and Vascular Health for cardiac, thoracic, vascular and renal surgery; and procedural activity including interventional cardiology, implantation of cardiac pacemakers, bronchoscopy and other diagnostic and therapeutic procedures.
- › Musculoskeletal Health, Plastics/Burns, Spinal Cord Injury and Trauma for orthopaedic, hand, spinal, and reconstructive surgery.
- › Neurosciences for brain and spinal surgery and neuro-interventional procedures.
- › Cancer and Palliative Care for surgical oncology services across all sub-specialties.
- › Maternal, Neonatal and Women's Health for obstetrics, gynaecology and gynae-oncology services Child Youth and Family Health for paediatric surgery and sub-specialty surgery for children and adolescent.
- › Medical Imaging for interventional procedures including interventional neuro-radiology (INR).
- › Mental Health Drug and Alcohol for electroconvulsive therapy (ECT) and other procedures.

There are currently 45 operating theatres and 10 endoscopy rooms in NSLHD acute hospitals (Table 18). Not all these operating theatres are currently in use; there is sufficient capacity to accommodate the anticipated growth in demand for several years to come.

Table 18: Current operating theatres and endoscopy rooms

	Hornsby	Northern Beaches (Public and Private)	Royal North Shore (RNS)	Ryde	NSLHD
Operating Theatres	8	14	20	3	45
Endoscopy Rooms	2	4	4	-	10

Source: NSLHD Performance Unit – Ward Setup and consultation with hospitals

Each NSLHD hospital provides surgery consistent with their capabilities and the availability of clinical support services as set out in the Guide to the Role Delineation of Health Services. All hospitals provide a mix of emergency and elective surgery, and provide common and intermediate level surgery for their local catchment:

- Ryde Hospital focuses on the provision of common and intermediate level surgery for patients with low to moderate anaesthetic risk; patients who require more complex surgery or who are higher risk are referred or transferred to Hornsby or RNS Hospitals. With the upgrade of the high dependency unit to a level 4 intensive care service, Ryde Hospital will have improved capabilities to provide selected major surgery for higher risk patients.
- Hornsby and Northern Beaches Hospitals also provide most major surgery and selected complex surgery; patients who require the most complex surgery are referred or transferred to RNS Hospital.
- RNS Hospital provides the most complex surgery or surgery on higher risk patients.

Each NSLHD hospital participates in the training and education of future surgeons; at RNS Hospital, the Surgical Education, Research and Training (SERT) Institute was established as an academic department of the Division of Surgery and Anaesthesia in 2017. Working closely with the University of Sydney Northern Clinical School, the SERT Institute aims to combine academic learning and the professional practice of surgery.

Trends in Activity

The NSLHD resident population demand for surgical services was estimated at over 97,000 episodes in 2017/18. The majority of this activity is provided by private hospitals and day procedure centres. Most of the activity in private hospitals is planned while NSLHD and other public hospitals provide a balanced mix of planned and unplanned services.

In 2017/18 NSLHD hospitals provided 25,288 surgical episodes:

- Children and adolescents (0-15 years) accounted for seven per cent of episodes, older people (aged 75+ years) accounted for 19 per cent and almost three quarters of episodes were for adults aged 16-74 years.
- RNS Hospital provided over half (56 per cent) of all surgical episodes while Ryde Hospital provided eight per cent and the remainder was split between Hornsby and Manly-Mona Vale (MMV) Hospitals. Activity at RNS Hospital is evenly split between planned and unplanned while Hornsby and Ryde Hospitals provide slightly more planned than unplanned care.
- Orthopaedics, part of the Musculoskeletal Health Clinical Network, is the single largest surgical specialty representing 31 per cent of surgical episodes. The surgical sub-specialties of the Surgery and Anaesthesia Clinical Network in combination accounts for 36 per cent of surgical episodes.

Table 19 and Table 20 summarise surgical episodes and bed days by service related group and hospital.



In 2017/18 NSLHD hospitals provided

25,288 surgical episodes.

Over half were provided at RNS Hospital.

Table 19: Surgical episodes by SRG in NSLHD hospitals, 2017/18

	Hornsby	MMV	RNSH	Ryde	NSLHD	% of Episodes
Surgery and Anaesthesia Clinical Network	1,703	1,605	4,793	909	9,010	35.6
54 Non Subspecialty Surgery	662	815	1,440	330	3,247	12.8
44 Upper GIT Surgery	194	222	569	220	1,205	4.8
43 Colorectal Surgery	154	188	380	198	920	3.6
48 ENT and Head and Neck	346	314	731	132	1,523	6.0
52 Urology	260	32	617	18	927	3.7
50 Ophthalmology	-	4	862	-	866	3.4
41 Breast Surgery	87	30	194	11	322	1.3
All other surgery/clinical networks	2,406	3,355	9,351	1,166	16,278	64.4
Total	4,109	4,960	14,144	2,075	25,288	100%
Distribution across NSLHD hospitals	16.2%	19.6%	55.0%	8.2%	100%	

Source: NSLHD Report Central Admitted patient data

Table 20: Surgical bed days by SRG in NSLHD hospitals, 2017/18

	Hornsby	MMV	RNSH	Ryde	NSLHD	% of Bed days
Surgery and Anaesthesia Clinical Network	4,996	4,677	19,013	2,150	30,836	26.2
54 Non Subspecialty Surgery	1,644	2,137	6,831	806	11,418	9.7
44 Upper GIT Surgery	889	860	4,598	503	6,850	5.8
43 Colorectal Surgery	1,122	1,201	2,945	674	5,942	5.0
48 ENT and Head and Neck	472	369	1,369	132	2,342	2.0
52 Urology	724	51	1,772	24	2,571	2.2
50 Ophthalmology	-	4	1,076	-	1,080	0.9
41 Breast Surgery	145	55	422	11	633	0.5
All other surgery/clinical networks	8,365	10,132	64,680	3,896	87,073	73.8
Total	13,361	14,809	83,693	6,046	117,909	100%

Source: NSLHD Report Central Admitted patient data

Over the five years from 2013/14 to 2017/18 surgical activity in NSLHD hospitals grew by 12 per cent (2.4 per cent per year), a similar rate to the underlying population growth:

- › Surgery for children and adolescents grew by 19 per cent (295 episodes), adult surgery grew by 13 per cent (2096 episodes) and surgery for older people grew by six per cent (279 episodes).

- › The number of patients resident in other local health districts but treated in NSLHD hospitals grew by 14 per cent (926 episodes). Out of area growth was particularly strong at Hornsby Hospital (37 per cent or 353 episodes) for both planned and unplanned activity, and at MMV Hospitals (34 per cent or 117 episodes) mainly in planned activity. Growth in out of area activity at RNS Hospital was more modest at 14 per cent (586 episodes) and Ryde Hospital experienced a net reduction (-13 per cent or -130 episodes) across planned and unplanned care.

- Growth in planned surgery varied by hospital: Hornsby Hospital grew by 25per cent (815 episodes) and RNS Hospital grew by 13per cent (1656 episodes). Northern Beaches grew at a slower rate (six per cent or 284 episodes) and Ryde Hospital had a net reduction of -4 per cent (85 episodes).
- Unplanned surgery grew at a slightly faster rate than planned activity. RNS Hospital provided 61 per cent of all unplanned activity in NSLHD hospitals. Both Hornsby and RNS Hospitals experienced growth but at Ryde Hospital, while planned surgical activity remained stable, there was a net reduction (-10 per cent) in unplanned activity.
- Length of stay varies significantly across hospitals and specialties. 31 per cent of all surgical episodes were provided as same day surgery and a further 28 per cent were discharged within 48 hours. Unplanned episodes tend to have a longer length of stay with 58 per cent staying longer than 48 hours.

20.2 Issues and Opportunities

The Surgery and Anaesthesia Clinical Network has identified its highest strategic priority to be the safest district in NSW to have surgery and anaesthesia. The delivery of good quality care requires constant evaluation of how we deliver services, how we perform against agreed standards, and how successful we are in meeting patient expectations. To achieve this overarching goal the Surgery and Anaesthesia Clinical Network will focus on contemporary models of care, delivering surgical care in clinically appropriate times, improving the quality of surgical data, and embedding the new surgical services governance structures.

Contemporary models of care

The Surgery and Anaesthesia Clinical Network will lead the planning and implementation of contemporary models of care for surgical specialties within its remit including:

- **Criteria-led discharge (CLD)** eligible patients are identified on admission and discharge criteria are agreed by senior clinicians and the multidisciplinary team. The nurse, midwife, allied health or junior medical staff can then facilitate the discharge of a patient when they have met all the documented criteria. CLD has the potential to improve the patient and staff experience, enhance

patient safety and reduce unnecessary length of stay in hospital. It also has the potential to reduce costs, better manage the demand for beds, and make best use of time-poor specialists. CLD criteria have already been developed for patients undergoing thyroidectomy and criteria for other surgical procedures are in development.

- **Enhanced recovery after surgery programs** are comprehensive perioperative pathways that aim to reduce surgical stress, maintain postoperative physiological function, and enhance mobilisation after surgery. In particular, the aim is to achieve an earlier discharge from hospital for the patient and a more rapid resumption of normal activities after surgery, without an increase in complications or readmissions. This is underpinned by collaboration between surgical and anaesthetic teams. Strategies vary for different surgical procedures. Preoperatively this may reduce prolonged fasting and bowel preparation, inter-operatively it may include short acting anaesthetic agents, no drains and maintenance of normothermia, and post operatively it may include early mobilisation and provision of multimodal analgesia.
- **Perioperative medicine** is the care of patients prior to, during and after surgery. It is an emerging field of anaesthesia with the first training programs being introduced in Victoria by the Australian New Zealand College of Anaesthetists in collaboration with Monash University and the Alfred Hospital Melbourne. Patients undergoing surgery today are, on average, older and have one or more chronic health conditions and major advances in surgical and anaesthetic techniques, systems and resources support the provision of surgery to patients who in the past would have been considered unfit for surgery. These changes require a greater focus on perioperative care to ensure safe practice and improved patient outcomes. With appropriate investment there are opportunities to develop the specialty in NSLHD hospitals and lead the way in NSW.

- › **Consultation and referral pathways** While not all sub-speciality services are available at all hospitals, patients often require specialist consultation. Current arrangements where patients need to be transferred to another hospital for consultation builds in avoidable delays if a bed is not immediately available and inconvenience for patients. The Clinical Network is working with hospitals to improve the referral pathway to specialist urology consultation for patients at Ryde Hospital (in ED or in the wards). For this and other specialist consultations telemedicine will be explored as a mechanism for providing care and improving the patient pathways.

Delivering surgery in clinically appropriate times

Ensuring that patients undergo surgery within clinically appropriate times is an important aspect of delivering high quality, patient focused care.

- › The Clinical Network and NSLHD hospitals use a range of measures to monitor performance against expectations. Measures include the widely reported Elective Surgery Access Performance (ESAP) along with wait list time and overdue patients, emergency surgery performance, and operating theatre metrics including theatre utilisation, first case on time and cancellations on day of surgery.
- › In 2018 the Clinical Network established the Elective Surgery and Procedure Transformation (ESaPT) Group to monitor and improve performance in collaboration with surgical specialty groups and hospitals. The Clinical Network has focused on the achievement of triple zero patients overdue in each of the three elective surgery categories. This was achieved by the end of 2017/18 and it is anticipated that, assuming a stable environment, the trend will be sustained with strategies put in place.
- › With increasing numbers of patients coming onto surgical waiting lists, further work is required to consistently achieve the recommended timeframes, particularly for category two and three patients in selected specialties, and to reduce the variation in median wait times for each category across hospitals and services.

- › For emergency surgery, NSLHD hospitals generally perform well, treating most patients within the recommended timeframes. There are some exceptions mainly in the achievement of the 15 minute and one hour targets for life-threatening conditions. Further work is required to improve the sensitivity of the performance measure and to consistently achieve 100 per cent in these life-threatening categories.

Reducing unwarranted clinical variation

Unwarranted clinical variation has the potential to reduce safety, quality, patient experience, performance effectiveness and efficiency outcomes.

- › Programs such as the Royal Australasian College of Surgeons and the private health insurance company [Clinical transparency for improved patient experience](#) program, and the United Kingdom National Health Service program [Getting It Right First Time \(GIRFT\)](#), along with the ACI and NSW Ministry of Health collaborative partnership with the American College of Surgeons' [National Surgical Quality Improvement Program \(NSQIP\)](#) will be explored as approaches to the identification and management of unwarranted clinical variation in the specialty streams of the Surgery and Anaesthetic Clinical Network.

Delivering cancer and other small volume services

A significant proportion of surgery for NSLHD residents is provided in the private sector, sometimes resulting in small volumes of activity distributed unevenly across NSLHD public hospitals with implications for the efficient organisation of operating theatres, accreditation of training programs, and quality outcomes particularly for selected cancer and other complex surgical procedures.

- › The NSW Cancer Institute's [Reporting for Better Cancer Outcomes \(RBCO\) Program](#) monitors and reports on cancer prevention, screening, treatment and clinical trials to improve cancer outcomes and improve the experience of care for patients with cancer. Working with local health districts, the RBCO Program identifies where there are differences in results between geographical areas and population groups and turns that information into meaningful recommendations that can be used to make improvements in services and outcomes.

- › The RBCO Program makes best practice recommendations about minimum volumes for selected cancer surgery and recommends consolidation of several low-volume hospitals within an LHD, noting that the volume of surgical procedures that a hospital performs to treat different types of cancer is an important determinant of a person's outcomes, especially for highly specialised surgical procedures. The Surgery and Anaesthesia Clinical Network will work collaboratively and support the Cancer and Palliative Care Clinical Network in the review and, where necessary, consolidation of low-volume high-acuity cancer surgery in high-volume hospitals. Surgical volumes for pancreas, oesophagogastric and liver cancers have all been reviewed and are now performed at RNS Hospital. Ongoing work is occurring to ensure adequate volumes for rectal cancer: Ryde Hospital is no longer performing this surgery and activity will be consolidated at Hornsby and RNS Hospitals. This work includes the development of a pancreatic cancer centre at RNS Hospital.

Resource utilisation, equipment and technology

Surgical excellence is supported by state-of-the-art equipment and technology and requires regular review of current resource allocation and utilisation.

- › Surgical techniques evolve over time but the allocation of theatre time does not always reflect the additional time requirements of new techniques, for example laparoscopic approaches often take longer than open approaches so will require additional operating theatre time for the same number of patients. Operating theatre templates also need to accommodate the additional time that is often required to meet surgical training and teaching commitments. Local operating theatre templates need to be reviewed regularly to ensure that they respond to changes in contemporary operating practices, match the allocation to actual workload, and make best use of the available resource.
- › In March 2019 the NSW Ministry of Health released its review of robot-assisted surgery. The report acknowledged that while robotic surgery appears as safe and effective as conventional surgery, the evidence is evolving across a number of clinical specialties and the long-term benefits and risks are yet to be fully understood. The review recommended that robotic surgery be provided under a research/evaluation framework (including standardised data and patient reported measures) to assist with the generation of long-term evidence and that opportunities to partner with private hospitals would be encouraged.
- › A number of NSLHD clinical specialties have identified opportunities to introduce new technologies to improve outcomes and efficiency. The Clinical Network in collaboration with RNS Hospital is preparing a business case to assess the viability of a robotic surgery program for NSLHD across a range of specialties. The program would have a strong focus on academic excellence in collaboration with private hospitals and would need to be cost-neutral or funded from alternative sources.

Data governance and quality

The provision of safe and high quality evidence-based surgical care is dependent on access to accurate data and information. Access to consistent and accurate data will support the Clinical Network, specialty streams and hospitals to identify variation and compare outcomes and changes in performance over time and against each other, or against peer hospitals.

- › The recent development of the theatre information management system (TIMS) and the Elective Surgery Waitlist Dashboard have improved access to information that is useful to clinicians and other frontline staff and have been critical for the engagement of specialty streams in the identification and management of solutions for patients at risk of breaching the clinically appropriate waiting times and the achievement of "triple 000" targets.
- › To maximise the value of these and other tools in development, each surgical service and hospital needs to comply with agreed data collection standards and participate in regular audits for completeness, accuracy and timeliness.
- › Further work is required to refine and embed a comprehensive data governance structure with key accountabilities at service delivery, hospital and Clinical Network levels.

Surgical services governance

Many of the issues, challenges and opportunities identified cannot be resolved or managed by a single hospital, division of surgery or surgical speciality. To date, the current organisational framework has meant that each hospital operates in relative isolation with their own arrangements and accountabilities for service delivery and performance and with limited opportunity to support each other.

To address complex problems the Surgery and Anaesthesia Clinical Network proposed and assumed overarching responsibility for monitoring the performance of surgery across all hospitals and for bringing together hospital surgery management teams and specialty streams to improve the delivery of patient-focused surgical care. As part of the new governance structure:

- › The Clinical Director and Service Development Manager meet monthly with the Chief Executive and LHD and hospital executive teams to agree on strategic priorities, agree on approaches and solutions to issues, and review progress and achievements.
- › The Clinical Network has established a collaborative with the clinical directors and service development managers of each clinical network with significant surgical components to consider district-wide clinical standards and evidence-based practice. It also considers what surgical services should be provided where, and advising on investment, disinvestment and development of services.
- › Specialty surgical working groups will be established, as required, to explore and consider service changes or developments.

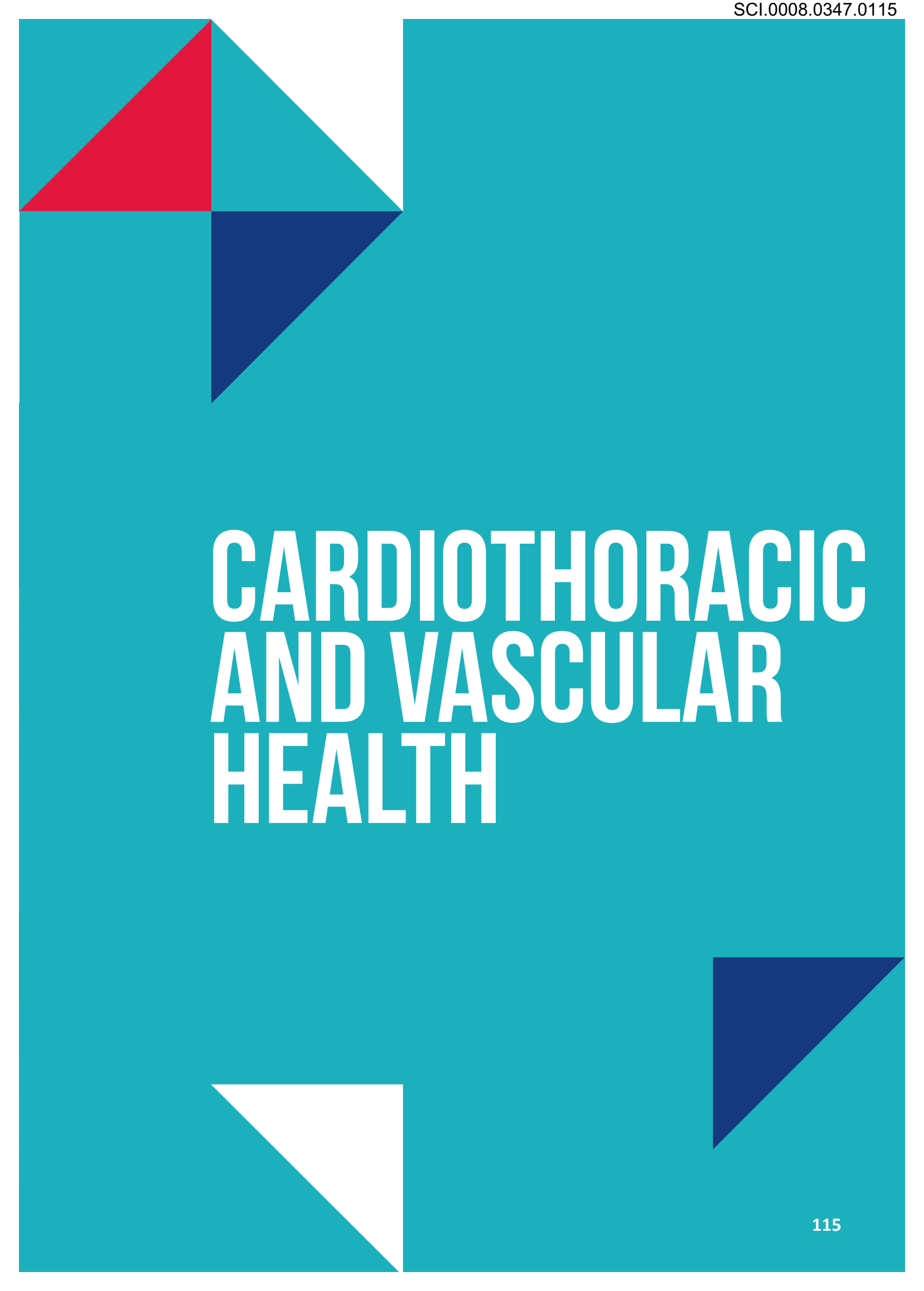
The success of this approach is dependent on clinician engagement, particularly senior surgical and anaesthetic teams, and a bottom-up consultative and collaborative approach to the exploration of issues, with discussions and decision making based on robust and accurate data as well as consideration of training and research commitments and structural constraints.

A NUMBER OF NSLHD SURGICAL SPECIALTIES HAVE IDENTIFIED OPPORTUNITIES TO INTRODUCE NEW TECHNOLOGIES TO IMPROVE PATIENT OUTCOMES AND SERVICE EFFICIENCY.

20.3 Recommendations

- SA1** Implement contemporary models of care including, for example, criteria-led discharge, enhanced recovery after surgery, and perioperative medicine.
- SA2** Achieve and sustain zero overdue planned surgery patients in all three clinical priority categories.
- SA3** Achieve and sustain unplanned surgery performance targets across all six clinical urgency categories.
- SA4** Improve access to regular, accurate and consistent surgical activity data to support clinical decision making, improve service delivery, and manage unwarranted clinical variation.
- SA5** Optimise the performance of each surgical speciality in the provision of appropriate, consistent, timely and equitable surgical care.
- SA6** Support the NSLHD review of the distribution of admitted patient activity to make best use of available capacity and capabilities across an integrated hospital network, and to develop sustainable and efficient services to meet future need.





CARDIOTHORACIC AND VASCULAR HEALTH

21

CARDIOLOGY AND VASCULAR HEALTH

21.1 Service Description

Cardiology services

Cardiology services are provided at Hornsby, Northern Beaches, RNS and Ryde Hospitals. Services span the full continuum of care from initial presentation, acute and sub-acute care, rehabilitation and follow-up. Services are provided from clinics, angiography suites, coronary care units, dedicated telemetry beds, step-down admitted beds and in community settings.

- Rapid Access Chest Pain Clinics have been established at both RNS and Hornsby Hospitals. The clinics provide access to cardiology diagnostic services and specialist consultation within 24-72 hours of patients with intermediate risk chest pain being discharged from EDs.
- Cardiac rehabilitation services are provided across all acute hospital sites and includes group-based physical rehabilitation and education programs.
- The NSLHD Heart Failure Redesign Project developed a best practice model of care for the prevention, identification, treatment, rehabilitation and on-going management of patient's with heart failure. The model has been mapped through the four key phases of a patients journey: clinically stable, decompensating (deteriorating), compensated (acute admission), and stabilising (post-acute follow-up). The model involves multidisciplinary coordination of care across acute and primary care providers to support self-management and prevent acute episodes.
- Diagnostic services including cardiac ultrasound, computerised tomography coronary angiography, medical resonance imaging (MRI), and cardiac electrophysiology studies (EPS) which is a growing sub-specialty that involves diagnosing and treating electrical disturbances of the heart.
- Interventional cardiology services encompass angiography and angioplasty procedures catheter ablation for arrhythmias and pacemaker or defibrillator implantation, and percutaneous cardiac valve procedures (trans-catheter aortic valve implantation (TAVI)) for selected patients who are unsuitable for open heart surgery. Services are provided in a collaborative arrangement with North Shore Private Hospital. The combined public-private activity volume maintains the skills of proceduralists and nursing staff.

A small number of cardiac pacemaker insertions are provided at Hornsby Hospital. There are two cardiac catheter laboratories at the Northern Beaches Hospital and a number of private laboratories at Sydney Adventist, Mater Private and Macquarie University Private Hospitals.

Cardiothoracic/thoracic surgery

Cardiothoracic/thoracic surgery includes coronary artery bypass surgery, major chest procedures, cardiac valve procedures as well as management of chest trauma, operative management of lung lesions, and pneumothorax. Cardiothoracic surgery and cardiology departments work collaboratively in the provision of structural heart disease services, including TAVI.

Tertiary and interventional cardiology

RNS Hospital, in addition to providing secondary services to its local catchment population, provides tertiary cardiology services across NSLHD and other parts of NSW.



The NSLHD Heart Failure Redesign Project developed a best practice model of care for the prevention, identification, treatment, rehabilitation and ongoing management of patients with heart failure.

- › All hospitals care for patients with pneumothorax including the insertion and management of intercostal drains, while patients requiring more complex or specialist cardiothoracic services are transferred or referred to RNS Hospital.
- › RNS Hospital provides cardiac and specialist thoracic surgery for NSLHD and for patients referred from Central Coast LHD.
- › There are also a number of private providers of cardiothoracic surgical services within NSLHD including North Shore Private, Mater Private, Macquarie University Private and Sydney Adventist Hospitals.

21.2 Issues and Opportunities

Heart failure

- › Implementation of the [*new integrated model of care for heart failure*](#) across acute (admitted and non-admitted), sub-acute (rehabilitation and palliative care) and community health services, in collaboration with specialist and primary care providers.

Managing service demand

- › Managing continued growth in demand for cardiology services. It is anticipated that there will be continued growth in demand for cardiac services, particularly among the older population related to factors which contribute to cardiac disease, such as diabetes, renal disease, obesity, and hypertension. In addition to determining the required capacity and capabilities (including any change in role delineation) of acute hospital services, a comprehensive review will need to consider preventative programs, community partnerships and hospital avoidance programs, to ensure patients receive the right care in the right place at the right time.

Electrophysiology services

- › Electrophysiology services report increase in demand in recent years associated with increased population and clinical indications for EPS. A comprehensive review of cardiology diagnostic and interventional services would support the planning and provision of services across the network of acute services in NSLHD hospitals.

Structural heart disease

- › There are an increasing number and range of structural heart conditions that can be managed/ treated using interventional cardiology and minimally invasive cardiothoracic approaches. The volume of interventions/procedures that a hospital performs is an important determinant of patient outcomes, and is important in the training of interventional cardiology and cardiothoracic surgical specialists. A comprehensive review of the demand for TAVI and other structural heart interventions, along with consideration of collaborative arrangements between public and private providers, would support the planning and provision of services over the next five years. The work already underway to develop an integrated service model and streamline referral, access and comprehensive patient assessment and management across non-admitted and admitted care settings could also be progressed through this review.

Cardiology training

- › Cardiology training across NSLHD is currently fragmented with variation in the depth and breadth of experience and exposure for advanced trainees across tertiary and non-tertiary settings. Opportunities to develop a district-wide rotational program in collaboration with private hospitals could be explored.

21.3 Recommendations

- CV1** Implement the new NSLHD model of care for the management of patients with heart failure and evaluate patient, clinical and organisational outcomes.
- CV2** Review cardiac rehabilitation services and develop a standardised approach to enable equity of access, service and staffing profiles at each site.
- CV3** Review the demand for cardiology and electrophysiology and other diagnostic services and develop a five year expansion and service delivery plan.
- CV4** Review the demand for and organisation of the interventional cardiology and cardiothoracic structural heart disease programs and develop a five year expansion and service delivery plan.
- CV5** Review advanced cardiology training and research programs across NSLHD public and private hospitals.

22

RESPIRATORY MEDICINE

22.1 Service Description

Respiratory Medicine includes a range of admitted and non-admitted care services for asthma, chronic obstructive pulmonary disease (COPD), acute respiratory failure, respiratory infections, interstitial lung disease, tuberculosis, respiratory oncology, sleep breathing disorders, and other conditions of the lungs and airways. Treatment comprises acute care in the admitted setting, consultation and follow-up services in non-admitted settings, and non-admitted/community-based rehabilitation programs. The service also includes ongoing care for patients requiring non-invasive positive pressure ventilation.

Services are provided at all acute hospitals, with tertiary level services only provided at RNS Hospital. A large proportion of respiratory medicine services are provided on a non-admitted basis through medical and allied health clinics. Most non-admitted clinics are provided at RNS Hospital.

- Diagnostic services include bronchoscopy and endobronchial ultrasound, respiratory function laboratory services, and overnight sleep laboratory services. All hospitals have access to basic admitted physiology (spirometry), sleep monitoring and bronchoscopy services. RNS Hospital provides access to endobronchial ultrasound procedures and sleep laboratory services. These services are also provided at a number of private hospitals and home-based sleep study providers across NSLHD.
- The tuberculosis service provides non-admitted/outreach care from a hub at RNS Hospital with satellite services located at Hornsby Hospital and Mona Vale Community Health Centre.

- A district-wide pulmonary rehabilitation program is provided by the Chronic Disease Community Rehabilitation Service under the directorate of Primary and Community Care.

22.2 Issues and Opportunities

Managing service demand

- While NSLHD has lower rates of smoking compared to other NSW LHDs, population-based health promotion/smoking cessation programs will continue to be required and it is likely that the demand for respiratory services will continue to increase. The rates of lung disease secondary to smoking can be expected to continue to increase for the next ten to fifteen years before the impact of the declining smoking rates since the 1980s and 1990s becomes apparent.
- The spectrum of sleep breathing disorders (including obstructive sleep apnoea and nocturnal hypoventilation) are projected to increase in line with increasing obesity.

Value-based health care

- As long-term respiratory illness/conditions continue to grow in the population, including progressive (and acute) respiratory failure and pulmonary infection, the Network is committed to implementing the principles of value-based health care. This work is best described by looking across the continuum of care from prevention, diagnosis, management and palliation through multidisciplinary care provision. By enhancing the entire patient journey and utilising community and home-based services, the LHD will be able to manage demands into the future.

NSLHD has lower smoking rates compared to the rest of NSW.

- › Clear pathways for key conditions such as interstitial lung disease, bronchoscopy services and endobronchial ultrasound will support best practice standardised care and LHD-wide equity of service provision.
- › The Leading Better Value Care/Agency for Clinical Innovation (ACI) audit of COPD services at Ryde and Hornsby Hospitals indicated variation in care provided and opportunities to develop a standardised pathway of care in line with best practice standards. Through this initiative, pulmonary post discharge follow-up and pathways to avoid ED presentations will be reviewed and a standardised LHD approach established.

22.3 Recommendations

- CV6** Reduce clinical variation in chronic obstructive pulmonary disease, informed by the [Leading Better Value Care](#) initiative framework.
- CV7** Review the demand for respiratory services, including diagnostic, non-admitted, admitted, consultative and support services, and develop a five year expansion and service delivery plan for NSLHD.

LUNG DISEASE SECONDARY TO SMOKING CAN BE EXPECTED TO CONTINUE TO INCREASE FOR THE NEXT 10 TO 15 YEARS BEFORE THE IMPACT OF DECLINING SMOKING RATES SINCE THE 1980S AND 1990S BECOMES APPARENT.



23

VASCULAR SURGERY

23.1 Service Description

The Vascular Surgery service provides treatment and care of patients with vascular disease of the arteries, veins and lymphatic circulation through medical therapy and traditional vascular surgical and endovascular (minimally invasive) treatments. The service has strong links with cardiology services for patients with hypertension and ischaemic heart disease, and with endocrinology for patients with diabetes and associated complications including foot and lower limb ulcers. There are close links with the Renal Medicine Service for patients requiring fistula formation for renal dialysis, or as part of the renal transplant surgical team.

- › Hornsby Hospital provides vascular surgical services, which include admitted consultations, with non-admitted consultations provided in specialists' private rooms. Referral pathways are established from the Hornsby Ku-ring-gai High Risk Foot Service to enable vascular involvement and consultations. Non-invasive vascular imaging and ultrasound services are available and the operating suite has a hybrid theatre equipped for vascular surgical procedures.
- › Northern Beaches Hospital provides vascular surgery services, replacing the services previously provided at Manly and Mona Vale Hospitals.

- › RNS Hospital provides comprehensive vascular surgical services including elective and emergency admitted care and non-admitted clinics. Non-invasive vascular imaging and ultrasound services are available along with angiography, CT (computed tomography) and MR (magnetic resonance) angiography. The service provides haemodialysis vascular access, plays a key role in the provision of renal transplant (living and deceased donor) programs, and combined surgical care with multiple specialties including cardiothoracic surgery, endocrine surgery, neurology (stroke care), urology, neurosurgery/orthopaedic spinal surgery, complex upper gastrointestinal surgery, and Major Trauma services. The service is also involved in the High Risk Foot Service for diabetics at RNS Hospital.
- › Ryde Hospital accesses consultative and emergency support by the vascular surgery team at RNS Hospital. Patients requiring vascular surgery investigations and intervention are transferred there.



23.2 Issues and Opportunities

Managing demand for complex vascular care

- › There is an increasing demand for more complex vascular care due to the significant advances in minimally invasive techniques/procedures and a growing ageing population with chronic disease. Conditions such as diabetes and chronic kidney disease require vascular support, and have resulted in an increase in services requiring combined surgical care for haemodialysis access and renal transplant.
- › There is increasing demand for non-admitted and admitted non-invasive vascular imaging services as well as input from vascular specialists into a range of non-admitted clinics.

Hub and spoke service model

- › It is important that adequate volumes of patients are seen by teams in NSLHD to maintain specialist skills. To ensure this occurs, a hub and spoke model for vascular surgery will be considered to enable the district to deliver services locally to patients and provide specialist medical interventions for vascular conditions.

Data analytics

- › Reliable and transparent data is required to support strategic service planning and clinical decision making. This includes data that can be used to evaluate specialised services including vascular ultrasound and non-admitted clinics, and operational considerations such as workforce planning, procurement and medical training.

23.3 Recommendations

- CV8** Establish a vascular surgery network encompassing all specialist medical, nursing and allied health staff.
- CV9** Establish reliable data collection and information sharing through a clinical and operational dashboard related to vascular surgery outcomes.
- CV10** Develop a consistent approach to vascular service provision and workforce (including the High Risk Foot Service) across the district, with consideration of a hub and spoke model.



MUSCULOSKELETAL HEALTH, PLASTICS/ BURNS, SPINAL AND TRAUMA

24 MUSCULOSKELETAL HEALTH, PLASTICS/BURNS, SPINAL AND TRAUMA

24.1 Service Description

The Musculoskeletal Health, Plastics/Burns, Spinal and Trauma (MHPBST) Network has two distinct streams: the Musculoskeletal Stream which includes specialist rheumatology, orthopaedic and hand surgery services, and the Injury Stream which includes the supra-LHD services for severe burn injury, spinal cord injury and major trauma, as well as plastic and reconstructive surgical services.

Rheumatology

- › The Department of Rheumatology at RNS Hospital provides admitted and non-admitted services aimed at diagnosis and management of musculoskeletal and inflammatory conditions including arthritis, osteoporosis and gout, and fibromyalgia. Referrals are received from across NSLHD as well as from Central Coast LHD (where there are no public non-admitted services) for the Rapid Access Clinic and other rheumatology clinics. An after-hours on-call consultation service is provided for all NSLHD hospitals.
- › An admitted consultation service for patients admitted under other specialties is provided at Hornsby and Ryde Hospitals by visiting medical officers, while patients requiring non-admitted care are referred to RNS Hospital.

Orthopaedics

- › The orthopaedic service focuses on the diagnosis, treatment and prevention of injuries, disorders and diseases of the body's musculoskeletal system.

- › Orthopaedic admitted surgery and non-admitted fracture clinics are provided at Hornsby, Northern Beaches, RNS and Ryde Hospitals. Orthopaedic surgery for paediatric patients is provided at Hornsby, Northern Beaches and RNS Hospitals but not at Ryde Hospital.
- › The majority of major orthopaedic trauma surgery, including limb salvage surgery, is performed at RNS Hospital, reflecting its major trauma service role.
- › The orthopaedic departments are involved in the teaching programs of University of Sydney and the Australian Orthopaedic Association. Many of the orthopaedic surgeons work in the private and public sectors in NSLHD, and participate in joint education and other projects.

Hand surgery

- › The Department of Hand and Peripheral Nerve Surgery and the Integrated Hand Unit (IHU) at RNS Hospital is a tertiary referral centre for injuries and diseases of the hand, and an integral part of the major trauma service. RNS is the only hospital in NSW to provide microsurgical hand reconstruction associated with complex multi-trauma. Clinical services encompass hand and upper limb surgery, congenital hand surgery clinics, spinal and brain injury services, cerebral palsy clinics, brachial plexus and peripheral nerve surgery, complex wrist surgery and reconstruction of the arthritic hand.
- › The Hand Surgery department also provides a service for spinal cord injured patients in the tetraplegia hand clinic during their initial phase of care, and long-term or life-time follow up care after their injury to assess for potential functional improvement through tendon transfers.

NSLHD orthopaedic fracture clinics saw 7,875 patients over 26,850 occasions of service in 2017/18.

Spinal cord injury

- The [State Spinal Cord Injury Service \(SSCIS\)](#) is responsible for the acute management of people who have sustained a traumatic spinal cord injury (SCI). RNS Hospital is one of two adult SCI services in NSW, with its catchment including the Central Coast, Western Sydney, Western NSW, Far West, Hunter New England, Northern NSW, and Mid North Coast Local Health Districts. RNS Hospital is also a designated [NSW major trauma service](#).
- The SCI Service at RNS Hospital has 18 beds admitting both new and established SCI patients. Management of established SCI patients comprises the bulk of SCI admitted activity at RNS Hospital.
- Specialist SCI admitted rehabilitation is provided from 20 beds at Royal Rehab while the RNS Hospital [Department of Spinal Cord Injury Medicine](#) provides non-admitted SCI rehabilitation clinics including spinal plastics, tetraplegia hand, spasticity, colorectal, sexuality, and fertility clinics. The tetraplegia hand clinic is the only one of its kind in NSW and also provides a service for patients from Prince of Wales Hospital SSCIS catchment. Specialised non-admitted outreach care services are limited in rural and regional areas, and this causes delays in discharge of patients.
- Patients with spinal cord injury usually have a life-time association with RNS Hospital SCI service regardless of where they live. Other clinical services that play a role in the management of the comorbidities present in people with SCI (for example plastic surgery, colorectal, respiratory and urology) are not supra-LHD services but may continue to support these patients throughout their lives. Discharge planning is more complex for these patients, as they may require transfer to a facility outside NSLHD for ongoing acute or sub-acute care, as well as having to return to NSLHD for specialist non-admitted appointments. The service works closely with the supra-LHD Spinal Outreach Service and community organisations.

Severe burn injury

- The [Statewide Burn Injury Service](#) is a specialised service provided in three designated NSW centres: RNS Hospital and Concord Repatriation General Hospital for adults, and The Children's Hospital at Westmead for children. Services for patients with minor burns are provided at Hornsby, Northern Beaches, RNS and Ryde Hospitals.
- The RNS Hospital Specialised Burns Unit is responsible for acute transfers within the catchment of Northern Sydney, Central Coast, Hunter New England, Northern NSW and Mid North Coast LHDs in NSW. As a designated trauma service, RNS Hospital also accepts patients with burn injuries from multi-trauma from across NSW. The 12-bed Severe Burns ward accommodates patients with burn injuries or requiring plastic and reconstructive surgery. Severely burn injured patients frequently have stays in ICU with specialist nursing/dressings and allied health input from the burn unit clinical staff.
- Admitted rehabilitation services for severe burn injured patients are provided at [Graythwaite Rehabilitation Centre](#) at Ryde.
- A digital referral and advice service is provided through a dedicated burn consult email address serviced by both nursing and medical staff. Non-admitted services include wound progress reviews, dressings and allied health review and therapy. With improvements in treatment modalities, severe burn injured and other complex patients can increasingly be managed on a non-admitted care basis, reducing the need for long admitted hospital stays.

Trauma

- The [NSW Institute of Trauma and Injury Management](#) oversees, coordinates and supports the [NSW trauma system](#), an inclusive networked system of hospitals designated to provide various levels of trauma management capability across metropolitan, regional and rural settings.
- Each major trauma service is networked with regional trauma services and associated referring LHDs. RNS Hospital is designated as a major trauma service, and is networked with Gosford Hospital and Central Coast LHD. The service provides treatment for severely injured patients. RNS Hospital receives minor as well as major trauma patients, and is the busiest adult major trauma centre in NSW. Hornsby, Northern Beaches and Ryde Hospitals receive minor trauma patients.
- RNS Hospital trauma service was the first in NSW to implement the Prevention in Alcohol and Risk Related Trauma in Youth (P.A.R.T.Y.) program, a multidisciplinary trauma prevention program that educates youth about the consequences of risk-taking behaviours.

Plastics and reconstructive surgery

- › Minor plastics and reconstructive procedures are provided at Hornsby and Ryde Hospitals while more complex patients and procedures are managed at RNS Hospital. The RNS Hospital Plastics and Reconstructive Surgery service is an integral component of the trauma, spinal cord injury, burn injury, and cancer services provided at the hospital. Plastic surgeons also provide surgical management of complex pressure injury wounds in people with spina bifida, as there are limited services for these patients in NSW.

24.2 Issues and Opportunities

Distribution of services

- › Access to specialist non-admitted care: non-admitted services, apart from fracture clinics, are concentrated at RNS Hospital. There is high demand for services particularly from patients with chronic rheumatology conditions who cannot afford the out-of-pocket costs associated with private specialist care.
- › Distribution of surgical services: MHPBST surgical services accounts for approximately 35 per cent of surgical episodes across NSLHD hospitals, with 47 per cent of that surgery provided at RNS Hospital. Some surgery could be provided at Hornsby and Ryde Hospitals building on their existing capabilities and developing comprehensive local services. The establishment of a surgical-geriatric service at Ryde Hospital remains a focus for the network. A comprehensive review, in collaboration with the Surgical and Anaesthesia Clinical Network, would inform decisions on the best distribution of services across NSLHD hospitals.
- › Allied health resources: Psychology/psychiatry services to support the provision of admitted, non-admitted and follow up care for patients with severe burn injuries, tetraplegia and spasticity and other complex tertiary care needs should be reviewed and deficiencies addressed.

3,566

NSLHD residents had a knee or hip joint replacement in 2017/18. Almost 25% were provided in public hospitals and over 75% in private hospitals.

Delivering supra-LHD services

- › Managing the “spine effect”: In addition to its role as a supra-LHD provider of specialist care for SCI, RNS Hospital also receives referrals for patients with non-traumatic SCI, spinal and neurological cancer, spinal column injury, spinal plastics, orthotics, deformity correction, spina bifida, multiple sclerosis and motor neurone disease. Improving patient care requires clear clinical governance of services and development of models of care for patient groups not defined by supra-LHD services.
- › Delayed discharge from supra-LHD services are associated with limited access to rehabilitation, difficulties transferring patients to their local hospital with ongoing sub- or non-acute care needs, and processes associated with the NDIS and Lifetime Care and Support schemes. Access to step-down accommodation could free up acute beds in RNS Hospital.
- › Ongoing care for supra-LHD services: Currently patients must return to RNS Hospital for specialist follow up for supra-LHD services. This may not be necessary with new models of care which could include care pathways and integration of care across services and hospitals, non-admitted outreach services, continuity of medical records between hospitals and telehealth consultations and support for clinicians at other hospitals once patient has been transferred.

Transitioning from child to adult services

- › Young people with chronic musculoskeletal, spinal, injury or congenital related disorders (spina bifida, spinal cord injury, juvenile arthritis, scoliosis, hand deformities) are transitioning from child to adult services. Strategies to meet the unique needs of these patients need to be developed and implemented.

Leading Better Value Care (LBVC)

- › The MHPBST Network has been overseeing the roll-out of two Tranche 1 initiatives in the LBVC program: Osteoarthritis Chronic Care and Osteoporotic Refracture Prevention initiatives, and will be supporting the rollout of Tranche 2 initiatives including hip fracture care.

Data management

- › There is a need to improve the capture and management of information in the electronic medical record, particularly for patients who require transfer to regional or local hospitals from supra-LHD services, or who have ongoing or life-time care needs.

Supporting principles

Improved patient care can be achieved through:

- › Flexible service models which are integrated and consider the patient in the provision of services.
- › Collaborating with other relevant clinical networks in NSLHD, PHNs, Community and NGO sectors and other LHDs to deliver innovative or alternative approaches to service delivery, including telehealth.
- › Timely access to rehabilitation/community services.
- › Improved data governance (data collection, automation and integration of medical records).
- › Investigating emerging evidence and translating this into clinical practice.
- › Examining avenues to support innovation and invest in education and research opportunities.

24.3 Recommendations

- MS1** Develop service delivery and sustainable workforce models, for all services in the Network, that take into consideration the patient journey through the continuum of care (acute, rehab, community), and distribution of workload across NSLHD facilities.
- MS2** Develop an integrated Spinal Service for all spinal conditions (spinal cord injury, cancer spine, non-traumatic spinal cord injury, spinal plastics, urology, orthotics, and deformity correction) .
- MS3** Agree on clear NSLHD data governance, collection and reporting systems, which are consistent with supra-LHD initiatives and supports individual services in quality review.
- MS4** Support the roll-out of Leading Better Value Care Tranche 2 initiatives relating to Musculoskeletal Health, Plastics/Burns, Spinal and Trauma Network services.
- MS5** In partnership with the Child Youth and Family Clinical Network, develop and implement strategies to address the transitional care needs of young people with chronic musculoskeletal, spinal or injury related disorders (spina bifida, spinal cord injury, juvenile arthritis, and scoliosis) together.

ORTHOPAEDICS IS THE SINGLE LARGEST SURGICAL SPECIALTY REPRESENTING 31% OF ALL SURGICAL EPISODES IN NSLHD HOSPITALS.



NEUROSCIENCES

25

NEUROSCIENCES

25.1 Service Description

The Neurosciences Clinical Network brings together clinicians providing both admitted and non-admitted services focusing on the prevention, diagnosis and treatment of disorders and injuries affecting the brain, spinal cord, central and peripheral nervous system and muscles. Services encompass:

Stroke services

Stroke services include acute and ongoing management of intracranial haemorrhage and neurovascular diseases such as ischaemic stroke and transient ischaemic attack (TIA). There are four stroke units in NSLHD: Hornsby, Northern Beaches and Ryde Hospitals provide primary stroke services that is non-thrombolysis/non-interventional care in dedicated stroke units, and RNS Hospital provides primary and hyper-acute (thrombolysing and endovascular interventions) care for acute ischaemic stroke and surgical management of haemorrhagic stroke. Public stroke specific rehabilitation is provided at Hornsby, Mona Vale and Ryde (Graythwaite) Hospitals.

Over
1,000
patients were admitted to NSLHD hospitals following stroke in 2017/18.



NSLHD provides four dedicated stroke units located at Hornsby, Northern Beaches, RNS and Ryde Hospitals.

Neurology services

Neurology services focus on patients with epilepsy, neuro-degenerative and genetic disorders, movement disorders, inflammatory, autoimmune and infective conditions, and paraneoplastic conditions. At RNS and Hornsby Hospitals patients are admitted under the care of specialist neurologists; at Ryde Hospital patients are admitted under the care of general physicians with specialist neurology consultation. The Northern Beaches Hospital will provide services for common neurological conditions. A rapid access clinic for TIA and stroke is provided at RNS Hospital along with general neurology and selected specialty and clinics. Non-admitted services are not currently provided at Hornsby or Ryde Hospitals.

Neurosurgery services

Neurosurgery services are provided at RNS Hospital for complex conditions including neurovascular, neuro-oncology, trauma, stroke and spinal care. As part of the NSW Health supra-LHD major trauma system and Spinal Cord Injury Service, RNS Hospital neurosurgery receives referrals from Northern Sydney, Central Coast, Hunter New England, Northern NSW and Far West LHDs. Neurosurgical consultative services are provided to Central Coast as well as Northern Sydney LHD hospitals. Patients with traumatic head injuries requiring surgical intervention are transferred to RNS Hospital, while minor head injuries are managed at Hornsby, Northern Beaches and Ryde Hospitals under the care of general medicine physicians. RNS Hospital has a dedicated neurosurgical ward, intensive care and step-down high dependency units. Multidisciplinary non-admitted clinics are provided and there are close links with the upra-LHD brain injury rehabilitation service at Royal Rehab. The neurosurgical service is a major training centre for the Royal Australasian College of Surgeons Surgical Education and Training Program, and associated fellowship programs.

Interventional Neuroradiology services

Interventional Neuroradiology (INR) services are provided at RNS Hospital and are managed as part of the Division of Surgery and Anaesthesia. The service uses image-based minimally invasive techniques including coiling of cranial aneurysms, embolisation (selective occlusion of blood vessels in the brain), vascular reconstruction or angioplasty using balloons or stents for ischaemic disease or vasospasm, and endovascular clot retrieval (ECR) for stroke caused by large vessel occlusion. ECR is provided at six hospitals across NSW with two providing a 24/7 service, while others provide limited hours services. RNS and Westmead Hospitals currently provide a weekday and alternate weekend, business hours (8am-5pm) service in a collaborative, day arrangement with a centralised referral system. Efforts to extend this service are currently being pursued.

Neurophysiology and diagnostic services

Neurophysiology and diagnostic services at RNS Hospital include advanced imaging (CT, MRI, digital subtraction angiography (DSA), and nuclear medicine) as well as nerve conduction studies, electroencephalography (EEG), evoked potentials, thermal threshold studies, reflex studies, electromyography (EMG). The neurophysiology service is provided to admitted and non-admitted patients during standard business hours. Hornsby Hospital offers a limited range of neurophysiology services including EEG and nerve conduction studies (under contract with a private provider). Northern Beaches Hospital will provide a similar range of neurophysiology services. Patients at Ryde Hospital are referred to RNS Hospital for neurophysiology services.

Neurogenetic service

Neurogenetic service at RNS Hospital provides a tertiary referral service for neurogenetic disorders for adults and cares for adolescents transitioning to adult services, with particular expertise in Parkinson's disease, mitochondrial disease, hereditary spastic paraplegia and other familial movement disorders. A weekly non-admitted clinic facilitates access to comprehensive diagnosis, including the use of biomarkers and next-generation sequencing methods, and offers multidisciplinary care. The clinic has direct access to research facilities in the Kolling Institute of Medical Research facilitating access to clinical trials and contributing to the development of genomic technologies that target the unique genetic makeup of individual patients.

25.2 Issues and Opportunities

The Neuroscience Clinical Network will focus on improving patient care through:

- › Implementation of patient reported outcome measures such as the International Consortium for Health Outcomes Measurement data sets
- › Investigating and translating emerging evidence into clinical practice and developing research capabilities through closer co-operation with the Kolling Institute
- › Focusing efforts on prevention and health promotion strategies in relation to stroke, head injury, traumatic brain injury and dementia

Stroke services

- › Local service structures, workforce and physical resources across NSLHD hospitals have led to variance in care in relation to management of patients with neurological and neurosurgical conditions. Standardising and streamlining services at each hospital provides aims to improve access to high quality care and better outcomes and experiences for all patients. This will include the development over time of the recently opened stroke unit at Ryde Hospital, timely access to hyper-acute care (thrombolysis and ECR) for eligible stroke patients, and access to rehabilitation for all stroke patients.

Non-admitted services

- › The number of patients presenting to EDs with headache, vertigo, epilepsy and other neurological disorders has increased in recent years, and patients are often admitted for monitoring or to facilitate access to diagnostic services. The expansion of selected neurology clinics at Hornsby and Ryde Hospitals would provide more efficient and complete care for a large group of neurological conditions, reduce hospital admissions, and avoid the need for some patients to travel to RNS Hospital to access non-admitted services. There are also opportunities for RNS Hospital to develop improved management models for patients who have presented with concussion.

Diagnostic services

- › Planning for non-admitted clinics and expansion of admitted services will also require consideration of access to diagnostic services including advanced imaging capabilities (CT and MRI) and neurophysiology services, particularly at Hornsby hospital.

Transitional services

- › Transitional services for young people with chronic neurological disorders: In partnership with the Child Youth and Family Clinical Network, transitional care needs of young people with chronic neurological disorders need to be explored and strategies implemented to ensure that these are addressed.

Neurosurgical services

- › A significant proportion of RNS Hospital neurosurgical patients live in regional and rural NSW. Follow up or ongoing care can be onerous for patients if they have to travel some distance to Sydney post discharge. The development of outreach and telehealth services would support earlier discharge or transfer to a hospital closer to home; support staff in other hospitals to care for post-neurosurgical patients, and reduce the need for frequent travel for follow up consultations. The service is also seeking opportunities to streamline admission processes and improve access to step down to reduce hospital length of stay and improve patient flow.
- › The RNS Hospital is seeking opportunities to develop a neurosurgery pain service and a functional neurosurgery service to treat patients with resistant neurological disorders including epilepsy, Parkinson's disease, chronic pain and spasticity, with a variety of interventions including ablative surgery, deep brain stimulation, and drug or electrical device implantation. These services are predominantly provided in the private hospital sector at this time.
- › The neurosurgical service recognises the importance of developing structured training and programs for all disciplines to support the development and delivery of contemporary, evidence-based care.

INR services

- › The demand for ECR (and other INR procedures) is increasing and the service is seeking opportunities to expand to a full 24/7 hour service at RNS Hospital. Expansion will need to consider access to resources including operating theatre time and anaesthetic support, capacity of advanced imaging (CT/MRI and DSA), intensive care services, and medical, nursing, allied health and other workforce profiles. Further work is required to optimise outcomes for patients, reduce symptom onset to treatment times for eligible stroke patients, develop measurable and objective performance indicators, and improve the classification of ECR procedures in the current coding system (Australian Refined Diagnostic Related Groups).

Neuro-genetic services

- › The [NSW Health Genomics Strategy 2017](#) outlines the importance of applying genomic technologies to improve diagnosis, prognosis and disease risk as well as inform treatment and management of patients with rare neurological diseases. NSW Health is currently negotiating a brokerage system for genetic tests (currently sent to a private lab, overseas or interstate) to be accessed through NSW Health Pathology.
- › Further development of the neuro-genetics service will position NSLHD as a state leader in genomics research, investment and technology. The neuro-genetics service proposes to develop a framework to integrate the use of genomics that may be applied in similar clinics for endocrinology, haematology, ophthalmology and immunology. Using telehealth and other modalities, the neuro-genetics service also aims to provide greater access to specialist consultation, assist GPs in the care of their patients, and minimise the time it takes to diagnose a patient with mitochondrial disease.

Data governance

- › There is considerable variation between hospitals in the collection of patient related clinical data, as well as an onerous workload associated with the manual capture and duplication of data from the electronic medical record (eMR) for disease registries and other reporting requirements. The integrity of data can be compromised, as the eMR does not support the ability to restrict who can enter highly specialised information. There is a proliferation of locally developed databases that are not readily accessible either within individual services or across NSLHD. There is limited interoperability of data systems between hospitals and services both within and outside NSLHD, which poses risks and delays when patients are transferred to another hospital. The development of clear governance and accountabilities for the collection and access to patient related clinical data is a high priority for neuroscience services.

HYPERACUTE STROKE SERVICES, INCLUDING THROMBOLYSIS AND ENDOVASCULAR CLOT RETRIEVAL, ARE PROVIDED AT RNS HOSPITAL.

25.3 Recommendations

- NS1** Standardise stroke models of care (spanning prevention, hyper-acute care and rehabilitation) across NSLHD, with specific roles for each NSLHD hospital.
- NS2** Expand the interventional neuroradiology service at RNS Hospital to a 24/7 service.
- NS3** Develop guidance on the selection of appropriate imaging and diagnostic tests in the ED for patients presenting with neurological/neurosurgical symptoms.
- NS4** Develop non-admitted services for investigation, management and follow up of patients presenting with headache, dizziness, epilepsy, and other general neurological conditions at non-tertiary hospitals (Hornsby and Ryde Hospitals).
- NS5** Develop a model of care for Parkinson's disease and other movement disorders including demand for, access to, and provision of diagnostic and highly specialised treatment services.
- NS6** Develop a framework for the provision of neurogenetic services including genomic diagnostics and new therapeutic approaches to Parkinson's disease, mitochondrial disease, hereditary spastic paraplegia and other familial movement disorders.
- NS7** Streamline the neurosurgical patient journey from referral to post discharge follow-up.
- NS8** Develop a strategy to collect, access and use clinical data to support service delivery, monitoring and improvement in clinical care.



CANCER AND PALLIATIVE CARE

The Cancer and Palliative Care Network includes medical oncology, radiation oncology, cancer genetics and palliative care. Haematology is a major partner in cancer care but is not officially part of the Cancer and Palliative Care Network. Communication with surgical oncology occurs through the Directorates and multidisciplinary teams, but there is no formal governance for surgical oncology.

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CANCER CARE

26.1 Service Description

Prevention services

Cancer care includes prevention, screening, early detection, treatment, ongoing symptom management and end of life care. Prevention services are generally provided at a supra-LHD level and include tobacco control and sun exposure programs. The national bowel, breast and cervical screening programs are managed at a supra-LHD level and are delivered locally under Primary and Community Health services (BreastScreen and cervical cancer screening) and through GPs (cervical screening). National bowel cancer screening kits are delivered directly to people's homes.

Treatment services

Treatment services include systemic therapies (chemotherapy and other infusions), radiation therapy and surgery. Surgical oncology is not part of the Cancer and Palliative Care Network but is a key component of the care process. Most public cancer related services within NSLHD are provided at the Northern Sydney Cancer Centre at RNS Hospital, with some cancer surgery provided at the other acute hospitals. RNS Hospital sponsors a [Pancreatic Cancer Centre](#) as a joint project with Surgery and Anaesthesia and North Shore Private Hospital, and which commenced in 2019.

- › **Medical oncology services** are provided via nine tumour streams (head and neck, hepatobiliary, neuroendocrine, upper gastrointestinal, colorectal, urological, breast, lung and sarcoma/endocrine); involving multidisciplinary team meetings and cancer care coordinators based at RNS, Hornsby and Ryde Hospitals. Non-admitted clinics are based on tumour streams at RNS Hospital. A cancer genetics service is based at RNS Hospital. Support services include psycho-oncology and a telephone help line.

- › **Chemotherapy and other infusion services** are provided at RNS and Northern Beaches Hospitals. Chemotherapy services for selected Hornsby Hospital patients are provided by the Sydney Adventist Hospital under a service agreement.
- › **Radiotherapy services** are provided through three linear accelerators for external beam treatment at RNS Hospital, and include superficial and brachytherapy services. The Northern Beaches Hospital provides a radiotherapy consultation service for public patients.
- › **Home support** for public cancer patients is provided through the Northern Sydney Home Nursing Service. Care provided includes medication administration, care and maintenance of central venous access, assistance with subcutaneous and intrathecal pumps, pain management, postoperative wound care and equipment loan. Home care is also provided by the Acute Post-Acute Care (APAC) service.

Private services

The private health sector is a major provider of cancer care, including both medical and radiation oncology, and provides the majority of cancer surgery for Northern Sydney residents. Private facilities include North Shore Private Hospital, Northern Cancer Institute (Frenchs Forest and St Leonards), Mater Hospital (including the Melanoma Institute of Australia), Sydney Adventist Hospital and Macquarie University Hospital. The Northern Beaches Hospital provides a mix of public and private service provision. The Dexu North Shore Private Medical Centre, currently under construction on the RNS Hospital campus, is likely to include some ambulatory cancer services.

Table 21 summarises the public and private chemotherapy and radiotherapy resources across Northern Sydney.

Table 21: NSLHD and Private Sector Chemotherapy and Radiotherapy Resources

Resource	RNS Hospital	Northern Beaches Hospital	Mater Hospital	Macquarie University Hospital	NCI/CCA St Leonards	NCI/CCA Frenchs Forest	Sydney Adventist Hospital	Total
Infusion spaces	36	12	13	15	27	11	34	148
Linear accelerators	3		2	2		1	2	10
Brachytherapy ¹	1		1					2
Gamma knife ²				1				1
Tomotherapy ³							1	1

Source: NSLHD Cancer and Palliative Care Network Note: Northern Cancer Institute / Cancer Care Associates (NCI/CCA)

¹ Brachytherapy uses a sealed radiation source, or "seed", to deliver treatment directly to the area requiring treatment.

² A gamma knife is a high intensity gamma radiation therapy used to treat brain tumours.

³ Tomotherapy is a form of computed tomography (CT) guided intensity modulated radiation therapy requiring a specialised linear accelerator.

Research

Research, including clinical trials, is a core component of cancer and palliative care. Sydney Vital is the translational cancer research centre-based at RNS Hospital and is funded by the Cancer Institute of NSW and the University of Sydney. The Northern Sydney Cancer Centre is a leader in immunotherapy treatment and research.

Non-government organisations

A number of non-government organisations (NGOs) provide support services and/or forums for patients with a cancer diagnosis and their carers. These organisations include Cancer Council, CanRevive (support for the Chinese community) and tumour specific groups such as the North Shore Prostate Cancer Support Group. The McGrath Foundation provides funding to NSLHD to employ breast care nurses to support patients with a breast cancer diagnosis receiving treatment and support at NSLHD hospitals.

26.2 Issues and Opportunities

Navigating public and private services

- A challenge is how best to provide care across both sectors that is patient-centred but also manages potential conflicts of interest for providers. Boundaries between public and private services for example in the deployment of cancer care coordinators are not always clear and have financial implications such as the engagement of public resources for private patients.
- Chemotherapy at Hornsby Hospital is currently provided under a contract with Sydney Adventist Hospital (SAH).

High out-of-pocket costs

- Patients using private cancer services experience higher costs for specialised imaging, for drugs not funded under the Medicare Benefits Scheme (MBS) or Pharmaceutical Benefits Scheme (PBS) and for other services. While most chemotherapy is provided to patients without an insurance gap, patients are often on a range of expensive medications to manage symptoms which may not be on the PBS (public patients receiving chemotherapy at Sydney Adventist Hospital as part of the NSLHD contract report referral to private rather than public support services with greater out-of-pocket costs than in the public sector).

Patient and treatment complexity

- The increasing complexity of patients and treatments combined with increased survival rates can lead to increased hospital readmissions and re-presentations to EDs, requiring skilled management in those settings or adoption of alternative service models.
- Demand for psycho-oncology services both during and after treatment exceeds ability to provide. Staff estimates that around 20 per cent of cancer patients will require psychological support.
- A range of new treatments in areas such as immunotherapy and cancer genetics have the potential to change care options available.

Service concentration at RNS Hospital

- › Patients managed in RNS Hospital could, in some cases, be transferred to a lower acuity environment closer to home with support by general physicians or community health services. This would require strong relationships with the Primary and Community Health directorate to embed community support into the cancer model of care.
- › The provision of a wider range of cancer services at or near the Northern Beaches Hospital will have an impact on referral to RNS Hospital.
- › Outreach, telehealth and home support models have been proposed to enable NSLHD residents to receive elements of their cancer care closer to home. Chemotherapy provision is being planned into the redevelopment of Hornsby Hospital.
- › Patients referred from other parts of NSW to NSLHD for treatment often encounter difficulties in obtaining home support locally and arranging this can be problematic for NSLHD staff.

Infrastructure requirements

- › Radiation oncology provision at RNS Hospital operates under high demand. The Dexu North Shore Private Medical Centre development adjacent to RNS Hospital and the redevelopment of Concord Hospital may result in some temporary reduction in demand at RNS Hospital. Planning is required to ensure access to public provided services without unnecessary duplication.
- › Public chemotherapy chair requirements are projected to increase from 39 to 44 chair equivalents by 2026, excluding capacity currently used for haematology and other infusions. Six additional chairs are planned for Hornsby Hospital. Home based chemotherapy is offered in some jurisdictions and in the private sector, but requires a nurse in attendance during the entire procedure.
- › Constrained clinic space at the Northern Sydney Cancer Centre limits ability to manage growth in demand and to maintain quality and service coordination in light of ongoing haematology demand.

Service quality and gaps

- › Regular quality reports from the [Cancer Institute \(Reporting for Better Cancer Outcomes\)](#) and the Bureau of Health Information have raised issues such as low-volume surgery and unwarranted clinical variation. Action is underway to address patient reported issues, coverage of multidisciplinary teams, variations in certain surgery rates and volumes, radiotherapy regimens, screening and prevention and clinical trials recruitment. Best practice needs to be standardised to continue to address these variations.
- › There is variation in patient cases considered by multidisciplinary teams (MDT) and no melanoma MDT in Northern Sydney. Most melanoma care is provided by a private specialist unit associated with the Mater Hospital.

Information management

- › Data management in cancer and palliative care has been a problem, with challenges in extracting accurate, consistent and detailed data on cancer services in NSLHD. There have been a range of disparate data systems with limited interoperability of data, meaning data is siloed in service areas with limited opportunity for data collaboration and system reporting (for example to accurately determine demand and workload and inform future infrastructure requirements). The challenges are largely due to resourcing, information system and governance issues but these issues are being improved by the rollout of the [Medical Oncology Information System \(MOSAIQ\)](#).

Clinical trials

- › Clinical trials should be a core component of cancer treatment. NSLHD is currently below the NSW state benchmarks in enrolling patients into clinical trials. There is potential for increased trials as new treatments become available. Clinical trials provide an opportunity for service revenue, but require ability to employ staff in a timely way and provision of space for interviews and treatment. Improved governance is required around clinical trials.

CANCER CARE INCLUDES PREVENTION, SCREENING, EARLY DETECTION, TREATMENT, ONGOING SYMPTOM MANAGEMENT, AND END-OF-LIFE CARE.

26.3 Recommendations

- CP1** Develop a NSLHD Cancer Plan that sets direction for cancer services into the future.
- CP2** Review the provision of psycho-oncology services across NSLHD against documented best practice and with consumer input, and identify strategies to maximise access within resources.
- CP3** Develop an operational plan for non-admitted Cancer Services across the Northern Sydney Local District, to include a hospital-based plan for referrals, multidisciplinary team meetings, service provision, models of care and hospital governance.
- CP4** Develop and implement strategies to enhance clinical trials for NSLHD which draw on volume of clinical trials, activity, staffing and resource requirements (day therapy, ethics, pharmacy), to optimise patient benefit and participation and coordinate with private providers.
- CP5** Progress the implementation of the MOSAIQ medical oncology information system and embed it as business as usual within cancer and haematology services and promote continuous improvements for users.
- CP6** Standardise best practice care by addressing unwarranted clinical variation identified as part of annual Reporting for Better Cancer Outcomes produced by the Cancer Institute NSW.



A NEW 10-BED PALLIATIVE CARE UNIT CURRENTLY UNDER CONSTRUCTION AT MONA VALE HOSPITAL WILL ENABLE PEOPLE TO BE CARED FOR CLOSER TO HOME.

HAEMATOLOGY

27.1 Service Description

Although Haematology is not formally part of the Cancer and Palliative Care Network, it is important to identify the service details and requirements given their high cancer workload and shared use of the day treatment centre at RNS Hospital. It is being included in the Cancer and Palliative Care chapter with its location in the network structure to be decided.

Diagnostic and clinical haematology services treat patients with a range of malignant blood disorders including leukaemia, lymphoma and myeloma, along with non-malignant disorders such as clotting and bleeding problems, low blood counts and impaired immunity. RNS Hospital conducts autologous and allogeneic (related and unrelated) bone marrow transplants and provides both admitted and non-admitted care. It is one of six sites in NSW that undertakes both forms of bone marrow transplantation.

The Day treatment unit at RNS Hospital is shared with medical oncology. It provides chemotherapy, transfusions, apheresis and venesection. The haematology team provide a consultation service across the NSLHD, and relationships are maintained with a number of rural centres.

Public non-admitted services are provided at RNS Hospital in the Northern Sydney Cancer Centre, with consultants also seeing some patients in private rooms in the North Shore Private Hospital.

Iron-deficient patients are able to receive Ferrinject injections at home through the Acute Post-Acute Care (APAC) service.

The Northern Beaches Hospital offers haematology at role level 5, including admitted patient consultation, day therapies and non-admitted services.

27.2 Issues and Opportunities

Increasing workload of older patients

- › Patients are increasingly surviving blood cancers, particularly myeloma, and returning for further treatment, leading to an increase in average patient age and an increasing workload. The haematology department reports a high level of stress in meeting documentation requirements along with a growing workload.

Shift in activity from admitted to non-admitted settings

- › Capacity in the day treatment unit is managed on a day-to-day basis, with patients allocated to 26 chairs with the ability to flex up and down depending on demand. Haematology is reported to account for a large proportion of day therapy unit chair requirements, which is now an operational issue for both haematology and oncology. Patients awaiting blood transfusion due to space limitations in the Day Treatment Unit sometimes deteriorate and are admitted to a bed through ED.
- › The haematology non-admitted workload is limited by staff available. There is the potential to manage more patients at home with safe protocols and skilled staff, although this has not been broadly undertaken in NSW. Currently APAC do iron infusions, removing some demand from the day unit.
- › The general shift in treatment from the admitted to the non-admitted environment (for example stem cell harvesting, transfusions) has required employment of skilled nursing and medical staff in the day treatment environment, but this has not always occurred. Establishment of a haematology nurse care coordinator will improve coordination of care between admitted, non-admitted and the community; prevent hospital admissions and enhance patient satisfaction and quality of care.



Multidisciplinary teams

- › Multidisciplinary teams have not been formally established in haematology, although coordination is mainly required across nursing and allied health rather than with other medical or surgical specialties. However, weekly meetings review pathology, imaging and clinical cases.

Information management

- › As with chemotherapy, there are major data issues with day therapy procedures for haematology and electronic reporting is not available. This makes it difficult to quantify current throughput and distinguish trends, or to project future demand. The recently implemented MOSAIQ information system will provide more comprehensive activity information.
- › Increasing documentation requirements and accreditation demands are reported to place pressure on clinicians, with electronic medical record and prescription systems being more time consuming. This has placed stress on the work balance and cohesion of the staff specialist workforce.

Costs of treatment

- › Haematology patients tend to be expensive due to longer stays (especially bone marrow transplants), a lower proportion of shorter-term palliative patients and high need for often costly drugs as well as transfusion support.

Haematology Clinical Network

The Cancer and Palliative Care Network does not currently formally include responsibility for haematology. The haematology department at RNS Hospital is currently working to improve integration with palliative care and infectious diseases departments.

27.3 Recommendations

- CP7** Identify a clinical network location for haematology and integrate governance accordingly.
- CP8** Prepare a service delivery plan for malignant haematology across NSLHD to address growth in demand, multidisciplinary team care and service integration, consistent with NSW cancer care guidelines.

PALLIATIVE CARE

28.1 Service Description

The Cancer and Palliative Care Network oversees the planning and provision of palliative care services for the population of NSLHD in line with the [NSW Ministry of Health policy](#). Palliative care sub-acute admitted care, consultation and community services have been provided to NSLHD residents by HammondCare under a service level agreement since 2009. Current NSLHD services include:

Acute care

- HammondCare palliative care specialists and nurses provide consultation and inreach at Hornsby from Neringah Hospital and at Ryde from Greenwich Hospital. End of life care nurse coordinators are located at Hornsby and Ryde Hospitals, although separate from specialist palliative care service. The RNS Hospital Palliative and Supportive Care Department works collaboratively with HammondCare to meet essential needs of acute patients admitted under medical and surgical teams at RNS Hospital (there is no planned palliative care service at the Northern Beaches Hospital, with referral of identified patients to non-admitted HammondCare services based at Mona Vale Hospital).

Sub-acute care

- Sub-acute care is provided by HammondCare from 22 beds at Greenwich Hospital and 19 beds at Neringah Hospital. A 10-bed palliative care unit at Mona Vale Hospital is currently under construction and is due to open in 2019/20.

Non-admitted services

- Non-admitted services include medical and allied health clinics at Greenwich, Neringah and Mona Vale Hospitals. There is also a nurse practitioner clinic at Greenwich Hospital and two palliative care clinics at RNS Hospital to integrate care for patients with upper gastrointestinal or lung cancer, with plans for a weekly nurse practitioner clinic to support early integration of palliative care in the patient journey.

Community (at home) care

- Care co-ordination, specialist palliative care advice and hands-on care provided by HammondCare and Northern Sydney Home Nursing Service (NSHNS) from bases at Greenwich, Neringah and Mona Vale Hospitals.
- Palliative Care home support packages available for 48 hour care at the very end of life, provided by HammondCare.
- Palliative care patients in residential aged care facilities are supported by an Aged Care Link Nurse.

Bereavement counselling

- Bereavement counselling is available for families of patients of HammondCare.

Adolescent and young adult hospice

- › An adolescent and young adult hospice has been approved for development on the old Manly Hospital site from 2020.

Proposed service delivery model

- › The palliative care service across NSLHD is proposed to include the following components:
 - › Patient management under specialist palliative care physician and multidisciplinary teams in acute hospitals (apart from the Northern Beaches Hospital), community and the sub-acute units.
 - › Inreach to acute services including capacity to admit palliative care patients to acute hospitals and provide consultation support.
 - › Provision of care in hospital-based clinics in conjunction with other specialties, in the patient's place of residence or other community setting.
 - › Supportive care at home in collaboration with GPs, nurses and allied health
 - › Advance care planning.
 - › Grief and bereavement support and counselling.
- › NSLHD proposes to provide palliative care under a three hub model. Hubs will service the geographic areas of Hornsby Ku-ring-gai, North Shore Ryde and Northern Beaches. Each hub will encompass in-reach to acute care, access to sub-acute beds, non-admitted and home care and access to respite care. The hubs will be governed and supported by an operational team comprising medical, nursing and allied health managers, with strategic oversight provided by the Cancer and Palliative Care Network.

28.2 Issues and Opportunities

Vision for palliative care

- › The lack of an agreed vision and organisational structure for palliative care has been an issue in the past, although work has been underway to improve this through a process including HammondCare, the Sydney North Primary Health Network and the Primary and Community Health directorate to articulate a shared vision of palliative care services in NSLHD. The palliative care agreement with HammondCare requires review towards an agreed LHD-wide service model.

- › The vision, which aligns with NSW Health policy, is that all patients who require it will receive seamless access to high quality, integrated palliative care that is adaptive and responsive to their needs and to those of their families and carers. A model of care has been proposed including five key components of the patient journey including referral, access and initial contact; assessment; service delivery; transfer of care; and family/bereavement. The Cancer and Palliative Care Network's direction for palliative care is to develop a seamless service that considers outcomes that matter to patients, the experience of receiving care, the experience of providing care and the most effective and efficient care provision.
- › It will be important for a palliative care clinical services plan and operational plan to address:
 - › Numbers of care providers appropriate to population need, taking into account private sector provision.
 - › How such a service will integrate with private hospitals and care providers.
 - › Incorporation of innovative approaches to care such as telemedicine as usual care.
 - › Integration of research, teaching, education and quality improvement as core activities across palliative care in NSLHD.

Compassionate hospitals program

- › This program aims to support patients who die in hospital and is managed through Clinical Governance and the End-of-life committee, based on guidance from the [NSW Clinical Excellence Commission](#). Program components are being finalised and staff education will commence in 2019.

Mona Vale Hospital

- › A priority for the Network will be the establishment of the new sub-acute unit on the Mona Vale Hospital site and the articulation of its interface with existing palliative care services and the Northern Beaches Hospital. Clarity is required on how the Northern Beaches Hospital will provide palliative and end-of-life care and on the referral process from the new hospital to the unit at Mona Vale Hospital.

Bereavement

- › While bereavement services are currently provided through HammondCare, a NSLHD Bereavement Committee seeks to develop further services in the case of complex bereavements. The management of bereavement will be a component of the NSLHD palliative care plan.

28.3 Recommendations

- CP9** Develop a palliative care clinical plan for NSLHD based on an agreed model of care across the LHD and networked with public, non-government and private sector partners. This will include an endorsed corporate and clinical governance model, formal contract management with service partners and agreed care processes.
- CP10** Prepare a palliative care operational plan from the clinical plan that identifies annual goals for funding requirements, staffing, education and participation in clinical trials, along with other components to implement strategic directions in the clinical plan.

- CP11** Expand the Compassionate Hospitals Program to support patients who die in hospital and their families and carers, in partnership with RNS Hospital Intensive Care services, NSLHD Clinical Governance and the End-of-life committees.

- CP12** Establish network guidance on the establishment and operation of the Mona Vale palliative care unit consistent with an LHD model of care and referral pathways, in partnership with Mona Vale Hospital.



REHABILITATION AND AGED CARE

REHABILITATION

29.1 Service Description

Rehabilitation Medicine is the specialty responsible for diagnosis, assessment and management of an individual with a disability due to illness or injury. Inpatient and non-admitted rehabilitation services are provided from Hornsby, Mona Vale, RNS, and Ryde Hospitals as well as at Royal Rehab. Some public rehabilitation from Greenwich Hospital.

Admitted rehabilitation services

- › Two 20-bed wards at Hornsby Hospital, with an increase to 56 beds planned as part of the hospital redevelopment.
- › Two wards totalling 56 beds at Mona Vale Hospital.
- › The 64-bed Graythwaite Rehabilitation Unit at Ryde Hospital, including rehabilitation for severe burns patients from other LHDs.
- › An in-reach rehabilitation model of care at RNS Hospital which provides support for early rehabilitation to suitable patients in the acute setting.
- › 20-bed spinal cord injury and 16-bed brain injury specialist rehabilitation wards at Royal Rehab, serving a catchment beyond NSLHD as a supra-LHD service.

Non-admitted services

- › Non-admitted services have developed with varying models in place across the Local Health District as a result of variations in leadership and governance:

- › Hornsby, RNS and Ryde Hospitals operate a range of general and specialised non-admitted clinics, while there is no non-admitted rehabilitation services currently provided at Mona Vale. Generalist rehabilitation clinics include those for stroke or orthopaedic rehabilitation, reconditioning and continence. Specialist clinics include those for traumatic brain or spinal cord injury at Royal Rehab, refracture prevention and sexuality at Ryde and for spasticity, services for amputees and Parkinson's disease at Hornsby Hospital.
- › Home-based rehabilitation services are provided by Royal Rehab to NSLHD residents while Greenwich Hospital provides home-based rehabilitation services to residents of the Lower North Shore.

Assistive Technology and Seating Service

- › The Northern Sydney LHD Assistive Technology and Seating Service, based at Macquarie Hospital, is a part of the NSLHD Clinical Technology Service staffed by rehabilitation engineers, seating therapists (occupational therapist or physiotherapist), and rehabilitation engineering technical officers. Services mostly relate to wheelchair and specialised seating systems, but other assistive devices are covered as well. The service, coordinated by the State Spinal Cord Injury Service, has a supra-LHD role for adults with spinal cord injury. Metropolitan residents with specialist medical reviews at RNS Hospital or Royal Rehab are eligible for this service.



General inpatient rehabilitation services are located at Hornsby, Mona Vale and Ryde Hospitals, and specialist rehabilitation is located at Royal Rehab.



29.2 Issues and Opportunities

Private sector supply

- › Private hospitals accounted for just under 70 per cent of all overnight rehabilitation episodes for Northern Sydney residents in 2017/18. Ryde Hospital was the second highest but accounted for one-tenth of the volume of private hospitals. The private share continues to grow with the opening of new facilities, including private beds at Greenwich Hospital and Royal Rehab. Public facilities tend to have higher proportions of patients with stroke and brain dysfunction, along with orthopaedic fractures.

Standardisation of Models of Care

- › Both admitted and non-admitted rehabilitation services have developed with inconsistencies in access and different models in place across NSLHD as a result of variations in leadership and governance. Rehabilitation for chronic disease, such as respiratory and cardiac illnesses, is managed separately through the Primary and Community Health directorate. Specialist inpatient and non-admitted rehabilitation services are provided by the Affiliated Health Organisations Royal Rehab and HammondCare through service agreements. Recent consultations indicated the need to:
 - › Improve patient-centred care in areas such as better engagement of carers, service provision hours that match patient and carer needs, improved access to home-based rehabilitation services and improved coordination of care between hospital and community models.
 - › Address specific service gaps such as reconditioning services for frail patients, rehabilitation services for younger (aged under 65 years) patients, mental health services for older patients, input from palliative care, and improving information on services available for consumers.
 - › Manage discharge to reduce delays under My Aged Care and the NDIS with timely transfers to rehabilitation, including to private providers and for patients who live outside NSLHD.

- › The recommended service model is to have in each sector a critical mass of centre-based day rehabilitation, home-based rehabilitation, non-admitted clinics, and specialist rehabilitation clinics or programs. It will be important to continue to work towards a standardisation of best practice rehabilitation models of care across all NSLHD services, including referral guidelines, pathways and transfer processes, consistent with NSW service principles and models of care. It will be important to work with the Northern Beaches hospital in relation to the continuum of care between the acute and community services.

Rehabilitation and Dialysis

- › A review of admitted patient activity highlighted an average of 25 rehabilitation admissions per year across NSLHD acute hospitals of patients with kidney disease requiring dialysis. In 2016/17, the incidence grew to 61 admissions with each patient staying an average of 16.2 days. This may underestimate the number of patients who would benefit from admitted rehabilitation but were not admitted due to dialysis requirements.
- › Prior to the transfer of services from to the new Northern Beaches Hospital, rehabilitation patients requiring dialysis could access services at Mona Vale Hospital. Patients admitted for rehabilitation now need to be transported to other hospitals for dialysis but this often extends the time required in rehabilitation or, in some instances, presents a barrier to accessing rehabilitation.

29.3 Recommendations

- RA1** Standardise best practice admitted, non-admitted and home-based rehabilitation models of care across all NSLHD services, including referral guidelines, pathways and transfer processes, consistent with NSW service principles and models of care.
- RA2** Implement strategies that support access to rehabilitation for patients who require dialysis.

30

AGED CARE

30.1 Service Description

The acute hospitals within NSLHD provide a range of admitted and non-admitted aged care services. Acute hospital services operate on a model of collaborative multidisciplinary geriatric care with local provision of the core services encompassing:

Acute care

Acute services include shared care or dedicated aged care ward, stroke unit, geriatric consultation service, orthogeriatric service, and access to psychogeriatric consultation:

- › Older patients presenting to ED may be seen by the Aged Services Emergency Team (ASET) who undertake multidisciplinary assessments and care planning. At Ryde Hospital this function is provided by the Acute Post-Acute Care service.
- › Orthogeriatric models (for the care of frail, older orthopaedic patients) have, to varying degrees, been developed at Hornsby and RNS Hospitals, and a limited orthogeriatric service operates at Ryde Hospital.
- › There are different models of acute admitted geriatric care in NSLHD hospitals:
 - › At Hornsby Hospital, the acute care of the elderly (ACE) model of shared care sees patients admitted into an ACE ward (or beds) and jointly cared for by the geriatric team and the admitting specialty team.
 - › At Ryde Hospital, for patients requiring specialist geriatric advice or management, the admitting team requests consultation services from the geriatric team. This automatically occurs for orthopaedic admissions where the patient is aged over 65.

- › At RNS Hospital patients are admitted into an acute geriatric ward under the care of specialist geriatricians; geriatric consultation and liaison services are offered to patients admitted under other specialty services.
- › The Northern Beaches Hospital is required to provide emergency, admitted and non-admitted geriatric care to public patients with management by a geriatrician and a multidisciplinary team.

Hospital avoidance

Hospital avoidance programs include targeted interventions to keep people well and out of hospital, such as osteoporosis re-fracture prevention and falls prevention clinics and groups.

- › There is a specialist geriatric outreach service to residential aged care in each sector: the Geriatric Rapid Acute Care Evaluation (GRACE) program at Hornsby, the Aged Care Rapid Response Team (ARRT) at RNS and Ryde Hospitals, and the Beaches Rapid Access to Care of the Elderly (BRACE) program based on the Mona Vale hospital campus. The ARRT and BRACE services also provide support to people in their own home.

Non-admitted care

Non-admitted care services include hospital-based, community and home-based services:

- › Geriatric clinics are provided at Hornsby, RNS and Ryde Hospitals and at the Brookvale and Mona Vale community health centres including clinics for geriatric assessment, falls risk assessment and management, memory (for assessment for dementia) and continence.

- › Commonwealth Home Support Program-funded nursing and allied health services are provided by Northern Sydney Home Nursing Service and community-based allied health providers. Community Packages (or Compacts) provide a short-term package of care designed to help patients gain independence and prevent admission to hospital. Transition Care services provide care either in the home or in a residential setting in an aged care facility.

Subacute services

- › While there are currently no designated sub-acute aged care services in NSLHD, a 10-bed geriatric evaluation and management (GEM) service will be collocated with a new palliative care unit as part of the Mona Vale hospital campus redevelopment. A maintenance level of care is provided in all hospitals where a patient is awaiting residential aged care placement, while a significant proportion of rehabilitation admissions are for “restorative” care.

Aged care research

- › The National Health and Medical Research Council (NHMRC) Cognitive Decline Partnership Centre, led by Professor Sue Kurrle at Hornsby Hospital, focuses on improving the care of people living with dementia.
- › The Curran Ageing Research Unit, embedded within the Rehabilitation and Aged Care Service at Hornsby Hospital, is involved in several international clinical drug trials for dementia.
- › The John Walsh Centre for Rehabilitation Research, based at the Kolling Institute and led by Professor Ian Cameron, focuses on research and education in rehabilitation and injury-related disability and recovery from injury in older people, falls prevention, rehabilitation after hip fracture and assessment of quality of life in frail older people.
- › The Penney Ageing Research Unit at RNS Hospital and the Kolling Institute, led by Professor Sarah Hilmer, conducts basic, clinical, population and implementation research to optimise quality use of medicines by older people.

By 2026 the NSLHD population aged over 70 years will have increased by 35.4% and those aged 85 years and over will have increased by 20.7%.

30.2 Issues and Opportunities

Population growth and ageing

- › The older population of Northern Sydney continues to grow and Ryde Hunters Hill stands out as an area of particular need.
- › By 2026 the Northern Sydney population aged 70+ will have increased by 35.4 per cent and those aged 85 and over will have increased by 20.7 per cent. The fastest growth has been in Ryde Hunters Hill. According to the 2016 census the proportion of the population aged 65 and over with a profound or severe disability ranged from 14.5 per cent on the Lower North Shore to 21.8 per cent in Ryde Hunters Hill.
- › Dementia is now the second leading cause of death nationwide, and the first for females. The estimated NSLHD population with dementia is projected to increase by over one-quarter from 14,623 in 2016 to 18,530 by 2026.
- › NSLHD EDs receive an average of 45 patients aged 85 and over per day, which represents a population presentation rate of 640 per 1,000 population aged 85 and over.
- › The proportion of admitted acute bed days accounted for by patients aged 85 and over in 2016/17 ranged from 16 per cent at RNSH to 43 per cent at Ryde (where three-quarters of all acute beds are occupied by patients aged 70 and over, despite that hospital having a small geriatric workforce).

Partnerships for complex health needs

- › The Rehabilitation and Aged Care Clinical Network has worked in partnership across the LHD and with a number of external agencies particularly the Sydney North Primary Health Network (SNPHN) and other clinical networks.
- › The Hospital Avoidance Programs for Older People working group is a partnership between each of the specialist geriatric outreach services to residential aged care in NSLHD, together with APAC, Northern Sydney Home Nursing Service, SNPHN and NSW Ambulance. The group has established a common dataset and tools to monitor and evaluate hospital avoidance programs and is now working with the Acute and Critical Care Medicine Clinical Network towards better understanding any variation in interactions of over 9,000 residents of aged care facilities with NSLHD hospitals, using an analytics tool developed for this purpose.

- Other partnerships have addressed the health journeys of people with dementia and their carers and implementation of the Asia Pacific Clinical Guideline for Frailty as part of the integrated care approach. This work is being conducted in partnership with SNPHN and is linked with falls prevention and health promotion in NSLHD. The work will include initiatives in primary care and community-based services, pre-admission for surgery, as well as for other admitted patients.
- It will be important for the RACS Network to continue partnerships to improve the health journey for older people with complex health needs (including frailty, cognitive impairment and dementia) and their carers, consistent with NSW policy including the Dementia Service Framework.

Specialist geriatric outreach

- The BRACE specialist geriatric outreach service to residential care for Northern Beaches residents was established and linked to falls prevention initiatives as a result of the Hospital Avoidance Programs for Older People working group partnership. The hospital avoidance program will need to establish a working relationship with the Northern Beaches Hospital and manage emerging issues. The development of a model of care and subsequent evaluation of this program will inform the development of a standardised, efficient and effective model of care for specialist geriatric outreach services for older people living in the community.

Management of dementia and delirium

- Recent consultation noted there has been an increase in patient complexity such as dementia, delirium or drug or alcohol dependence requiring greater time and resources for care planning and support. It will be important to implement best-practice principles and models of care to improve the experiences and outcomes of patients with dementia and confused hospitalised older persons across NSLHD.
- The NSLHD Delirium clinical guidelines were implemented following an initial 2012 audit of the treatment of patients with delirium and dementia in NSLHD hospitals. By 2018, a follow-up audit found there has been a notable improvement in the recognition, investigation and management of delirium for patients while in NSLHD hospitals. The

NSLHD Rehabilitation and Aged Care Network has worked in partnership with Sydney North Primary Health Network, Community Care Northern Beaches and Dementia Australia to improve the health journeys of people with dementia and their carers through the establishment of the Northern Sydney Dementia Collaborative. This will involve working with local councils to establish dementia friendly communities as promoted by Dementia Australia.

Geriatric evaluation and management (GEM)

- GEM is defined as sub-acute care in which the primary clinical purpose or treatment goal is improvement in the functioning of a patient with multidimensional needs associated with health conditions related to ageing, and aims for the person to be able to live at home independently for as long as possible. Development of a model of care and subsequent evaluation of the implementation of the GEM unit at Mona Vale hospital from 2020 will also provide insight into its contribution to the broader aged care services.

30.3 Recommendations

- RA3** Continue partnerships to improve the health journey for older people with complex health needs (including frailty, cognitive impairment and dementia) and their carers, consistent with NSW policy including the Dementia Service Framework.
- RA4** Refine and monitor a standardised, efficient and effective model of care for specialist geriatric outreach (hospital avoidance) services for older people living in the community (including residential care) across NSLHD in order to respond to growth in demand. This will include establishing a new working relationship with the Northern Beaches Hospital and managing emerging issues.
- RA5** Implement best-practice principles and models of care to improve the experiences and outcomes of patients with dementia and confused hospitalised older persons across NSLHD.
- RA6** Plan for and commission a geriatric evaluation and management (GEM) unit at Mona Vale Hospital consistent with NSW models of care, monitor its contribution to broader aged care services and determine appropriateness of the model for implementation elsewhere in NSLHD.





HOSPITALS AND AFFILITED HEALTH SERVICES



HOSPITALS

31

HORNSBY KU-RING-GAI HOSPITAL

31.1 Service Description

Hornsby Ku-ring-gai Hospital, with a total of 308 beds, is classified as a major metropolitan hospital and provides acute, sub-acute, mental health and community health services. When the hospital redevelopment is completed in 2021, Hornsby Hospital will have a total of 381 beds.

Hospital and health services

- Acute services include emergency, maternity, paediatrics, and adult medical and surgical services. Most acute services are provided at role delineation level 4 although core services are resourced to provide level 5 to support geriatric medicine, rehabilitation and selected surgical sub-specialties (ear, nose and throat (ENT), general surgery, orthopaedic surgery, and urology).
- Some medical oncology services (chemotherapy) for public patients are purchased from Sydney Adventist Hospital.
- The Rehabilitation and Aged Care service has a strong research focus and a national reputation in the area of cognitive decline.
- The Mental Health Services include a psychiatric emergency care centre (PECC, 4 beds), an adult acute admitted service (35 beds), the Brolga unit for children and adolescents (12 beds), and the intensive care service (12 beds). The latter two units have a supra-LHD role providing services to Central Coast as well as NSLHD residents.
- Community health services are located on the Hornsby Hospital campus, at Pennant Hills and Turramurra (Hillview) and in smaller centres at Galston, Berowra, Brooklyn, and Wisemans Ferry.
- Early Childhood Health Centres are located at Hornsby, St Ives, Berowra, Galston and Pennant Hills with the latter three collocated with the Community Health Centres. In addition, the Koala Family Care Centre is located at Hornsby Hospital and provides secondary level services for the catchment area.
- Oral Health and BreastScreen are located on the Hornsby Hospital campus along with the NSLHD Public Health Unit, a General Practice Training Unit and its associated Aboriginal Health Clinic (Bungee Bidge).

Private health care in Hornsby Ku-ring-gai

In addition to the public hospital and services, private acute hospital services are provided by the Sydney Adventist Hospital (524 beds) in Wahroonga. Private sub-acute rehabilitation services are provided at Lady Davidson (115 beds) and Mt Wilga (119 beds) private hospitals. There are 37 residential aged care facilities with a total of 2,549 beds in the Hornsby Ku-ring-gai catchment.

Catchment and activity

The nominal catchment of the hospital is the local government areas of Hornsby and Ku-ring-gai. Most of the acute medical and surgical activity is for patients who live in these two LGAs; located in the north west of the district, Hornsby Hospital also attracts patients from Western Sydney LHD (predominantly from Baulkham Hills LGA) accounting for 10.1 per cent of unplanned and 15.7 per cent of planned episodes. Central Coast residents also access selected services at Hornsby Hospital and account for 7.5 of planned episodes.

Table 22 sets out a summary of activity and a range of performance indicators for Hornsby Hospital.

Table 22: Hornsby Hospital Activity and Performance 2013/14 to 2017/18

	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Emergency Presentations	36,577	37,867	37,741	39,379	40,758
Ambulance	8,873	8,823	8,064	8,458	8,869
% brought to ED by Ambulance	24.3%	23.3%	21.4%	21.5%	21.8%
ETP All ages (target 80%)	72%	76%	72%	79%	76%
Admitted Episodes	16,961	17,295	18,496	20,700	21,295
Same day (%)	23.2%	24.6%	25.6%	28.4%	28.1%
Paediatric episodes	1,922	1,786	1,916	1,940	2,093
Occupied bed days	80,769	84,081	87,092	90,542	91,755
ON ALOS (days)	6.1	6.4	6.2	5.9	5.7
ON ALOS (days) – Acute only	4.1	4.1	4.1	3.9	3.9
Births	1,167	1,174	1,190	1,171	1,254
Non admitted occasion of service	74,735	111,333	131,745	137,380	141,351

Source: NSLHD Performance Analytics and Business Intelligence Unit

Note: Episodes include All ABF Streams, Acute; Mental Health (and Drug and Alcohol) and other or sub-acute and non-acute services such as rehabilitation, psychogeriatric care, maintenance and palliative care. Episodes exclude renal dialysis and unqualified neonates, and episodes entirely within the ED.

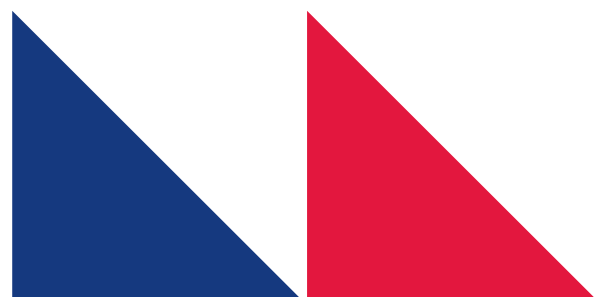
31.2 Issues and Opportunities

Realising benefits of stage 1 redevelopment

- Stage 1 redevelopment of Hornsby Hospital was completed in 2015 delivering a new building accommodating a perioperative unit, eight operating theatres, two endoscopy rooms and surgical patient accommodation along with some clinical support services. The benefits of this new resource have not yet been fully realised. In collaboration with the Surgery and Anaesthesia, Musculoskeletal, and Child Youth and Family Clinical Networks, Hornsby Hospital will explore opportunities to increase the provision of selected surgical services through the redistribution of activity between RNS, Ryde and Hornsby Hospitals. In the first instance this will include investigation of the merits and options of expanding or providing urology, plastics, ENT, and minor trauma surgical services, encompassing the associated pre-and post-surgical care that is a comprehensive service rather than just the provision of the surgical intervention itself.

Stage 2 redevelopment

- Stage 2 of Hornsby Hospital redevelopment is underway with completion expected in 2021. The redevelopment will deliver a new and expanded medical imaging department, a medical assessment unit, intensive care, a coronary care and cardiac investigations unit, a transit unit, new medical wards, a refurbished and expanded ED, a helipad, an outpatient centre and new education and retail space. Since the approval of the stage 2 Hornsby Hospital redevelopment additional monies have been made available for [stage 2a] services including renal dialysis, chemotherapy, oral health, allied health, GP Unit and Bungee Bidgel, as well as fitout of sub-acute (rehabilitation) wards and refurbishment of Psychiatric Emergency Care Centre (PECC).
- Prior to the commissioning of the new facilities work is underway, in collaboration with the Acute and Critical Care Medicine, Neurosciences, and Cardiothoracic and Vascular Health Clinical Networks, to develop contemporary models of care for ED short stay, medical assessment unit and medical sub-specialties.



- › New non-admitted services will include, as part of the LHD-wide expansion, new dialysis chairs and chemotherapy services. In addition to these developments and the consolidation of non-admitted allied health services in a single location, there are opportunities to explore the development of new models that support the delivery of care in non-admitted settings reducing the number of patients who need admission to hospital. Early work is underway to explore opportunities for the provision of selected non-admitted neurology services.
- › While there were no planned increases to the role delineation of services at Hornsby Hospital, a number of clinicians have identified a need to investigate and determine any changes that might arise from the redevelopment or be appropriate in light of changes in demand.
- › Capital funding for the stage 2 redevelopment did not allow for the inclusion of an acute mental health admitted service for older people and this remains a high priority for the Mental Health Drug and Alcohol Directorate and Hornsby Hospital.

Community health services

- › Hornsby Ku-ring-gai has a large number of dispersed community health services to cover its geographic catchment, many of which are of poor infrastructural quality. The Hillview Community Health Centre in Turrumurra has been highlighted for replacement in another location and the Pennant Hills Community Health Centre needs to be reviewed. In addition, there are a number of community services in close proximity to or dispersed across the Hornsby Hospital campus. A comprehensive strategy needs to be developed to inform future community health service and capital developments.

HORNSBY HOSPITAL IS UNDERGOING A MAJOR REDEVELOPMENT: STAGE 1 OPENED IN 2015 AND BY 2021 THE CAMPUS WILL BE ALMOST COMPLETELY REDESIGNED AND REBUILT.

31.3 Strategic Directions

To realise the full benefits of the extensive redevelopment of Hornsby Hospital, further work is required to refine and develop models of care for medical, surgical and non-admitted services. With the available and planned infrastructure there are opportunities for Hornsby Hospital to provide a more comprehensive range of high quality admitted and non-admitted acute services for children and adults – residents will have confidence that Hornsby Hospital will be able to meet most of their acute health care needs and fewer patients will need to travel to RNS Hospital to access routine, secondary level care. Patients who need tertiary level care will continue to be referred or transferred to RNS Hospital.

Specifically Hornsby Hospital will focus on:

- › Realising the benefits of the redevelopment through best use of spare surgical and procedural capacity and planning models of care for the medical and non-admitted components of the stage 2 redevelopment. This will include collaborating with RNS Hospital to effect the re-distribution of secondary level services across NSLHD hospitals improving local access to routine medical and surgical care, with attention to workforce and on-call requirements. This redistribution of activity also offers opportunities for Hornsby Hospital to develop an LHD role in specific clinical services.
- › Collaborating with the relevant clinical networks to review clinical service role delineation levels in the context of population demand and the provision of care within an integrated network of hospitals across NSLHD.
- › Developing a comprehensive non-admitted strategy to guide existing services and identify and support the development of new or satellite non-admitted services which will both provide alternatives to hospital admission and reduce the need for hospital care, particularly for patients with chronic illness.
- › Identifying future infrastructure requirements and models of care for community health centres to improve client access, service quality and service integration, in collaboration with the Primary and Community Health Directorate.
- › Identifying future options for the provision of services for older people with mental health needs, including admitted, non-admitted and home-based services.

32

MONA VALE HOSPITAL

32.1 Service Description

Mona Vale Hospital, with a total of 56 beds, is classified as a sub-acute hospital and provides rehabilitation and community palliative care. It also has an urgent care centre and a large community health centre. Reconfiguration and redevelopment of the Mona Vale Hospital site includes a new building with 20 beds to provide admitted palliative care and geriatric evaluation and management (GEM) services. When these developments are complete in 2019/20 Mona Vale Hospital will have 76 inpatient beds.

Acute hospital services previously provided at Manly and Mona Vale Hospitals transferred to the new Northern Beaches Hospital in October 2018. Manly Hospital closed but has been retained for public use and planning is underway for the development of an adolescent and young adult hospice on the site. There has been significant investment in new and upgraded community health facilities at Mona Vale, Brookvale and Seaforth.

The nominal catchment for Mona Vale Hospital is the Northern Beaches (previously Manly, Pittwater and Warringah) local government area. While the majority of people accessing services live within that catchment, residents of other areas may also use the urgent care centre and specialist rehabilitation services.

Urgent Care Centre

› The Urgent Care Centre (UCC) treats non-complex, low-acuity patients with minor injury and illness not requiring hospital admission. The service is designed to provide a primary care service that is an alternative appropriate pathway for patients who might otherwise present to an ED. The UCC is staffed by an experienced team of doctors, nurses and allied health professionals and has access to medical imaging including x-ray, CT and ultrasound, on-site pathology, anti-venoms and adrenalin.

› The UCC is not part of the NSW Ambulance service matrix and ambulance, police or retrieval services, and GP referrals for admitted patients are directed to the new Northern Beaches Hospital. Patients presenting to the UCC with higher acuity needs that require more complex acute care are stabilised then transferred to Northern Beaches, RNS or other appropriate acute hospital.

Rehabilitation and aged care

- › Rehabilitation services include admitted and non-admitted services within the Beachside Rehabilitation Unit (BRU) which opened in 2014 and the adjacent Assessment and Rehabilitation Unit (ARU). The units have a gymnasium and multifunctional spaces for group therapy and activities of daily living as well as consultation and treatment rooms. There is a hydrotherapy pool on site. Medical, nursing and allied health services are provided including physiotherapy, occupational therapy, social work, speech pathology, neuropsychology, and pharmacy.
- › The Beaches Rapid Access Care of the Elderly (BRACE) service provides non-admitted multidisciplinary assessment of frail older people living at home or in residential aged care facilities. The service includes in-reach support to assess and manage deteriorating residents. It also provides non-admitted falls prevention services, geriatric consultation clinics and allied health services including physiotherapy, occupational therapy, dietetics, social work, and pharmacy support.

Palliative care

- › A Community Palliative Care service is provided by HammondCare in collaboration with NSLHD Palliative Care services and the Northern Sydney Home Nursing Service. The service provides support for patients diagnosed with life-limiting illness, their family and other carers, and support that embraces physical, psychological and spiritual needs. Services including care coordination, specialist palliative care advice, and hands-on care is provided to patients in their own home or in non-admitted clinics.

Community health services

Community health services provided from Mona Vale Hospital campus include:

- › Acute Post-Acute Care (APAC) and Northern Sydney Home Nursing Service.
- › Aged Care including an Assessment Team (ACAT) with physiotherapy, occupational therapy and social work services, an a multidisciplinary geriatric service providing falls and memory clinics.
- › Rehabilitation services including Chronic Disease Community Rehabilitation Service (CDCRS), cardiac rehab and the Management of Acute Cardiac Failure (MACARF) service as well as allied health services for adults including dietetics, speech pathology, social work, and podiatry.
- › Early childhood health services and paediatric allied health including physiotherapy, occupational therapy, and speech pathology.
- › Specialist non-admitted clinics including endocrinology consultation, diabetes education, chest clinic, tuberculosis, continence.
- › Mental Health and Drug and Alcohol services including Child and Youth Mental Health Services (CYMHS), Adult Mental Health, and Drug and Alcohol counselling.
- › Other services include: Oral Health, Carers Support, Pastoral Care, and Staff Health.

WHEN FULLY RECONFIGURED, MONA VALE HOSPITAL WILL PROVIDE A RANGE OF SUB-ACUTE AND COMMUNITY-BASED SERVICES INCLUDING SPECIALIST SERVICES IN REHABILITATION, AGED CARE AND PALLIATIVE CARE IN CONTEMPORARY PURPOSE BUILT FACILITIES.

Other services

- › The Kedesh Rehabilitation Service, a not-for-profit, charitable community-based organisation, provides drug and alcohol rehabilitation services. Programs are designed to address the psychological aspects of addiction and are based on the principles of cognitive behaviour therapy. Services are provided on a non-admitted basis and a 10-bed admitted service is ready to open.
- › The NSW Ambulance Service operates from a temporary ambulance station, which opened on the Mona Vale Hospital site in 2017; a permanent station is planned to better serve the catchment population.

32.2 Issues and Opportunities

The role of the Mona Vale Hospital campus has changed significantly with the transfer of acute services to the Northern Beaches Hospital and the appointment of a general manager for the sub-acute hospital and community health services that remain. The nature of the hospital campus may change over time with opportunities for other organisations to provide complementary health services on site. Key challenges include the strengthening of relationships and clinical referral pathways from the new acute hospital especially in relation to rehabilitation, palliative care, post-acute care and community health services.

Urgent Care Centre

- › Since the UCC opened in October 2018, it has treated an average 50 patients each day with peak demand experienced over the Christmas/ New Year holiday period. Common reasons for presentation to the UCC include minor fractures, sprains and cuts, surfing and other sporting injuries, dehydration and mild asthma. A small proportion of presentations have required transfer to a larger hospital most commonly for symptoms such as chest pain, burns and trauma and required admission to hospital or needed prolonged assessments. The development of the Urgent Care Centre, as a new model of care, will require ongoing monitoring for trends in utilisation, patient experience, clinical outcomes, quality, safety and efficiency, and opening hours of the service.

Sub-acute admitted care

- › There has been some reduction in the number of referrals from the new Northern Beaches Hospital to the rehabilitation service at Mona Vale Hospital. This is likely influenced by referral patterns already established with the Healthscope owned Lady Davidson Private Rehabilitation Hospital and the new 85 bed Arcadia Private Rehabilitation Hospital which opened in Warriewood in 2018. Referral trends will need to be closely monitored and services scaled to meet demand.
- › A new purpose-built 20 bed building is currently under construction and is scheduled to open in 2019/20. The new building, adjacent to the rehabilitation units will accommodate:
 - › Geriatric Evaluation and Management (GEM) service: GEM is defined as sub-acute care in which the primary clinical purpose or treatment goal is improvement in the functioning of a person with multi-dimensional needs associated with age-related health conditions. The service aims to support the person to continue to live at home independently for as long as possible. The GEM service will complement the sub-acute rehabilitation role of the Mona Vale Hospital and associated community health services. The model of care needs to be determined and defined in the context of its contribution to the broader aged care services across the Northern Beaches and more broadly across NSLHD. The Rehabilitation and Aged Care Clinical Network will facilitate the development of the model of care in collaboration with services at Mona Vale Hospital .
 - › Palliative care services are proposed to operate as part of a NSLHD three-hub (Hornsby, Northern Beaches, and North Shore and Ryde Hunters Hill) palliative care model proposed by the Cancer and Palliative Care Clinical Network. The admitted palliative care service at Mona Vale Hospital will need clear linkage with the non-admitted palliative care service currently provided on the campus by HammondCare, and with the Northern Beaches Hospital. The Cancer and Palliative Care Clinical Network will facilitate the development of the model of care in collaboration with services at Mona Vale Hospital, HammondCare and other palliative care services in NSLHD. In addition to these palliative care services, an adolescent and young adult hospice has been approved for the Manly Hospital site.

Non-admitted services

- › Non-admitted patient services have undergone considerable change with the transfer of acute care to the new Northern Beaches Hospital and consolidation of sub-acute and community health services in the new or redeveloped community health centres. There is opportunity for further development and refinement of services to reduce any remaining duplication and to streamline services so that they operate as efficiently as possible and are less confusing for patients and referrers.

32.3 Strategic Directions

The nature of the Mona Vale Hospital campus may change over time with opportunities for other organisations to provide complementary health services on site. Key challenges include the strengthening of relationships and clinical referral pathways from the new acute hospital especially in relation to rehabilitation, palliative care, post-acute care and community health services.

Mona Vale Hospital will focus on:

- › Consolidating its new role as a sub-acute hospital and provider of specialist rehabilitation and palliative care, as well as urgent care and community health services.
- › Strengthening referral pathways with the Northern Beaches Hospital especially in relation to rehabilitation, palliative care, post-acute care and community health services.
- › Reviewing patient experience and trends in demand for the urgent care centre to refine the service delivery model as required.
- › Working collaboratively with the Rehabilitation and Aged Care Clinical Network to define and develop the Geriatric Evaluation and Management (GEM) model of care.
- › Working collaboratively with the Cancer and Palliative Care Clinical Network to develop the new admitted palliative care service at Mona Vale Hospital as part of an integrated three-hub service for NSLHD.

33

NORTHERN BEACHES HOSPITAL

33.1 Service Description

Northern Beaches Hospital, with 488 beds, is classified as a major metropolitan hospital providing emergency, acute admitted and non-admitted services including maternity, paediatrics, intensive care, a broad range of medical and surgical sub-specialties, renal dialysis, and mental health services. Northern Beaches Hospital does not provide sub-acute services, and patients requiring rehabilitation, maintenance or palliative care are transferred to relevant services at Mona Vale Hospital or similar public or private services.

The hospital, which opened in October 2018 replacing the acute services previously provided at Manly and Mona Vale Hospitals, is operated by Healthscope which has contracted with the State of NSW to provide hospital services to public patients. Public patients are not required to pay for treatment and there is no change to the way public patients access free health services. Patients retain their right to choose whether or not they wish to use their private health insurance on admission. Clinical care is prioritised according to health needs and not private health insurance status. Northern Beaches Hospital has the capacity to offer additional services for private patients providing it can meet public patient need.

The public-private partnership means that the NSLHD is financially responsible for only those patients admitted to Northern Beaches Hospital as public patients, and the size of this cohort determines the volume of activity to be purchased. The scope and volume of services to be purchased will be reviewed on an annual basis, or more frequently should the need arise.

The full scope of health services to be provided at Northern Beaches Hospital for public patients is described in the [Services Specification](#) document along with associated performance standards. The schedule

also outlines expectations in relation to meeting NSW Health policy, patient referral, provision of non-admitted services, teaching and research, access to support services, and links with other NSLHD services. Among other things, Northern Beaches Hospital must provide non-admitted services to align with and support admitted services and must link with the relevant NSLHD clinical networks where appropriate. Relationships must be maintained with specialist services at RNS Hospital and with community health providers such as the Northern Sydney Home Nursing Service.

Most acute services are provided at a higher role delineation level than was previously provided at Manly or Mona Vale hospitals. However public patients from Northern Beaches with complex and tertiary needs (defined in the contract), such as major trauma, neurosurgery and cardiothoracic surgery, continue to be treated at RNS Hospital.

Catchment and activity

The nominal catchment of the new hospital is the Northern Beaches (previously Manly, Pittwater and Warringah) local government area. Most activity at the new hospital comprises activity previously delivered at Manly and Mona Vale hospitals. However, the location of the new hospital means that many Northern Beaches residents who were previously admitted to RNS Hospital as their closest hospital are likely to attend the Northern Beaches Hospital. This, along with the increased scope of services, is expected to result in some diminution of activity at RNS Hospital, but with little direct impact on other NSLHD hospitals where there has been minimal historic patient flow. This reduction in demand on RNS Hospital is expected to be noticeable in the first year or two of operation of the new hospital and will vary from service to service. Reductions in tertiary activity at RNS Hospital are not expected to occur.

THE NEW NORTHERN BEACHES HOSPITAL OPENED IN OCTOBER 2018.

While services moved to the new Northern Beaches Hospital in October 2018, Manly and Mona Vale Hospital activity for 2012/13 to 2016/7 is outlined in Table 23

for reference. It is anticipated that activity at the new hospital will increase over time, consistent with its higher role delineation and increased range of services offered.

Table 23: Manly and Mona Vale Hospital activity and performance 2013/14 to 2017/18

	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Emergency Presentations	57,897	58,403	58,562	59,615	60,400
Ambulance	12,933	13,101	12,389	12,604	13,579
% brought to ED by Ambulance	22.3%	22.4%	21.2%	21.1%	22.5%
Admitted Episodes	24,582	27,547	28,909	28,266	28,716
Same day (%)	29.1%	33.3%	32.6%	33.9%	34.3%
Paediatric episodes	1,793	2,008	2,090	1,792	1,878
Occupied bed days	93,186	99,717	97,038	95,136	95,560
ON ALOS (days)	5.2	5.1	4.6	4.7	4.6
ON ALOS (days) – Acute only	3.9	3.8	3.3	3.3	3.3
Births	1,596	1,605	1,719	1,706	1,541
Non admitted occasion of service	92,342	141,195	155,991	163,677	160,048

Source: NSLHD Performance Analytics and Business Intelligence Unit

Note: Episodes include all ABF streams including Acute, Mental Health Drug and Alcohol and sub-acute and non-acute services such as rehabilitation, psychogeriatric care, maintenance and palliative care. Episodes exclude renal dialysis and unqualified neonates, and episodes entirely within the emergency department.

Private health care in the Northern Beaches

The new Northern Beaches Hospital is the largest hospital serving the catchment population. Located within the catchment there are also four private day procedure centres (for day surgery, chemotherapy, and endoscopy services) and five other small private hospitals including Delmar Private Hospital (Macquarie Health Corporation, 52 beds), Manly Waters Private Hospital (Macquarie Health Corporation, 63 beds), Peninsula Sleep Clinic (6 beds) and South Pacific Hospital (53 beds) providing mental health services. Arcadia Pittwater Hospital (85 beds) opened in 2018 in Warriewood, near Mona Vale, providing rehabilitation services. In 2016/17 there were 31 residential care services providing 2,551 residential care places and 18 transitional care places on the Northern Beaches.

33.2 Issues and Opportunities

The new Northern Beaches Hospital opened at the end of October 2018. Initial challenges of commissioning a large hospital are being progressively resolved and patients are reporting satisfaction with services received. NSLHD will continue to support the new Northern Beaches Hospital to progressively scale up clinical services and maximise the benefits of the new major hospital for local population.

Annual contract negotiations offer opportunities for both Northern Beaches Hospital and NSLHD to refine and develop services to meet the health care needs of the population, based on initial modelling and trends in activity and performance in the preceding period.

33.3 Strategic Directions

NSLHD will focus on:

- Including the new Northern Beaches Hospital in the integrated network of hospitals across the district.
- Reducing the need for Northern Beaches residents to travel to RNS Hospital for services that are now provided locally.
- Refining service linkages to provide seamless services between the Northern Beaches Hospital and sub-acute and community health services provided by NSLHD at Mona Vale, Brookvale and Seaforth.
- Engaging Northern Beaches Hospital staff and clinical teams in the NSLHD clinical networks.
- Refining a standardised, efficient and effective model of care for specialist geriatric outreach services for older people living in the community and in residential care in order to respond to growth in demand.

ROYAL NORTH SHORE HOSPITAL

34.1 Service Description

RNS Hospital, with a total of 713 beds, is the principal referral hospital for NSLHD providing a comprehensive range of secondary, tertiary and supra-LHD services.

In recent years the RNS Hospital has been almost completely rebuilt including a major community health centre, space for teaching and research (Kolling Building) and additional car parking. The acute services building (opened November 2012) and clinical services building (opened December 2014) were constructed as part of a public private partnership with the InfraShore Consortium which continues to provide parking, facility support and retail services on site. Separate from the hospital, the southern campus is currently undergoing redevelopment for the NSW Ministry of Health.

Acute care

- Supra-LHD services are provided for high risk maternity care, neonatal and adult intensive care, major trauma, spinal cord injury and severe burn injury, allogeneic blood and marrow transplant, and home dialysis training.
- Tertiary services, provided to residents of NSLHD and patients referred from other LHDs, are integrated within specialty services, including, for example, minimally invasive interventional cardiology and cardiothoracic surgery, otolaryngology head and neck services, ortho-plastics for hand injuries, limb salvage and brachial plexus injuries, neurosurgery, interventional neuroradiology, hyper acute stroke care, kidney transplant services, chronic pain management, and other complex medical and surgical care. RNS Hospital also has a cancer centre with a comprehensive suite of services including chemotherapy, radiotherapy, multidisciplinary clinics and cancer support services.
- Acute medical and surgical services are provided at role delineation level 6 supporting the supra-LHD and tertiary functions as well as the comprehensive range of sub-specialty services for the local catchment population.
- Adult mental health services include acute care, consultation liaison, assertive outreach and early intervention. RNS Hospital has a 6 bed Psychiatric Emergency Care Centre as well as 32 acute admitted beds. The Drug and Alcohol service, located in the Herbert St Clinic, includes admitted detoxification (15 beds), an opioid treatment program, and a range of community-based counselling and psychosocial intervention services.

Sub-acute and non-admitted care

- Sub-acute services for the local catchment are not provided at RNS Hospital but there are formal links with, and referral pathways to, Royal Rehab and Graythwaite Rehab for specialist and general rehabilitation, and to Greenwich and Neringah Hospitals for palliative care services.
- There is a large ambulatory care centre which provides a wide range of medical, nursing and allied health led non-admitted clinics. Non-admitted services are also provided from other locations on the hospital site including the acute post-acute care service from the Douglas Building.
- Community health centres (CHC) are located on the RNS Hospital campus (Herbert St), at Chatswood and Cremorne. BreastScreen and Oral Health services are provided from the St Leonards CHC along with the NSLHD Aboriginal Health Service headquarters. Early Childhood Health Centres are located at Chatswood, Cremorne, Crows Nest and Lane Cove.
- The Kolling Institute of Medical Research is based on the campus, and the hospital has formal links with the University of Sydney, UTS, Macquarie University and the Australian Catholic University.

Private health care in the Lower North Shore

In addition to the public hospitals, private acute hospital services are provided at North Shore Private (313 beds) and Mater (233 beds) Hospitals along with 10 private day procedure centres. Private mental health services are provided by Ramsay at Northside Cremorne (36 beds) and the new Northside St Leonards Clinic (112 beds). Private rehabilitation services are provided at Hironnelle (53 beds) and Greenwich (36 beds) Hospitals and Royal Rehab (24 beds). There are 23 residential aged care facilities with a total of 1,511 beds in the Lower North Shore catchment.

Catchment and activity

- The nominal catchment of RNS Hospital includes the local government areas of Lane Cove, Mosman, North Sydney and Willoughby, collectively referred to as Lower North Shore (LNS). As a tertiary referral hospital, RNS Hospital also provides services to patients from other metropolitan local government areas in NSLHD and across NSW.
- Residents of the Lower North Shore account for 19 per cent of planned episodes and 40 per cent of unplanned episodes.
- Residents of Hornsby Ku-ring-gai and Ryde Hunters Hill account for 23 per cent of planned episodes and 27 per cent of unplanned episodes. Residents of the Northern Beaches account for 21 per cent of planned and 17 per cent of unplanned episodes.
- Residents of other local health districts account for 37 per cent of planned episodes and 16 per cent of unplanned episodes particularly for orthopaedics, ENT, neurosurgery, plastic and reconstructive surgery and non-sub-specialty surgery.

Table 24 sets out a summary of activity and performance indicators for RNS Hospital.

Table 24: RNS Hospital activity and performance data 2013/14 to 2017/18

	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Emergency Presentations	71,669	75,483	79,447	83,618	89,364
Ambulance	18,046	17,694	17,542	19,024	20,028
% brought to ED by Ambulance	25.2%	23.4%	22.1%	22.8%	22.4%
ETP All ages (target 75%)	67%	66%	62%	63%	63%
Admitted Episodes	47,665	48,724	49,351	53,037	55,132
Same day (%)	23.2%	24.1%	23.5%	23.7%	24.4%
Paediatric episodes	3,282	3,626	3,708	4,131	4,481
Occupied bed days	215,554	217,781	230,619	237,926	242,752
ON ALOS (days)	5.9	5.8	6.0	5.7	5.6
ON ALOS (days) – Acute only	5.3	5.3	5.5	5.3	5.2
Births	2,642	2,647	2,846	2,871	2,699
Non admitted occasion of service	538,819	571,542	628,553	664,097	696,420

Source: NSLHD Performance Analytics and Business Intelligence Unit

Note: Episodes include all ABF streams: Acute; Mental Health (and Drug and Alcohol) and other or sub-acute and non-acute services such as rehabilitation, psychogeriatric care, maintenance and palliative care. Episodes exclude renal dialysis and unqualified neonates, and episodes entirely within the ED.

34.2 Issues and Opportunities

High utilisation

- › RNS Hospital has experienced sustained growth in ED presentations in recent years and regularly operates at peak capacity. The high ED utilisation observed is partly driven by the ambulance matrix and a change in patient flows, the excellent amenity of the new buildings (particularly when compared to the neighbouring Ryde Hospital), and the wide range of services offered which means that RNS Hospital is “never the wrong hospital to go to”.
- › Admitted models of care, particularly for unplanned medical and tertiary care (for example highly specialised investigation, treatment or hyper-acute care) do not always identify clear pathways back to the patient’s local hospital to complete their care adding further pressure on bed capacity.
- › While there are no designated sub-acute admitted services at RNS Hospital on average there are about 30 beds occupied by patients who have been classified as requiring rehabilitation, maintenance care or palliative care. It is unclear what proportion of these patients would benefit from early referral or transfer to designated rehabilitation and specialist palliative care services.
- › The absence of non-admitted consultation clinics at other NSLHD hospitals often means that patients have limited opportunities to access non-urgent care other than at RNS Hospital. At present it seems that “all roads lead to RNS Hospital” with flow on effects in ED and admitted services as patients will generally return to “their” hospital or specialist for further or ongoing care.

Best Care Together Program

- › Under the “Best Care Together” Program RNS Hospital focuses on service improvements that lead to better outcomes and experiences of care for patients from their initial point of entry (ED or referral) through to a hospital stay, discharge, follow-up care and ongoing care in primary and community settings. The program acknowledges that high quality care is also best value care and that improvements in key metrics will follow. The program has had seen improvements in ED waiting times with all patient triage categories being seen in clinically appropriate times and sustained achievement of the “triple zero” performance indicator with no elective surgical patients breaching the maximum waiting time for their clinical urgency category for almost a full year. Efforts will be maintained under this program to further

improve measure and monitor key metrics including emergency treatment performance (ETP), elective surgery access performance (ESAP), length of stay, mortality rates, and unplanned readmission rates along with financial sustainability.

Sustainable services

- › The continued high demand on RNS Hospital services has had several impacts including:
 - › Variation in waiting times for ED and to access some non-urgent and non-admitted services.
 - › Reduced capacity to respond to seasonal or unanticipated increases in demand with continued pressure on staff to maintain usual high standards of care.
 - › Limitations on the ability to grow and expand key supra-LHD and tertiary services.
 - › Cost and budget pressures related to the higher than anticipated activity.
- › The high demand for services at RNS Hospital also threatens the sustainability of the hospital and its services and will become unmanageable over time without some change in how services are delivered.
 - › The opening of the Northern Beaches Hospital is anticipated to provide some short-term relief for RNS Hospital as the elective activity from surgical and other waiting lists moved across and residents choose to use their new local hospital. It is too early to determine the extent to which this has occurred to date, and it is likely that the impact will be observed in a staged manner as the Northern Beaches Hospital opens more beds and increases to its planned capacity over time.
 - › The opening of the stage 1 redevelopment at Hornsby Hospital which included an expanded operating suite with a hybrid theatre and new peri-operative facilities was anticipated to provide some relief for RNS Hospital in surgical services but as yet these new resources have yet to be used to their full potential.
 - › Other developments that may have an impact on demand for services at RNS Hospital include the Dexus North Shore Private Medical Centre currently under construction; it is anticipated that services will be mainly ambulatory.
- › In the medium to long-term, further population growth is anticipated with large residential, commercial and transport developments currently under construction or in planning for the Crows Nest - St Leonards area.

34.3 Strategic Directions

The sustainability of clinical services at RNS Hospital requires that significant changes are made to the types of care delivered and how and where it is delivered.

RNS Hospital will focus on:

- › Supporting NSLHD hospitals as they develop high quality secondary level services for their catchment population. This process will require, in collaboration with relevant clinical networks and hospitals:
 - › A review of the ambulance matrix in collaboration with the NSW Ambulance Service to identify opportunities to direct appropriate non-tertiary patients to other hospitals.
 - › Service by service review, beginning with RNS Hospital, to identify opportunities for the re-distribution of some acute activity. Initial areas for consideration should include management of minor trauma and hip fractures; elective joint replacement; general surgery including cholecystectomy and hernia repair and selected specialty surgery including urology, and ear, nose and throat surgery.
 - › Development of innovative models of care that include step-down or repatriation pathways for patients referred for tertiary care but no longer requiring it following intervention. One example is stroke care where RNS Hospital provides hyper-acute stroke care for the district but ongoing acute and rehabilitation care could be provided well in local stroke care units at other hospitals. Consideration should also be given to post-discharge follow up that could be provided locally rather than requiring patients to travel to RNS Hospital.
 - › Review of the comparatively large volume of sub-acute care at RNS Hospital to fully understand the profile and needs of this cohort. The review should consider opportunities to increase in-reach and non-admitted sub-acute care at RNS Hospital and models of care that include planned pathways and early referral to Graythwaite rehabilitation service at Ryde hospital.
 - › Consideration of the development and location of appropriate non-admitted health services to support the redistribution of admitted care informed by the district-wide review of non-admitted care.
- › Increasing the proportion of activity that is focused on delivering tertiary or specialist care not routinely delivered in other NSLHD hospitals, to ensure that the NSLHD residents continue to have access to highly specialised, low-volume, or high-cost services when they need them. This will include considering how tertiary and supra-LHD services should expand and develop to make best use of the capacity released through the redirection or reconfiguration of secondary level services. Specifically, RNS Hospital will focus on the continued development of pancreatic cancer, transplantation, interventional radiology, interventional and surgical cardiac and interventional neuroradiology services.
- › Exploring opportunities for private sector collaboration in relation to clinical support services such as medical imaging.
- › RNS Hospital will continue to fulfil a key function in the integrated network of NSLHD hospitals by supporting the development and delivery of excellent patient care and services at each hospital; specifically, it will play a significant role in building capabilities at Ryde Hospital, resourcing and supporting proposed changes.
- › In the longer term it is anticipated that additional capacity will be required across NSLHD including RNS Hospital. Planning for future hospital and expansion should be undertaken with clear understanding of the impact of service developments and expansion at Hornsby, Northern Beaches and Ryde Hospitals, the planned development of non-admitted services and other service delivery platforms such as telehealth and associated technologies.

RNS HOSPITAL PROVIDES A NUMBER OF SUPRA-LHD SERVICES INCLUDING HIGH RISK MATERNITY, NEONATAL AND ADULT INTENSIVE CARE, MAJOR TRAUMA, SPINAL CORD INJURY, SEVERE BURN INJURY, ALLOGENEIC BLOOD AND BONE MARROW TRANSPLANT, AND HOME DIALYSIS TRAINING.

35

RYDE HOSPITAL

35.1 Service Description

Ryde Hospital is a 194 bed district general hospital providing acute (130 beds) and sub-acute (64 beds) services.

- Acute services, predominantly provided at role delineation level 3, include orthopaedics, general medicine and surgery, and a midwifery group practice with obstetric support from RNS Hospital. The NSLHD Acute Post-Acute Care service provides a liaison nurse and some clinic services on site.
- Sub-acute admitted rehabilitation (role delineation level 5) is from the purpose-built Graythwaite Centre which aims to meet the general admitted medical rehabilitation needs of the Lower North Shore and Ryde-Hunters Hill catchments as well as specialist burns rehabilitation as part of the supra-LHD Severe Burn Injury Service.
- Non-admitted services include clinics for preadmission, orthopaedics, pre and post natal, pathology, imaging and clinical measurement, cardiac rehabilitation, community aged care and rehabilitation, and allied health.

- The hospital campus also accommodates community drug and alcohol and mental health services in a standalone facility.
- Other community health, including oral health, child and youth mental health services, child and family allied health services, and early childhood health services, are provided from the Top Ryde Community Health Centre and early childhood health centres in Marsfield, Top Ryde, Gladesville and West Ryde.
- The Northern Sydney Home Nursing Service provides services to the Ryde and Hunters Hill catchment from a location on the Macquarie Hospital site.

Private health care in Ryde-Hunters Hill

- In addition to the public hospitals, private acute hospital services are provided at Macquarie University Hospital (152 beds) and rehabilitation services are provided at Royal Rehab Private (24 beds) and Hunters Hill Private Hospital (40 beds). Royal Rehab also provides follow up outpatient services following sub-acute admission to the Graythwaite Centre at Ryde Hospital. There are 21 residential aged care facilities with a total of 1,639 beds in the Ryde-Hunters Hill catchment.



Catchment and activity

Table 25 sets out a summary of activity and a range of performance indicators for Ryde Hospital.

Table 25: Ryde Hospital activity and performance 2013/14 to 2017/18

	2013/2014	2014/2015	2015/2016	2016/2017	2017/2018
Emergency Presentations	26,396	27,103	26,985	26,519	27,741
Ambulance	7,271	7,310	6,833	6,285	6,638
% brought to ED by Ambulance	27.5%	27.0%	25.3%	23.7%	23.9%
ETP All ages (target 83%)	74%	78%	81%	84%	82%
Admitted episodes	10,552	11,569	11,719	11,687	11,975
Same day (%)	34.7%	33.5%	34.7%	36.6%	33.4%
Paediatric episodes	18	11	16	24	14
Occupied bed days	49,093	54,494	55,589	56,491	52,201
ON ALOS (days)	7.0	7.1	7.4	7.8	6.7
ON ALOS (days) – Acute only	5.2	4.7	4.9	4.7	4.1
Births	120	130	110	106	87
Non admitted occasion of service	35,473	39,363	43,189	41,711	47,244

Source: NSLHD Performance Analytics and Business Intelligence Unit

Note: Episodes include All ABF Streams, Acute; Mental Health (and Drug and Alcohol) and other or sub-acute and non-acute services such as rehabilitation, psychogeriatric care, maintenance and palliative care. Episodes exclude renal dialysis and unqualified neonates, and episodes entirely within the ED.

35.2 Issues and Opportunities

Population growth and urban development

Ryde Hospital's nominal catchment area includes the local government areas of Ryde and Hunters Hill.

- Due to the hospital's location near the western border of the local health district, patients from parts of Western Sydney LHD (predominantly Parramatta local government area) access care at Ryde Hospital, accounting for 25 per cent of unplanned and 28 per cent of planned episodes of care.
- Proximity and transport links with Sydney LHD to the south across the Parramatta River see residents of the Ryde LGA accessing services at Concord Hospital (16 per cent of Ryde resident's public acute admissions are at Concord, and Ryde residents represent 8 per cent of Concord's acute activity, excluding dialysis). The recent announcement of Ryde Hospital redevelopment may mitigate some of these outflows allowing more residents to be treated locally.

Population growth and health needs of the catchment population will place increasing pressure on health and social services over the life of this clinical services plan and over the next decade.

- There has been significant urban development across the catchment with further development underway or anticipated particularly around the Macquarie Park area.
- The population has higher health needs, is less socioeconomically advantaged and more culturally diverse (with large Chinese and Korean communities) than the rest of the LHD.
- The Ryde catchment is the fastest growing region of NSLHD, particularly the youngest and oldest age groups. Between 2019 and 2026 the population is forecast to grow by 13.8 per cent to 163,550.

Services and amenity at Ryde Hospital

While operating theatres, some medical wards and intensive care have been refurbished and the purpose-built Graythwaite rehabilitation unit opened in 2013, Ryde Hospital is the last of NSLHD acute facilities to receive significant capital investment to support the delivery of modern health care to its population and as part of the NSLHD network.

- › Poor infrastructure in ageing buildings (many are over 50 years old) is unattractive to patients and staff, makes the delivery of contemporary health care more challenging and makes the navigation of services more complex for GPs and other referrers as well as for patients and their carers and families. The redevelopment of Ryde Hospital is the top priority on the NSLHD Asset Strategic Plan. The recent government commitment of \$479 million for redevelopment presents an opportunity to deliver a “hospital of the future”, which, rather than being confined by concepts of bricks and mortar, will connect care across the integrated network of NSLHD hospitals and services and externally with GPs, primary care and other providers and service delivery partners, leveraging the benefits of the electronic medical record and other digital platforms.
- › While Ryde Hospital ED and admitted wards are relatively busy, RNS Hospital has attracted a large share of activity from the Ryde catchment.
 - › This trend could be reversed with improved amenity at Ryde Hospital as well as an improved mix of secondary level services that meet the needs of the older and younger populations.
 - › Ryde Hospital must play a key role in managing secondary level activity redistributed from RNS Hospital so that tertiary services can grow to meet local and statewide demand.
- › The High Dependency Unit is transitioning to a level 4 Intensive Care Unit to better support the existing acute activity of the hospital. This increase will support the development of higher acuity services in the future as required with formal networking with Hornsby and RNS Hospitals. With the planned hospital redevelopment there will be opportunity to consider further role delineation level changes commensurate with service demand and capabilities.
- › With the refurbishment of the operating theatre suite and improvements in the level of critical care support there are opportunities, in collaboration with the Surgery and Anaesthesia Clinical Network, to increase the volume of existing activity in general surgery, endoscopy, and selected orthopaedic and gynaecology services.

Services for older people

A large proportion of activity at Ryde Hospital is for older patients, many of whom have multiple comorbidities, although the level of geriatrician staffing is lower than in other parts of NSLHD.

- › There are opportunities to enhance the general medicine, stroke and geriatric medical services across the continuum of care from acute, sub-acute and community with a long-term goal of being a leader in the medical care of older people.
- › The Acute and Critical Care Medicine and Chronic and Complex Medicine Clinical Networks has proposed establishing a General Medicine Academic Unit at Ryde Hospital to support the development of General Medicine and MAU services across NSLHD hospitals.

Services for children and young people

- › A growing proportion of presentations to the Ryde ED are infants and children although there is limited availability of specialist paediatric care. In collaboration with the Child Youth and Family Clinical Network, Ryde Hospital will explore opportunities to improve the availability of specialist paediatric care in the ED and in non-admitted clinics. Opportunities to enhance Youth Health Services at Ryde Hospital will also be considered.

Sub-acute care

- › After five years of operation, a review of the Graythwaite Rehabilitation Unit is underway to evaluate the provision of care against best practice for the Lower North Shore and Ryde Hunters Hill catchments. Further work is required to provide the full range of admitted, non-admitted and home-based rehabilitation options to patients. Consideration will also be given to the development of dialysis capabilities for patients while they are participating in rehabilitation programs.

Consultation and support

While Ryde Hospital offers a broad mix of services, clinical support, sub-specialty consultation and referral are often required and are commonly accessed through RNS Hospital.

- › There are opportunities to re-examine linkages and how they work across Hornsby, Ryde and RNS Hospitals; accessing secondary level support through Hornsby and RNS Hospital and tertiary level through RNS Hospital.
- › Improved telehealth capacity and capabilities across Ryde, Hornsby and RNS Hospitals would also offer opportunities to improve consultation services avoiding inter-hospital transfers where appropriate.

Non-admitted services

- › Non-admitted services on the Ryde Hospital site are not well developed and are distributed across numerous locations. With improved models and facilities there are opportunities to reduce admitted length of stay, provide alternatives to hospital care, and provide more patient-centred care.
- › Community health facilities at Top Ryde are of poor infrastructural condition and are poorly configured and require redevelopment, either on the existing site or possibly collocated on the hospital campus. There is potential to develop an innovative non-admitted care/community health infrastructure on the Ryde Hospital campus, separate to the acute facility, to create a comprehensive, integrated health hub for the Ryde catchment.

35.3 Strategic Directions

The vision for the future of Ryde Hospital is a comprehensive, integrated health hub becoming the place that the community knows they will receive easy access to the best care available across the care continuum. The “hospital of the future”, which, rather than being confined by concepts of bricks and mortar, will leverage the benefits of the electronic medical record and other digital platforms to connect care across the integrated network of NSLHD hospitals and services and externally with GPs, primary care and other providers and service delivery partners. With the planned hospital redevelopment there will be opportunity to consider role delineation level changes commensurate with service demand and capabilities.

In anticipation of the redevelopment, Ryde Hospital will need to focus on:

- › Building on Ryde Hospital’s current strengths in emergency medicine, general and orthopaedic surgery, general acute medicine, rehabilitation and non-admitted care and community health, including mental health.
- › Reviewing the need for paediatric services to be provided to meet the needs of the increasing population.
- › Developing and strengthening intensive care, geriatric medicine, women’s health, and stroke care, along with relevant clinical support services
- › Strengthening links with Hornsby and RNS Hospitals and improving the ability to obtain medical consultation advice including through the use of telehealth strategies.
- › Establishing a more significant role for Ryde Hospital within NSLHD including undertaking non-tertiary work currently provided at RNS Hospital.
- › Developing a clinical service profile for Ryde Hospital for the medium- and long-term and a staged infrastructure plan to support the major redevelopment of the hospital site incorporating acute and sub-acute admitted services, as well as options to bring together non-admitted and community health services from across the campus and surrounding area into a single purpose-built location as part of the approach to keep people well and out of hospital whenever possible.

THE \$479 MILLION REDEVELOPMENT OF RYDE HOSPITAL PRESENTS AN OPPORTUNITY TO DELIVER A “HOSPITAL OF THE FUTURE” FOR LOCAL RESIDENTS.



36

AFFILIATED HEALTH AND NON-GOVERNMENT ORGANISATIONS

36.1 Service Description

Affiliated health organisations

Affiliated health organisations are not-for-profit, religious, charitable or other non-government organisations that provide health services and are recognised as part of the public health system under the Health Services Act 1997. Affiliation with other providers is a key component of the NSW State Health Plan Towards 2021, which encourages “strategic partnerships with key stakeholders, including the private, not for profit and community sectors to find smarter, more sustainable ways to deliver 21st century health care”. These partnerships are particularly highlighted under the models for integrated care.

NSLHD has formal partnerships with two affiliated health organisations:

- HammondCare Health and Hospitals for services including:
 - Acute older people’s mental health services (OPMH) at Greenwich Hospital (20 beds).
 - Palliative care at Greenwich Hospital (22 beds) and at Neringah Hospital (19 beds). Services are provided in both admitted and non-admitted settings. HammondCare also provides non-admitted palliative care services at Mona Vale Hospital.
 - Private admitted and non-admitted rehabilitation services are also provided at Greenwich Hospital.

- Royal Rehab for services including:
 - Specialist admitted and non-admitted rehabilitation for brain injury (16 beds) and spinal cord injury (20 beds) for public patients. Royal Rehab also provides general rehabilitation for private patients (24 beds).
 - Community based low-intensity therapy services to the Northern Sydney Transition Care Unit (NSTCU). The service is part of the Transitional Aged Care program provided by NSLHD in collaboration with Wesley Uniting Care in Belrose that supports older people to continue to recover and improve after hospitalisation and avoid premature admission to residential aged care.

These organisations work collaboratively with the Primary and Community Health and Mental Health Directorates and are represented on the NSLHD Rehabilitation and Aged Care and Cancer and Palliative Care clinical networks. They are actively involved in the design and development of models of care and services to meet the needs of the NSLHD population.

Non-government organisations

NSLHD administers more than \$5 million to 20 non-government organisations (NGOs) as part of the Ministerially Approved Grants (MAG) program. MAG funding assists with the delivery of important community-based services that support the health and wellbeing of the public, in particular vulnerable or hard to reach populations. Services are provided to people living locally and across NSW through service agreements for health promotion, mental health, drug and alcohol, dental, women’s health, health related transport and aged and disability support.



36.2 Issues and Opportunities

Service level agreements

- › The service level agreements (SLA) with HammondCare and Royal Rehab are currently being finalised and consideration is being given to the scheduling of quarterly performance meetings to build and improve relationships and address performance and operations on a regular basis. There is a challenge to keep these SLAs consistent with both changing models of care and changes in service configuration across the District and to ensure that services purchased are both value for money and truly integrated with NSLHD services.

Engagement with NGOs

- › There are a large number of NGOs providing a range of services in NSLHD. These service providers play an important role in improving the health outcomes for NSLHD residents ranging from client advocacy through to practical support and service delivery. Recognising the importance of social and community services, including housing, and their influence on health status, it will be important for NSLHD to engage with established and emerging not-for-profit providers in NSLHD.
- › NSW Health is reforming the way it works with and funds the non-government sector. The aim of the Grants Management Improvement Program is to create more efficient partnerships and better align NGO services with priority areas. NSLHD is assisting local NGO providers to transition from the historical grant program into a service purchasing environment as part of these reforms. This is expected to increase opportunities for partnerships with the NGO sector and ensure consistent, accountable, and integrated services – regardless of the provider.

NSLHD HAS FORMAL PARTNERSHIPS WITH TWO AFFILIATED HEALTH ORGANISATIONS: HAMMONDCARE HEALTH AND HOSPITALS AND ROYAL REHAB.



MENTAL HEALTH DRUG AND ALCOHOL

MENTAL HEALTH DRUG AND ALCOHOL

37.1 Service Description

Mental Health Services

Mental Health (MH) acute and community services, including specialist service streams in Child and Youth Mental Health and Older People's Mental Health, are provided at Macquarie, Hornsby, Northern Beaches, RNS and Ryde Hospitals and in community health centres across NSLHD. A dedicated intake phone line and referral pathways facilitate access between services, which include:

- › ED services are provided at Hornsby, Northern Beaches, RNS and Ryde Hospitals.
- › Psychiatric Emergency Care Centres (PECC) operate in three hospitals: Hornsby Hospital (4 beds); RNS Hospital (6 beds); the Northern Beaches Hospital provides 6 short stay beds replacing and expanding the PECC beds previously provided at Manly Hospital. The business case for Stage 2 Hornsby Hospital redevelopment foreshadows an expansion of the Hornsby PECC from 4 to 6 beds.
- › Consultation liaison psychiatry services are provided within the general hospital setting at Hornsby and RNS Hospitals.
- › Adult acute mental health admitted services for people aged 18 to 64 are provided at Macquarie Hospital Parkview Unit (14 beds), Hornsby Hospital (35 beds plus a 12 bed MH Intensive Care Unit), RNS Hospital (32 beds) and Northern Beaches Hospital (20 beds, replacing those previously provided at Manly Hospital).
- › Adult non-acute and very long stay admitted services (151 beds) are provided from Macquarie Hospital (86 extended care beds and 65 rehabilitation beds). As part of the Pathways to Community Living Initiative, planning is underway for transitioning people with very long stays into suitable community-based options.
- › Specialist Acute Mental Health Services for Older People (aged 65+) currently operate from Greenwich Hospital (operated by HammondCare, 20 beds) and the Northern Beaches Hospital (15 beds, replacing and expanding the 10 beds previously provided at Manly Hospital). The Lavender Unit at Macquarie Hospital provides 30 extended care beds for older consumers. Consumers over the age of 65 years are admitted to general adult acute MH admitted units when no specialist older persons' mental health beds are available.
- › Child and Youth Mental Health Services (CYMHS) admitted services for consumers aged 12 to 17 are provided at Hornsby Hospital's Brolga Unit (acute, 12 beds); the Coral Tree Family Service offers residential and day programs (15 beds for children aged 5 to 12 and their families). Both are supra-LHD services. The CYMHS service is transitioning from caring for children aged 0-18 years to one that manages children and young people aged 0-24 years.
- › Community-based mental health services are provided by multidisciplinary child and youth, adult and older people's community mental health teams. Community mental health services are provided from community health centres at Hornsby, Pennant Hills and Wahroonga in Hornsby Ku-ring-gai, Brookvale and Mona Vale in the Northern Beaches, at St Leonards in the Lower North Shore and from Ryde Community Mental Health Centre and Top Ryde Community Health Centre in Ryde Hunters Hill.
- › Community services include acute care, crisis intervention, early psychosis intervention services; GP shared care and brief intervention clinics.

- › Peer workers provide advocacy and a peer support and recovery service across community and admitted settings.
- › Subspecialist mental health services include family and carer support, perinatal and infant mental health services, and mental health clinical rehabilitation.
- › Assertive outreach teams provide an intensive service to people aged 18 to 64 years with an enduring mental illness, including care coordination, education, support, advocacy and rehabilitation, and operate from approximately 8:00am to 9:30pm in Hornsby, RNS and Ryde Hospitals and Brookvale Community Health Centre.
- › District-wide community services for older people aged 65+ include the Behaviour Assessment Management service for the assessment and management of the behavioural and psychological symptoms of dementia (BPSD).
- › The Outreach Support for Children and Adolescents is a district-wide assertive follow up team for children and young people up to the age of 17 years, or 18 years if still at school, who are experiencing acute and complex mental health problems. CYMHS also works with local schools and TAFE (Technical and Further Education) institutions through the school-link initiative to improve the health of children and young people.
- › Admitted detoxification: The Herbert Street Clinic at RNS Hospital provides 11 beds for specialist medical care to people who are experiencing withdrawal symptoms because of their substance abuse. Under the NSW Drug and Alcohol Treatment Act 2007, the Clinic also offers 4 beds as part of the state-wide involuntary drug and alcohol treatment (IDAT) program at the Herbert Street Clinic at RNS Hospital. State-wide demand for the IDAT service reportedly exceeds current bed capacity and there is regularly a waiting list to access these beds.
- › Opioid Treatment Program (OTP) provides dosing of methadone and buprenorphine along with education, counselling, assessment, support and case management to people with opioid dependence. The OTP is provided predominately from the Herbert Street Clinic at RNS Hospital and at Brookvale Community Health Centre. The service works closely with community pharmacists and local GPs to support consumers in the community.
- › Magistrates Early Referral Into Treatment (MERIT) is a state-wide program that operates out of local courts in Hornsby, Manly, North Sydney and Ryde. Models of care delivered under the program depend on the specific nature of the issues faced by the consumer but are closely managed by local MERIT teams.
- › Community Counselling/Psychosocial Interventions (including gambling): Community-based counselling teams provide assessment, early intervention, ongoing treatment and follow-up/aftercare following an admission or ED presentation. Teams are located in community health centres and at hospitals across NSLHD, operating from 8:30am to 5:00pm, Monday to Friday with limited evening and Saturday services.
- › Youth Drug and Alcohol Counselling: DA counsellors provide sessions in youth specific contexts. New services include substance use/abuse in pregnancy and hepatitis C treatments.

Drug and Alcohol Services

The Drug and Alcohol (DA) service provides treatment for consumers with drug and/or alcohol use issues through multiple service offerings that also address medical and mental health related problems. The core business of the service is to support people to cease and/or better manage their substance use issues. Services span the continuum from primary prevention and education through non-admitted management, to admitted detoxification and rehabilitation, and ongoing management in the community setting.

- › Consultation Liaison services within hospitals: ED is often the ‘front door’ for many consumers requiring assessment and treatment for DA-related issues. Care for DA consumers presenting to ED is coordinated through DA Consultation Liaison services, psychiatry registrars and MHDA ED Clinical Nurse Consultants.

COMMUNITY-BASED MENTAL HEALTH SERVICES ARE PROVIDED BY SPECIALIST MULTIDISCIPLINARY CHILD AND YOUTH, ADULT, AND OLDER PEOPLES MENTAL HEALTH TEAMS.

NSLHD DA services liaise with, refer to, and receive clients from external organisations including:

- › Sydney Drug Education and Counselling Centre provides counselling and support for young people aged 14-25 years with problematic alcohol and other drug use and their families. This service is offered at Manly and Chatswood.
- › Kedesh Rehabilitation Services (KDS), located at the Mona Vale Hospital (Phoenix Treatment Facility), provides client-centred support both prior to, during and after completion of a six week intensive day program of treatment for co-occurring substance use and mental illness for up to 20 clients.
- › Drug and Alcohol Youth Support Services for young people aged 12 to 18 years and their families on the Northern Beaches provides a harm reduction model and peer to peer mentoring for youth and their families.

Other DA services commissioned by the Sydney North Primary Health Network (SNPHN) are available to residents of Northern Sydney. Further details are available at [SNPHN Mental Health Service Providers](#).

37.2 Issues and Opportunities

The Mental Health and Drug and Alcohol Directorate developed the NSLHD Mental Health Service Plan 2017-2026 and the NSLHD Drug and Alcohol Service Plan 2017-2026 to respond to changes in the operating environment, broader changes and new evidence relating to service delivery models and feedback received through consultation with staff, service partners and consumers. The plans addressed the effects of hospital developments in NSLHD and responded to the NSW Government's Mental Health Reforms and issues identified in the:

- › The National Mental Health Commission 2014 Review of Mental Health Programmes and Services which recommended improved service coordination and integration across the health system and noted the particular needs of children and youth people, Aboriginal and Torres Strait Islander people, people at risk of suicide and people with severe and complex mental illness.
- › NSW Mental Health Commission Living Well: A strategic plan for mental health in NSW 2014-2024 which articulated a vision of people living well in their community and on their own terms.

- › NSW My Choice: Pathways to Community Living Initiative which outlined a coordinated approach to supporting people with enduring and serious mental illness who have been in hospital for more than 12 to, wherever possible, re-establishing their lives in the community.

Joint regional mental health planning

- › Since the development of the NSLHD Mental Health Drug and Alcohol Service Plans, a new [National Mental Health and Suicide Prevention Plan 2018-2022](#) (the Fifth Plan) has been released along with the [NSW Health Strategic Framework and Workforce Plan for Mental Health Services 2018-2022](#). These plans require the development and public release of joint regional mental health and suicide prevention plans. This work has already been initiated by the Sydney North Primary Health Network in collaboration with NSLHD. The joint regional plan aims to improve the outcomes and experiences for consumers and carers, will focus on prevention and early intervention, and will connect health services with areas such as disability, housing, education and employment.

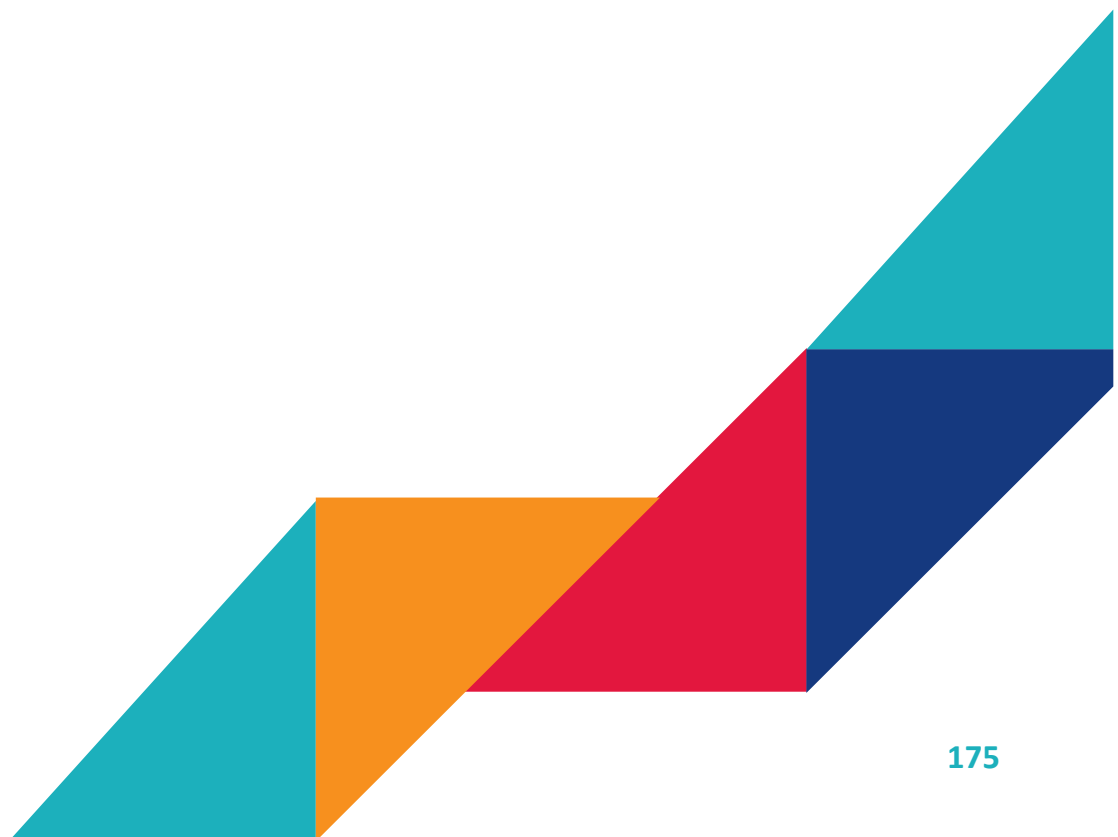
Facility redevelopment

- › The NSLHD Mental Health Service Plan 2017-2026 notes that Macquarie Hospital is identified in the master planning for all NSW stand-alone mental health services as part of the Pathways to Community Living Initiative (PCLI) which will transition consumers with long and very long stays into the community. Following the implementation of the PCLI where appropriate, there will be an opportunity to re-align the existing capacity to deliver future service models and to redevelop and upgrade the Macquarie Hospital site to meet future MH service delivery needs across NSLHD.
- › The NSLHD Asset Strategic Plan identified the need for 15 dedicated older persons' mental health beds as a priority for development at Hornsby Hospital and acknowledged that the physical space and fabric of the Herbert Street Clinic is not fit for purpose for future service delivery and is unable to support contemporary models of care for drug and alcohol clients. Options are currently being considered for the Herbert Street Clinic and its redevelopment/relocation remains a priority.

37.3 Strategic Directions

The NSLHD Mental Health Services Strategic Plan and the NSLHD Drug and Alcohol Service Plan cover the period 2017 to 2026 and provide an outline of service priorities including to:

- Address current and future population needs by focusing on prevention, early intervention and community-based care, responding to increased prevalence of complex clinical presentations, ensuring that the physical health needs of both mental health and drug and alcohol service consumers are effectively met, and understanding and addressing the needs of special consumer groups.
- Enhance service capacity and capability by maintaining a contemporary and evidence-based service, optimising workforce skills and configuration to support flexible responses to service needs, aligning resources to current and future service needs, and pursuing service delivery investment opportunities as they arise.
- Develop and implement a comprehensive partnership management framework.
- Manage transformational change effectively during a period of significant change with a number of hospital and community health centre developments, changes in the model of care for selected services, the integration of the NDIS, and transition to activity-based funding for mental health services.
- Foster innovation and leading practice by further enhancing research and evaluation capabilities, contributing to the international evidence base for mental health services, and leveraging development in information communication technologies across clinical and corporate settings to improve consumer outcomes.



PRIMARY AND COMMUNITY HEALTH

38

PRIMARY AND COMMUNITY HEALTH

38.1 Service Description

Primary and Community Health (PaCH) provides health services in people’s homes, early childhood and community health centres and other community locations. Services are provided in partnership with hospitals, GPs and other primary care providers, residential aged care facilities, independent Aboriginal health services and other providers. PaCH services have four core functions:

- Assessment, referral and episodic or short-term treatment for common health conditions
- Prevention, early detection and intervention for health problems or health risks
- Ongoing care of chronic and complex conditions in collaboration with specialist services

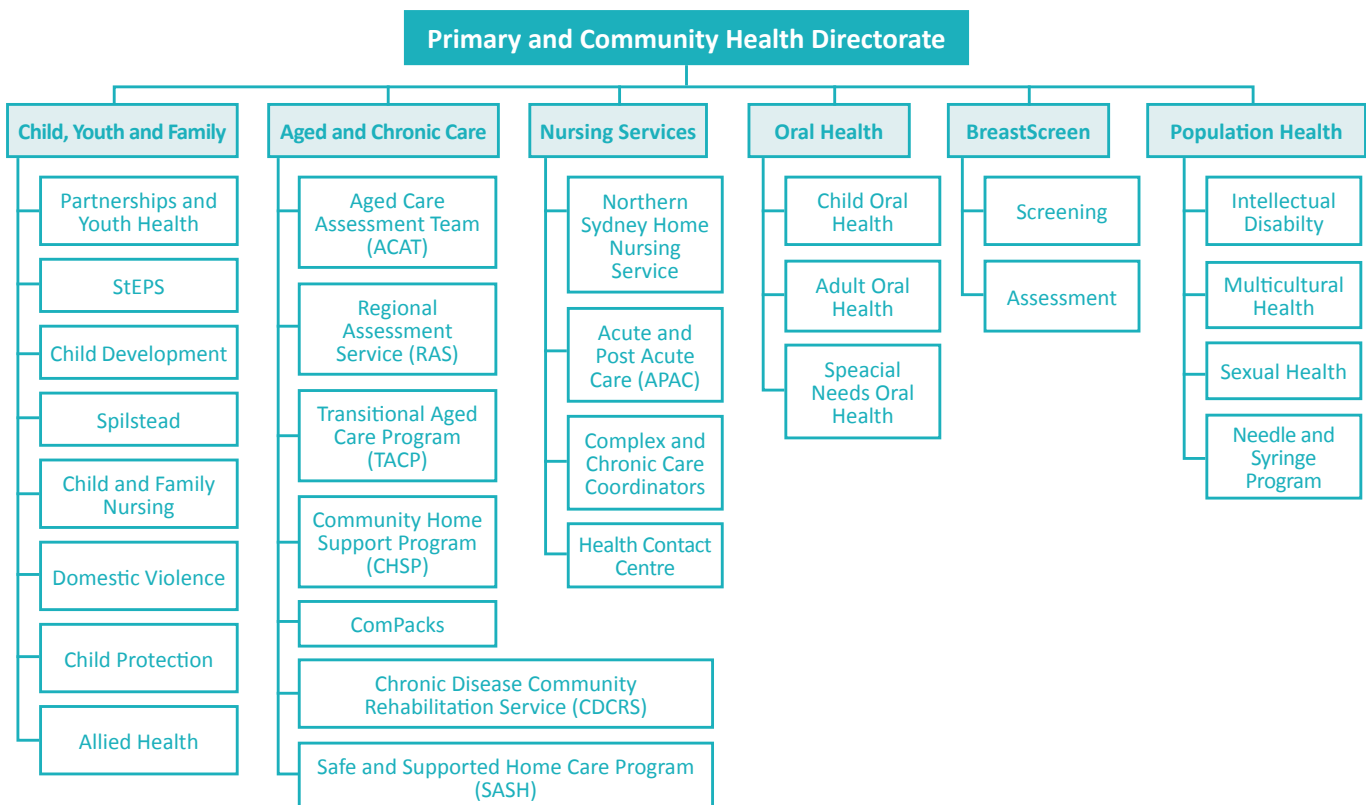
➤ Acute care in the community.

Services are organised under six broad clinical streams including: Child Youth and Family Health; Aged and Chronic Care; Nursing services; Oral Health; BreastScreen; and Population Health. These streams and associated services are described in Figure 7.

Details and strategic directions for Child, Youth and Family Health are described in a separate section of this CSP. Aged care and chronic and complex services provided by PaCH complement those services described in the Rehabilitation and Aged Care and Chronic and Complex Medicine clinical network sections.

Table 26 shows the distribution of community health centres across the four planning sectors. While PaCH delivers services from these facilities they are managed by the executive teams at the local acute hospitals.

Figure 7: Primary and community health services



Source: NSLHD Primary and Community Health

Table 26: Community health centres by location and type

	Hornsby Ku-ring-gai	Northern Beaches	Lower North Shore	Ryde Hunters Hill
Community Health Centres	Berowra Brooklyn Galston Pennant Hills Turramurra (Hillview) Wiseman's Ferry	Brookvale Mona Vale Dalwood (Seaforth)	Chatswood Cremorne RNS, St Leonards	Top Ryde
Early Childhood Health Centres	Berowra [#] Galston [#] Hornsby Pennant Hills [#] St Ives	Avalon Balgowlah Brookvale Frenchs Forest Mona Vale [#]	Chatswood [#] Cremorne Crows Nest Lane Cove	Marsfield Top Ryde West Ryde
Family Care Centres	Koala - Hornsby Hospital	Dalwood - Seaforth		Camellia - Ryde Hospital
Community Mental Health Centres	Wahroonga	Brookvale		Eastwood - Ryde Hospital
Other Health Centres				Dental Clinic North Ryde

Source: NSLHD intranet and advice from Divisional Managers # indicates that the Early Childhood Health Centre is collocated with Community Health Centre

38.2 Issues and Opportunities

Place-based approaches to community development have been instituted at a regional level to address entrenched disadvantage with a particular emphasis on out of home care, child protection and domestic violence. PaCH services will work collaboratively with Family and Community Services, Education, Local Government and other stakeholders and communities in Ryde, Dee Why, Collaroy, Hornsby and the Ivanhoe estate in Macquarie Park to improve services, support and better outcomes

38.3 Strategic Directions

The PaCH directorate will focus on developing a clinical services plan encompassing the range of services provided in NSLHD.



**13 COMMUNITY HEALTH CENTRES,
17 EARLY CHILDHOOD HEALTH CENTRES.**

39

HEALTH CONTACT CENTRE

39.1 Service Description

The [Health Contact Centre \(HCC\)](#), located at Macquarie Hospital, is a single point of contact for referral and intake, registration and clinical handover for:

- › Acute Post-Acute Care (APAC)
- › Northern Sydney Home Nursing Service (NSHNS)
- › Chronic Disease Community Rehabilitation Service (CDCRS)
- › Oral Health
- › Commonwealth Home Support Program (CHSP) for Allied Health services
- › Safe and Supported at Home (SASH) Program.

Referrals are received from organisations and clinicians within and external to NSLHD, including GPs, private hospitals, non-government and community organisations. Referrals from the My Aged Care portal are also received via the HCC. Referrals are received from organisations and clinicians within and external to NSLHD, including GPs, private hospitals, non-government and community organisations. Referrals from the [My Aged Care](#) portal are also received via the HCC.

39.2 Issues and Opportunities

- › The HCC encompasses a wide range of services, each with unique and diverse models of care, service requirements and client groups. New services are progressively being incorporated into the HCC.
- › IHCC staff frequently require training and ongoing support to work with new software platforms and non-standard processes.
- › My Aged Care and the electronic medical record are separate and unique documents, requiring double entry of information, which is time consuming and presents risks of data errors or discrepancies.

39.3 Strategic Directions

The Health Contact Centre will focus on incorporating the Child, Youth and Family Service, Safe and Supported At Home Program and Palliative Care Services into its service scope.

40

ACUTE POST-ACUTE CARE/HOSPITAL IN THE HOME

40.1 Service Description

The Acute Post-Acute Care /Hospital in the Home (APAC/HITH) service provides multidisciplinary care for adults and children who would otherwise require hospitalisation. The service targets clients who live, work or attend school in NSLHD and who require care for acute conditions or exacerbations of chronic conditions that can be safely managed in the community. Care is provided by a multidisciplinary team of medical, nursing and allied health staff.

Guided by the Adult and Paediatric Hospital in the Home Guideline, APAC/HITH provides 7 days a week service with a maximum of twice daily visits either at home or in one of the non-admitted clinics located in Hornsby, RNS and Ryde Hospitals and Mona Vale Community Health Centre. Hornsby and RNS hospitals sites provide both adult and paediatric APAC/HITH non-admitted clinics

APAC/HITH models of care include:

- GP Shared Care Program, an ongoing collaboration between the Sydney North Health Network and the APAC. This program reduces avoidable hospital presentations and admissions by allowing registered GPs direct access to relevant patient documentation, consumables and medications required to initiate short-term treatment for eligible patients.
- Paediatric Hospital in the Home services provides acute, sub-acute and post-acute care to children and families as a substitution or prevention of in-hospital care.
- Intravenous Ferric Carboxymaltose (Ferinject) administration to patients with iron deficiency anaemia.
- Medical model of care provides in-house medical expertise for patients, especially those requiring parenteral antibiotic therapy, and strengthens the clinical governance of the service.

APAC/HITH provided a total of 3,706 episodes of care to 3,212 patients in 2017/18 with an average length of stay of 5.1 days. There has been a slight reduction in activity associated with improved antimicrobial treatment regimens and shorter lengths of stay. A significant proportion of the activity is attributed to patients with iron deficiency anaemia requiring intravenous infusion of Ferinject.

40.2 Issues and Opportunities

- Some medical staff are reluctant to refer to the service. Referrals could be improved by continued education of medical staff both in primary care and hospitals on the type of patients the service is able to treat; the benefits of referring to the service; and strengthening antimicrobial stewardship.
- The increasing age, acuity and comorbidities of patients referred to APAC/HITH affect the number of interventions required and their length of stay in the service. Integration with the older persons' rapid response teams could provide an opportunity to identify clients who can be safely discharged early or to prevent hospital representations.
- Constrained APAC/HITH medical coverage limits the type of patients that the service can safely admit. Increasing the scope of medical input and treatments for APAC clients would attract staff and referrals.
- Uncertainty of the number of referrals expected from the new Northern Beaches Hospital makes service planning difficult.

40.3 Strategic Directions

The APAC/HITH service will focus on developing a comprehensive plan and resource strategy to expand the capacity and capabilities of the service and increasing referrals from hospitals and primary care providers.

3,212 patients, 3,706 episodes of care, average length of stay 5 days.

41

NORTHERN SYDNEY HOME NURSING SERVICE

41.1 Service Description

The [*Northern Sydney Home Nursing Service \(NSHNS\)*](#) provides community-based nursing and allied health care to people both within their homes and in clinic environments across NSLHD hospitals and community health centres.

There are six NSHNS hubs across NSLHD including: Leighton Lodge at Hornsby Hospital, Hillview Community Health Centre in Ku-ring-gai, Mona Vale and Brookvale Community Health Centres on the Northern Beaches, RNS Hospital for the Lower North Shore, and Macquarie Hospital for Ryde-Hunters Hill. Clinics are provided at Ryde Hospital and Chatswood, Mona Vale and Brookvale Community Health Centres.

Services provided include comprehensive patient assessment; dementia care and support; complex wound management; continence care; palliative/end of life care; oncology support; social work services; short-term personal care and Safe and Supported at Home package assessment. NSHNS is also an approved provider for National Disability Insurance Scheme (NDIS) clients.

41.2 Issues and Opportunities

- › Implementation of the strategies in the [*Bilateral Agreement between the Commonwealth and New South Wales on coordinated care*](#). The Commonwealth and NSW acknowledge that while Australia has a high performing health system, some patients with chronic and complex conditions experience the system as fragmented and difficult to navigate; it also notes opportunities to reduce avoidable demand for health services. The Agreement sets out a suite of reforms, many of which are expansions or extensions of existing service delivery models (for example aged care, care

coordination, multidisciplinary team care, palliative and end-of-life care, system integration, data collection and analysis), that will have implications for how NSHN and APAC provide services in the community. How these reforms are implemented and the impact on services is yet to be determined.

- › NSHNS's role as a NDIS and CHSP provider, mainly related to lack of clarity regarding funding for NDIS nursing interventions and difficulty achieving CHSP targets due to current recruitment issues and staffing vacancies.
- › The opening of the Northern Beaches Hospital has presented gaps in referral pathways and information gathering, which includes continuity of referral pathways post transition and the inability to view admitted clinical records in real time.
- › The service would benefit from being included in NSW Ministry of Health policies (such as medication handling); NSLHD eMEDs rollout to PaCH services to enable community discharge letters within the electronic medical record for upload to HealtheNet for GPs; and increased clinic space to enable daily wound clinics in all locations and the potential expansion of complex wound clinics at RNS and Hornsby hospitals.

41.3 Strategic Directions

The Northern Sydney Home Nursing Service will focus on developing and implementing the NSLHD Integrated Chronic and Complex Care Plan, and incorporating telehealth platforms into chronic disease support and wound management services.

NSHNS delivered 170,362 occasions of service to 5,700 patients in their own homes in 2017/18.

AGED CARE SERVICES

42.1 Service Description

Accessed through the Commonwealth [My Aged Care](#) portal or contact centre, PaCH Aged Care Services provide assessment (via the Aged Care Assessment Team and Regional Assessment Service) and allied health and nursing intervention and support under various programs including the Commonwealth Home Support Program, Home Care Packages, Transitional Aged Care, ComPacks and the new Safe and Supported at Home program.

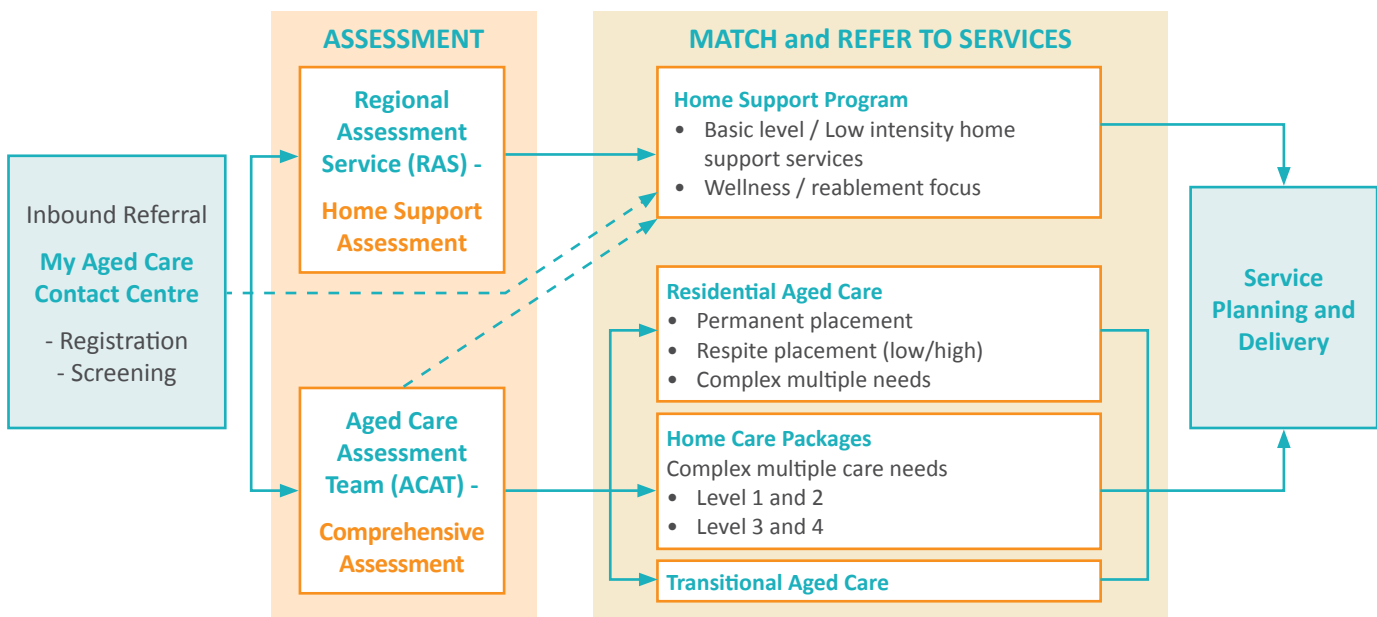
- › The [Aged Care Assessment Team \(ACAT\)](#) assesses the care needs of complex frail older people, to determine their eligibility for services provided under the [Commonwealth Aged Care Act 1997](#). ACAT intake is managed through a single NSLHD office based at Macquarie Hospital, with four clinical teams based at Hornsby, RNS and Ryde Hospitals, and Mona Vale Community Health Centre. Clients can be assessed in the community or as admitted patients in private and public hospitals. The majority of ACAT assessments and subsequent care coordination is time limited and completed within days of the assessment. Vulnerable clients are case managed to the point of referral to alternate case management (approximately three months). The service is staffed by registered nurses, social workers, occupational therapists, physiotherapists, psychologists and administrative staff.
- › The [Regional Assessment Service \(RAS\)](#) is an assessment and referral service for older people who live at home and are seeking care support under the Commonwealth Home Support Program. There are three Regional Assessment Services in NSLHD, two operated by non-government organisations and one by the NSLHD Primary and Community Health Service. The NSLHD Regional Assessment Service also provides assessments and referral support to Western Sydney LHD.
- › The [Commonwealth Home Support Program](#) was launched in 2015 to build on, consolidate and streamline the home support programs that came before it including, among others, the Home and Community Care (HACC) and National Respite for Carers Program. As an entry-level program, the CHSP is designed to provide small amounts of a single service or a few services to a large number of frail older people who have difficulty performing activities of daily living without help due to functional limitations. CHSP services can be delivered on a short-term, episodic or ongoing basis. Higher intensity episodic or short-term services may also be provided where improvements in function or capacity can be made or further deterioration avoided.
- › The [Home Care Packages Program](#) helps older people with complex care needs to live independently in their own homes. Part of the continuum of care for older people, this program is positioned between the Commonwealth Home Support Program and [residential aged care](#). Home care package services are provided under a consumer directed care basis giving clients flexibility and choice in the types of care and services, how they are delivered, by whom and when.
- › The [Transitional Aged Care Program \(TACP\)](#) provides short-term care to optimise the functioning and independence of older people after a stay in hospital. The service is goal-oriented, time-limited and therapy-focused, and seeks to enable older people to return home after a hospital stay rather than enter residential aged care prematurely. These packages include low intensity therapy such as physiotherapy and occupational therapy, social work and nursing support or personal care.

› **ComPacks** was developed for people of any age being discharged from NSW public hospitals and who need immediate support to return home safely using a combination of community case management and non-clinical community services. An ACAT assessment is not required. A ComPacks package may include assistance with personal care, domestic assistance, transport and social support, and is available for up to six weeks from the time of hospital discharge. ComPacks is an important patient flow tool to support early discharge from hospital.

› The Safe and Supported at Home Program, a new component of the compact program, provides a mix of clinical and non-clinical services, including home and personal care, to people aged between 18 and 65 years with reduced functional capacity, with the specific aim of avoiding unnecessary admissions to hospital or residential aged care. The program targets clients who previously may have received disability supports through Family and Community Services and who cannot access the NDIS-funded supports.

Figure 7 illustrates the relation between the various Commonwealth aged care programs.

Figure 8: My aged care assessment and service referral pathways



Source: *NSW Health*

42.2 Issues and Opportunities

› The aged population profile of NSLHD means that there is high and growing demand for services which sometimes exceeds the capacity of services (in terms of staffing) or funded care packages. In order to meet future demand, Aged Care Services need to provide flexible service delivery models, person centred care, standardised care across services, and integrated care where appropriate. Community aged care services have the opportunity to lead the development of an integrated, community-based

model of care for older people. There is a worldwide trend for focusing on integrated care programs for aged people and those with chronic diseases. NSLHD has been piloting a model of care with the Northern Sydney Home Nursing Service in the Northern Beaches area, where a geriatrician is involved in the care of aged care clients.

- › In September 2018 the Australian Government announced a [*Royal Commission into Aged Care Quality and Safety*](#). An interim report is expected to be provided by 31 October 2019 and a final report by 30 April 2020. Although this report is mainly examining residential aged care, it may have implications for NSLHD home-based services. The manager of the NSLHD Aged Care Assessment Team has been nominated as the district representative to the NSW Health steering committee. The Royal Commission is required to examine:
 - › The quality of aged care services
 - › How best to deliver aged care services
 - › The future challenges and opportunities for delivering accessible, affordable and high quality aged care services
 - › What is required to strengthen the system to ensure that the services provided are of high quality and safe, and are person centred
 - › How best to deliver services in a sustainable way.
- › Short term contractual arrangements for the provision of many of the Commonwealth-funded programs means that there is a degree of uncertainty of ongoing provider status. Many ACAT and RAS staff are on time limited employment contracts, posing risks for staff recruitment and retention and service continuity.
- › My Aged Care reforms have provided opportunities for not-for-profit and non-government organisations to increase their role in the provision of services to local populations. NSLHD will need to consider the appropriateness of continuing to be a direct provider of selected services where they are

adequately provided elsewhere.

- › Introduction of My Aged Care and other aged care reforms, including the development of new services and the discontinuation of previous programs, has presented a number of challenges including client delays in accessing appropriate services due to the complexity of the My Aged Care application process; more stringent eligibility criteria and long wait lists for selected programs; and multiple service providers requiring significant coordination.

42.3 Strategic Directions

The Aged Care Service will focus on developing integrated community-based models of care for older people, determining its future as a provider of selected Commonwealth-funded services, and responding to the recommendations of the [*Royal Commission into Aged Care Quality and Safety*](#).



43

CHRONIC DISEASE SERVICES

43.1 Service Description

- › The Northern Sydney Home Nursing Service provides long-term support and monitoring for patients with chronic diseases, including dementia and end of life care.
- › The Chronic Disease Community Rehabilitation Service (CDCRS) targets patients with a confirmed diagnosis of chronic respiratory and/or chronic heart failure. The multidisciplinary program provides short-term intervention through exercise rehabilitation, disease related education, nutrition, occupational therapy, clinical psychology, respiratory specialist and nursing services. Services are provided at clinics across the LHD, as well as in a client's home if required.

43.2 Issues and Opportunities

- › There are increasing referrals and enrolments to chronic disease services. New models of care and service delivery will need to complement the current face-to-face model so that more patients can access services. Consideration should also be given to integration with the Management of Cardiac Failure Service and other home-based programs.
- › Eligibility for structured rehabilitation programs for chronic diseases is currently restricted to people with respiratory diseases and cardiac failure. Research suggests that other people with chronic diseases such as cancer, diabetes and chronic kidney disease also benefit from exercise training. Consideration should be given to the development of a single chronic disease rehabilitation service with disease-specific components to improve access and avoid duplication of resources.

- › CDCRS has implemented translational research related to ground based walking, and recognises opportunities in expanding this type of research to other rehabilitation models of care.

43.3 Strategic Directions

The Chronic Disease Service will focus on integrating services across the LHD, considering expansion of rehabilitation programs to include patients with other chronic conditions, and translating research into clinical practice.

44

MULTICULTURAL HEALTH SERVICE

44.1 Service Description

The [Multicultural Health Service](#) facilitates equitable access to health care for people from culturally and linguistically diverse (CALD) communities. Located in the Cremorne Community Health Centre, services include community information and education, consumer engagement, cultural competency training for health staff, capacity building of other health services, refugee health assessment, volunteer mentoring, and multilingual resource development.

44.2 Issues and Opportunities

- › Increasing cultural diversity in NSLHD and difficulties engaging with small, emerging CALD communities with poor community infrastructure. This includes recruiting skilled and experienced staff to support small and emerging communities (for example the large Tibetan refugee community does not have a Tibetan-speaking GP anywhere in Australia).
- › Difficulty in planning services due to fluctuation in the number of referrals for Refugee Health Assessment Programs for Tibetan refugee and humanitarian entrants, with large number of referrals sometimes received at short notice. In 2018 there were 99 referrals, in comparison to 52 referrals in 2017. Although recording of people requiring an interpreter has increased, reports on the number of people who receive an interpreting service have been difficult to obtain. Multicultural Health is currently looking at ways to improve data collection and reporting by implementing Community Health and Outpatient Care eMR.
- › Provision of multilingual resources within constrained budgets.

- › Development of a NSLHD Multicultural Health Plan in line with the recently released [NSW Plan for Healthy Culturally and Linguistically Diverse Communities: 2019-2023](#) and yet to be released NSW Refugee Health Plan.

44.3 Strategic Directions

The Multicultural Health Service, in partnership with CALD communities, local government and community service providers, will focus on implementing the NSW Health Plan for Healthy Culturally and Linguistically Diverse Communities 2019-2023 and the NSW Refugee Health Plan 2018-2023 (due for release at the end of 2019), improving health literacy, identifying health needs and building capacity to manage those needs.

An estimated

327,643

(37%) NSLHD residents were born overseas; Just over a quarter (227,445) were born in non-English speaking countries. 28% of NSLHD residents speak a language other than English at home.

Ryde-Hunters Hill is the most culturally diverse area in NSLHD with nearly 40% of residents born in non-English speaking countries and 45% speaking a language other than English at home. The most commonly spoken languages were Mandarin, Cantonese, Korean, Italian and Hindi. Mandarin speakers doubled between 2011 and 2016 to over 56,000 residents.

45

SEXUAL HEALTH/ HIV SERVICE

45.1 Service Description

The [*Sexual Health/HIV and Related Services*](#) offers specialised services for people living and working within NSLHD, as well as support and advice to health care professionals. Services include testing and managing sexually transmitted infections, ongoing care, advice and support for people living with HIV or viral hepatitis, harm minimisation and education, and patient counselling and advocacy.

Clinic 16 in the RNS Community Health Centre is the main clinic; a weekly satellite walk-in clinic, mainly targeting youth, is provided at Brookvale Community Health Centre. Patients requiring services not provided at the Brookvale clinic are referred to and triaged to attend Clinic 16.

45.2 Issues and Opportunities

- › Meeting increased clinical need within current resources.
- › Increasing the profile of the service across NSLHD, with both patients and staff.
- › Strengthening relationships with key stakeholders so that priority populations can be targeted.

45.3 Strategic Directions

The Sexual Health/HIV Service will focus on increasing service uptake in priority populations, especially young people aged 15 to 29, and streamlining client referral pathways to other relevant services for patients discharged from the sexual health/HIV service.

46

NEEDLE AND SYRINGE PROGRAM

46.1 Service Description

The NSLHD Needle and Syringe Program is a non-clinical harm minimisation program to reduce the spread of blood borne viral infections such as hepatitis C and HIV among people who inject drugs and the wider community. The service also offers brief interventions, information, counselling and referrals. Services are located at Brookvale and RNS Community Health Centres and sterile injecting and sharps disposal equipment can be accessed 24/7 through “FitPack” automated dispensing machines located outside numerous community health centres across NSLHD.

46.2 Issues and Opportunities

- › Increasing the profile of the service with other health staff and hard to reach population groups across NSLHD, including people from CALD backgrounds.
- › Strengthening relationships and referral pathways with key stakeholders to ensure clients have more timely access to services.

46.3 Strategic Directions

The Needle and Syringe Program will focus on increasing face-to-face client contact, mapping and improving access to wound and vein care, and hepatitis C treatment services.

47

INTELLECTUAL DISABILITY SERVICE

47.1 Service Description

The [Northern Sydney Intellectual Disability Health Service](#) provides multidisciplinary health assessment for school aged children, adolescents and adults with intellectual disability and complex health needs. The assessment service also provides advice and education to other services providing care for people with an intellectual disability. The service was previously provided by the Centre for Disability Studies and is now part of the NSLHD Primary and Community Health Service. Clinics are held at the Cremorne Community Health Centre, and at a school offsite in NSLHD for those children who are unable to attend the clinic.

47.2 Issues and Opportunities

The roll-out of the NDIS has had a significant effect on the operation of the service. There have been more requests for health assessment reports for NDIS applications and reviews. Some families have also needed assistance in negotiating the complex NDIS system, with increased stress noted in many families.

Finding skilled and knowledgeable staff in the specialised field of intellectual disability remains a challenge.

NSW Health is establishing a networked model of specialised intellectual disability health teams and intellectual disability positions across NSW. Six teams and nine specialised positions will build the capacity of health professionals to better meet the needs of people with intellectual disability and improve their quality and experiences of care. NSLHD will be one of these teams, providing consultative services to Northern NSW and Mid North Coast LHDs.

The transfer of services from the Centre of Disability Studies to NSLHD provides greater opportunities for cross disciplinary care.

47.3 Strategic Directions

The Intellectual Disability Assessment Service will focus on developing outreach consultative services to Northern NSW and Mid North Coast LHDs.



NSLHD IS ONE OF 6 CENTRES IN NSW SUPPORTING HEALTH PROFESSIONALS TO BETTER MEET THE NEEDS OF PEOPLE WITH INTELLECTUAL DISABILITY AND IMPROVE THEIR EXPERIENCE OF CARE.

48

DOMESTIC VIOLENCE SERVICE

48.1 Service Description

The [NSW government framework for reform](#) defines domestic and family violence includes behaviours that control, intimidate, terrify or coerce a person causing them to fear for their own (or someone else's) safety. The term "violence, abuse and neglect (VAN)" is used by NSW Health as an umbrella term for three primary types of interpersonal violence:

- › Child abuse and neglect
- › Sexual assault
- › Domestic and family violence.

In NSLHD the term VAN has not routinely been used with services provided through two main portfolios:

- › the Northern Sydney Adult Sexual Assault Service
- › and the Northern Sydney Child Protection Service

This section describes the Domestic Violence Service while the Northern Sydney Child Protection Service is addressed under Child, Youth and Family Health Services chapter of this Clinical Services Plan.

[NSW Health Integrated Prevention and Response to Violence, Abuse and Neglect Framework](#) and supporting resources provide guidance on the enhancement, development and implementation of system redesign and integrated service responses by NSW Health and partner agencies.

48.2 Issues and Opportunities

As part of a state-wide review of VAN services it was noted that:

- › NSLHD VAN services do not currently operate under an integrated service structure. The challenge is supporting information sharing across the various VAN and other health services.
- › Ongoing care is not available within NSLHD for adult victims of domestic and family violence.
- › There are limited VAN responses within NSLHD for children under 10 years of age displaying problematic or harmful sexual behaviours where they do not meet the referral criteria for another service.
- › The current domestic violence model provides support to health workers through consultancy but does not provide direct clinical services to victims of domestic violence. The recruitment of a domestic violence coordinator and domestic violence officer has formed the initial structure of a broader clinical domestic violence service, which is yet to be established. Opportunities for this service now include the addition of a clinical and domestic violence counselling service, which would provide a referral pathway for clients from other health services within NSLHD.

48.3 Strategic Directions

The NSLHD violence and abuse services will focus on redesigning services in line with the NSW Health Integrated Prevention and Response to Violence, Abuse and Neglect Framework.

The new NSW Health Integrated Prevention and Response to Violence Abuse and Neglect Framework will support the development of services in NSLHD.

BREASTSCREEN

49.1 Service Description

BreastScreen NSW is a population-based screening program which provides free biennial breast screening, and any necessary follow-up assessment, to women over 40 years, but specifically targeting women aged 50–74 years. No referral is required for this target population and there is no cost for ongoing screening mammograms or assessments, if required.

Service delivery is supported and guided by a range of policies and operating procedures and meet the [National Accreditation Standards](#) as defined by BreastScreen Australia.

BreastScreen Northern Sydney Central Coast (NSCC) operates on weekdays, excluding public holidays, and some Saturdays at selected sites. The service is provided from five fixed sites and two mobile units:

- › Fixed sites include:
 - › Hornsby Hospital
 - › Sydney Adventist Hospital (private provider contracted by BreastScreen NSW)
 - › Brookvale Community Health Centre
 - › Royal North Shore (RNS) Community Health Building
 - › Central Coast, 155 The Entrance Road, Erina
- › Mobile units visit:
 - › Ryde and Warriewood in Northern Sydney
 - › Woy Woy, Lake Haven and Bateau Bay on the Central Coast

All sites/units provide screening mammograms only while follow up assessments are provided at RNS Community Health Centre and Erina.

Breast Tomosynthesis was introduced to the RNS assessment clinic in 2013, and has now been implemented in Erina. Tomosynthesis is particularly useful for complex and/or dense breast tissue and is an extremely useful tool assisting radiologists with cancer detection.

The service is supported by speciality staff including radiologists, breast surgeons, breast physicians, radiographers, counsellors and administration and management staff. The service partners with primary health networks, Aboriginal services, Country Women's Associations and multicultural groups to maximise the number of eligible women who participate in the biennial screening program.

The service is performing well and meeting overall screening targets. The service exceeds the target for women aged 70–74 years, but meeting the target for women aged 50–69 years is proving more challenging. The service runs programs and specialised screening sessions targeting women from identified groups. The service has the highest participation or utilisation rates for:

- › Culturally and linguistically diverse women in NSW
- › Aboriginal and Torres Strait Islander women in metropolitan Sydney
- › Mobile van usage in NSW (increasing access to women away from the central sites).

49.2 Issues and Opportunities

While NSLHD is performing well and meeting overall screening targets, there is room for further improvement in the screening participation rates for women aged 50–69 years. There are also opportunities to increase participation in research and trials particularly in relation to the use of screening tools such as breast tomosynthesis.

Factors affecting service throughput and distribution of resources include:

- Population distribution and age profile across NSLHD relative to the target age range.
- Any changes to the target age groups determined by BreastScreen NSW.
- Changes in the proportion of women outside the target age range who wish to be screened.
- Changing attitudes to screening, and media coverage of screening and high profile women with breast cancer.
- Distribution of fixed and mobile screening units and participation of private providers in screening services.

A key challenge for the BreastScreen service is ensuring that there is sufficient capacity (staff, equipment, space) available now and in the future to meet service demand and achieve screening targets. Informed by the *Cancer Institute NSW, Capacity Planning for BreastScreen NSW to 2025*, a demand and capacity assessment will determine future capital investments and service distribution. This assessment will need to consider, among other things:

- The stage 2 redevelopment of Hornsby Hospital includes shell-space for a second screening room.
- The redevelopment of Ryde Hospital has potential to offer further opportunities to expand screening capacity.
- A range of service delivery options across public and private sectors will need to be considered in conjunction with consumers and the community.

49.3 Strategic Directions

BreastScreen services will focus on:

- Increasing participation rates in target populations, particularly women aged 50-69 years.
- Exploring new technologies to address emerging and current screening issues, for example tomosynthesis.
- Increasing participation in clinical trials and research projects.
- Reviewing current and projected screening activity, matching target population demand and participation rates with capacity across NSLHD.

50

ORAL HEALTH SERVICE

50.1 Service Description

The [NSLHD Oral Health Service](#) provides public dental services, free at the point of use, to all young people under 18 years of age and adults with a Health Care Card, Pensioner Concession Card or Commonwealth Seniors Health Card. Services provided include general dentistry such as examinations, fillings and dentures. Patients requiring specialist assessment and treatment including complex paediatric dentistry, oral and maxillofacial surgery, endodontic and periodontics are referred to Westmead Oral Health and Sydney Dental Hospital services.

NSLHD Oral Health services are delivered from 35 treatment chairs in dental clinics based in:

- › RNS Community Health Centre
- › Hornsby Hospital
- › Mona Vale Community Health Centre
- › Brookvale Community Health Centre
- › Top Ryde (Blaxland Rd) Oral Health Clinic
- › Macquarie Hospital (Cox's Rd) Oral Health Clinic

Oral Health also provides a dental service to children attending Stewart House in Curl Curl over three to four days per fortnight during school term.

The service is supported by a specialist oral surgeon, dental officers, oral health therapists, dental therapists, dental assistants, dental technicians and administrative officers.

There is a waiting list which is managed as outlined in the [NSW Health Priority Oral Health Program](#). NSW public oral health services also offer dental care to eligible patients through the [NSW Oral Health Fee for Service Scheme](#). Under this scheme patients can be issued with a voucher by the public oral health service to receive care from a registered private dental provider. This helps public oral health services to improve access to dental care and manage dental waiting lists.

50.2 Issues and Opportunities

- › Attracting appropriately experienced and qualified clinicians to service the growing ageing population.
- › Expanding and improving models of care for priority patient groups.
- › Delivering dental education and oral health promotion services while managing the increasing demand for other oral health services.
- › Opportunities to integrate oral health within the existing health promotion programs in childhood and chronic disease management.

50.3 Strategic Directions

Oral Health services will focus on developing strategies to meet the needs of the growing aged population, along with priority population groups such as patients with cancer, Aboriginal and Torres Strait Islanders, refugees and others with special needs, and increasing oral health education and promotion services.

APPROXIMATELY 15,000 PATIENTS RECEIVED ORAL HEALTH CARE OVER 35,000 VISITS FROM 35 DENTAL TREATMENT CHAIRS IN 6 CLINICS ACROSS NSLHD IN 2017/18.

CLINICAL SERVICES

51

ALLIED HEALTH

51.1 Service Description

Allied health services are provided across a range of service delivery models including: admitted and non-admitted care; hospital avoidance programs for acute illness; rehabilitation programs; mental health and drug and alcohol admitted units; community services; and care for consumers with complex and ongoing chronic disease. Allied health staff work in discipline-specific clinics and services, as well as being part of multidisciplinary teams.

A professorial position was established in 2018 to support allied health research.

The NSLHD Allied Health Professionals workforce comprises of 1,563 (1,073 full time equivalent), representing 16 per cent of the NSLHD clinical workforce. The 22 disciplines in this workforce include:

- › Art Therapy
- › Audiology
- › Child Life Therapy
- › Counselling
- › Diversional Therapy
- › Exercise Physiology
- › Genetic Counselling
- › Music Therapy
- › Nuclear Medicine Technology
- › Nutrition and Dietetics
- › Occupational Therapy
- › Orthoptics
- › Orthotics
- › Pharmacy
- › Physiotherapy
- › Podiatry
- › Psychology
- › Radiation Therapy
- › Radiography
- › Social Work
- › Speech Pathology
- › Welfare

NSLHD employs 68 (38.2 FTE) allied health assistants working in pharmacy, speech pathology, medical imaging, nutrition and dietetics, physiotherapy and occupational therapy.

Other allied health services are provided in private practice and through private hospitals and non-government organisations. Patients commonly have out-of-pocket expenses although some allied health attendances may attract Medicare rebates if a referral is made by a GP under specific mental health or chronic disease management programs.

NSLHD employs 68 allied health assistants in pharmacy, speech pathology, medical imaging, nutrition and dietetics, physiotherapy and occupational therapy.

Collectively the allied health disciplines are strategically led and represented on the NSLHD executive leadership team by the Director of Allied Health. Operational management of allied health staff and services is provided through the allied health departments within Hornsby, Mona Vale, RNS and Ryde Hospitals and through multidisciplinary services within the directorates of Mental Health Drug and Alcohol and Primary and Community Health.

Allied health supports the education of new graduates from a variety of education providers. In 2017/18 an estimated 157,352 hours of undergraduate allied health student placements were provided across the district.

51.2 Issues and Opportunities

Challenges faced by NSLHD allied health include providing high quality, effective and responsive services within allocated resources and ensuring that the right care is delivered by the right person at the right time. Many clinical networks and services identified increased demand and gaps in the provision or quantum of admitted and non-admitted allied health services, particularly where service models have changed.

Allied Health in ED

Due to increasing demand for allied health services in EDs across the district, a review of allied health ED services and the establishment of a strong allied health ED resource model would be beneficial.

- NSLHD allied health has different ED workforce models at each hospital. RNS Hospital has dedicated social work and physiotherapy staff for ED services. ED physiotherapists operate for extended hours seven days a week, enhancing the primary model of care. Social work services are available during standard business hours and on-call after hours. At Ryde and Hornsby Hospitals allied health services are available during business hours.
- From 2015/16 to 2017/18, there has been an average annual increase in ED allied health interventions (7.3 per cent), total patient attributable time (19.3 per cent) and time spent with patients (18.9 per cent) in the EDs across NSLHD. The proportion of patients that have had allied health interventions in ED has experienced an average annual increase of 3.8 per cent from 2015/16 to 2017/18.

Research

The development of a partnership with the University of Sydney saw the establishment of an allied health professorial position in January 2018. The aim of this position is to support allied health clinicians to engage in clinical research through the development of research questions and skills as well as assisting in grant and funding applications. An Allied Health Research Committee has been established, incorporating representatives from a range of disciplines, services and facilities to guide strategic research priorities. To further support the strategic vision and research plan, a research capacity workshop was held at the end of 2018 for allied health clinicians, with the recommendations to be reported in 2019. A major focus of allied health by 2022 is to utilise the existing audit and quality improvement skill-base of allied health professionals to move into publishable work. The overall outcomes will target translation of research findings to improve the provision of care for NSLHD patients and communities.

As partners in care, community members have a unique role in helping to determine research priorities and guide research teams to address their specific clinical and health care needs. The Professor of Allied Health will prioritise allied health research in NSLHD that focuses on the identified needs of health care consumers and the community.

Workforce development

The following workforce challenges have been identified for allied health:

- Leave relief provision for paid maternity, annual and extended unplanned leave to reduce resource deficits in service delivery.
- Allied health scope of practice changes to ensure a flexible adaptive workforce including advanced and expanded roles for professional grades and further appropriate increases in assistant-grade workforce.
- Aligning the skill set and mix of allied health to projected future need of consumers and the LHD.

Clinical analytics

An identified area for investment for allied health is the establishment of a Chief Allied Health Informatics Officer in NSLHD. This position would, together with the Chief Clinical Informatics Officer and Chief Nurse Informatics Officer, provides leadership within the Information Communication Technology Department to drive clinical analytics that inform and improve training, decision support, clinical workflow and clinical outcomes and assist in optimisation of the user interface of clinical systems, for allied health, nurses, physicians, and other multidisciplinary care providers.

51.3 Strategic Directions

Strategic directions include:

- Reviewing allied health requirements in ED and advise on distribution and organisation of allied health resources across all settings.
- Developing an allied health research plan in line with the NSLHD Research Plan that includes the key strategic areas identified at the research capacity workshop.
- Supporting allied health data governance, reporting and analysis across the district to drive allied health initiatives and build a responsive and adaptable workforce.

PHARMACY

52.1 Service Description

Each of the acute hospitals and the mental health service at Macquarie Hospital has an on-site pharmacy providing a range of services depending on the hospital case mix, size and acuity. The pharmacy services have an informal collegiate network but operate independently; employing their own staff and managing drug formularies as approved by the individual hospital or health service Drug and Therapeutics Committees. Pharmacy services are also provided at affiliated health organisations (Royal Rehab, Greenwich and Neringah Hospitals) but these operate independently and are not within the scope of this document.

Core pharmacy services provided at each hospital include:

- › Clinical pharmacy for example medication reconciliation and review, therapeutic drug monitoring, patient education, and provision of medicines information.
- › Medication safety and quality use of medicines activities, including participation in antimicrobial stewardship.
- › Dispensing of medications to admitted and non-admitted patients.
- › Purchasing, distribution and inventory management of pharmaceuticals.
- › Education and training for staff and undergraduate/postgraduate students.
- › Administration and medication policy management including Drug and Therapeutics Committee.
- › Financial management of pharmaceutical expenditure.

Specialist services available at RNS Hospital include:

- › Aseptic production of cytotoxic medications, extemporaneous preparations and parenteral nutrition (other hospitals purchase these products from private compounding companies).
- › Management of clinical trial drugs.
- › Specialist medicines information.

Uptake of technology in medication management is variable:

- › Hornsby and RNS Hospitals have implemented pharmacy managed automated dispensing cabinets (ADC) in patient care areas to provide improved medication safety and inventory management.
- › NSLHD commenced the roll-out of an electronic medication management system in December 2017 with all hospitals to be live by the end of 2019.
- › Dispensary robots to assist with drug distribution and inventory management have not yet been introduced to any pharmacy service, but are planned for the Hornsby Hospital redevelopment and are under discussion at RNS Hospital.



The roll out of the electronic medication management system across all NSLHD hospitals will be completed by the end of 2019, improving patient safety and service efficiency.

52.2 Issues and Opportunities

The provision of pharmacy services is becoming more complex. Medical knowledge is growing exponentially with new treatments becoming available for previously untreatable conditions. Poly-pharmacy and complex drug regimens coupled with an ageing population with multiple co-morbidities means that more patients are at risk of medication misadventure.

- › Demand for pharmacist review and intervention is increasing, but the greater complexity often also increases the time required by a pharmacist to review an individual patient.
- › Reduced lengths of stay and higher activity has resulted in the need to minimise the turn-around time for discharge medications, and reduced opportunities for pharmacists to educate patients on their medications prior to discharge.
- › Greater complexity has also increased expenditure on pharmaceuticals, which has put pressure on hospital budgets and prioritised the pharmacy service's role in cost containment.
- › Maintaining a sufficiently skilled workforce with the numbers required to meet the demands placed on the service is consistently challenging. There is high demand for student placements, leave relief is not built into staffing models, and there are high numbers of part-time and temporary workers. Public hospital pharmacist staffing is lower in NSW than for the other states, and considerably less than recommended in national guidelines, making innovative service models and use of technology particularly important. The development of expanded roles for both pharmacy technicians and pharmacists provides opportunities for skilled practitioners:

 - › Internationally, and in some Australian hospitals, technicians are taking over lower level clinical tasks thus providing pharmacists with more time to address complex clinical issues. In January 2018 RNS Hospital undertook a pilot project, in collaboration with the University of Sydney, to evaluate the impact of adding a technician to the clinical pharmacy service, the results of which were very encouraging. Further work on developing these roles at RNS Hospital is planned over the next 12 months.
- › In 2017 the Society of Hospital Pharmacists of Australia launched a [***national advanced practice framework***](#) which provides a mechanism for experienced clinical pharmacists to be acknowledged as advanced practitioners, potentially with an advanced scope of practice. As yet, this has not been implemented in NSW hospitals and to date, more advanced roles have not been reflected in any changes to legislation or industrial awards. Pharmacists remain legally responsible for technician work which limits the development of expanded responsibilities.
- › The implementation of electronic systems to manage medications should ultimately improve patient safety and staff efficiency, but it is essential that there is appropriate governance over these systems to maximise benefits and minimise risks.
- › The large amounts of data on medication usage captured by the electronic medication management systems can be used to direct quality use of medicines and medication safety activities in the future. The information can also be used to assist in patient prioritisation for clinical pharmacists, or for other clinical staff to identify patients needing referral to a pharmacist.
- › Introducing dispensary robots would free up pharmacy technician time to allow them to provide more support to clinical pharmacists. Robots would also assist with inventory management and improve patient safety by reducing the potential for dispensing errors.
- › Closed loop medication management, where a product is barcode checked at all steps on its journey from the pharmacy to the patient, has been demonstrated to have enormous safety benefits. It is probably unachievable for Australia until there are mandated standards for barcodes on pharmaceuticals, but it is under discussion nationally and could well be possible by 2022.
- › Other issues, challenges and opportunities include:

 - › Drug shortages and recalls: There is a global issue with drug shortages and recalls. Australia is particularly vulnerable due to our small stock holdings (compared to Europe or North America). Considerable pharmacy resources at all hospitals are required to manage this issue for example to investigate and source an alternative, inform clinical staff, rewrite guidelines, retrieve and quarantine affected stock.

- › Legislative and industrial issues: The legislation does not allow pharmacy technicians to work unchecked (as happens in many other countries) and there are no plans for formal registration of technicians to address this issue. This limits the extent of support that can be provided by pharmacy technicians. The industrial awards for pharmacists and pharmacy technicians were last updated in 2003. They are both no longer relevant to actual practice, particularly in the case of the pharmacist award. For example, there is no classification for senior local health district (rather than hospital), advanced practice or specialist IT pharmacist positions.
- › Inability to access the Pharmaceutical Benefits Scheme (PBS): NSW is the only state that has not signed up to the [Australian Government Pharmaceutical Reforms program](#), which allows public hospital patients to access the PBS on discharge and as non-admitted patients. As a result, NSW patients receive a three day supply of medication on discharge and must see their GP to obtain a further supply, which can cause significant patient inconvenience. It also impacts on pharmacy workload with the increased time needed to count out small quantities of medications rather than supply whole packs.

52.3 Strategic Directions

Pharmacy Services will focus on:

- › Identifying, implementing and evaluating strategies to deliver a standardised and equitable pharmacy service across the LHD and harnessing opportunities to improve service efficiencies, reduce purchasing costs and invest in research and quality improvement.
- › Reviewing care pathways for patients who are discharged from NSLHD hospitals to the community and streamline discharge processes.
- › Developing a workforce plan to support the increase in clinical pharmacy services offered within NSLHD and to make the most effective use of the skill mix within the workforce.



EACH OF THE ACUTE HOSPITALS AND THE MENTAL HEALTH SERVICE AT MACQUARIE HOSPITAL HAS AN ON-SITE PHARMACY PROVIDING A RANGE OF SERVICES DEPENDING ON THE HOSPITAL CASE MIX, SIZE AND ACUITY.

MEDICAL IMAGING

53.1 Service Description

The Medical Imaging District Services (MIDS) provides diagnostic and interventional services to admitted patients of NSLHD acute care hospitals and non-admitted patients under the specialties of radiology and nuclear medicine.

Role delineation and service modalities across NSLHD are shown in Table 27. Detailed information on Northern Beaches Hospital equipment was not available.

Table 27: Role Delineation and Distribution of Imaging Modalities 2018

Service	Modality	Hornsby	NBH	RNSH	Ryde	Mona Vale	NSLHD
Radiology	Role Delineation	5	5	6	4	-	-
	Angiography	-	-	2	-	-	2
	CT	1 (2)	-	3	1	1	7
	Fluoroscopy	3	-	2	-	-	5
	General X-ray	10	-	15	5	1	37
	Image Intensifier	-	-	1	2	2	6
	Mammography	-	-	2	-	-	2
	MRI	(1)	-	2	-	-	2
	OPG (dental)	(1)	-	1	-	-	1
	Ultrasound	2	-	9	2	1	16
Nuclear Medicine	Role Delineation	5	5	6	4	2	-
	Gamma Camera	1	-	1	-	-	2
	PET-CT	1	-	1	-	-	1
	SPECT-CT	-	-	2	-	-	2

Source: Medical Imaging District Services (Figures in brackets indicate new/additional modalities following redevelopment at Hornsby Hospital)

Radiology

➤ Hornsby and Ryde Hospitals have a contractual relationship with PRP Diagnostic Imaging to provide on-site reporting and to undertake [Tier A interventional procedures](#) during business hours and on-call after hours. The new Medical Imaging Department at Hornsby Hospital is expected to

be completed by the end of 2019 and will involve an increase from one Computed Tomography (CT) to two, one ultrasound to two, a fluoroscopy room, orthopantomography (OPG) and a magnetic resonance imaging (MRI).

- › Mona Vale Hospital supports the urgent care centre, community health and sub-acute services with X-ray, CT and ultrasound during day and evening shifts.
- › A new picture archiving and communication system/radiology information system (PACS/RIS) is expected to be available across NSLHD in 2020. This will provide improved management of medical imagery and enable secure storage and digital transmission of electronic images and reports. NSLHD will continue to provide PACS/RIS and radiation safety support and after hours on-call for interventional neuroradiology procedures for Central Coast LHD.

Nuclear Medicine

- › The role for positron emission tomography (PET) is expanding, particularly for neuroendocrine, prostate and brain cancer diagnosis and treatment. RNS Hospital has provided an increase in therapeutic nuclear medicine procedures, and is a selected site along with St George Hospital for Ministry of Health-funded evaluation of lutate therapy for patients with neuroendocrine tumours who are assessed as suitable for this treatment.
- › Hornsby Hospital provides a limited diagnostic nuclear medicine service with oversight provided by the RNS Hospital Director of Nuclear Medicine. With the redevelopment at the end of 2019, there will be one single-photon emission computed tomography (SPECT-CT) and room for a future gamma camera.

53.2 Issues and Opportunities

Radiology

- › Equipment for a number of modalities at RNS Hospital is due for replacement in 2022. The modalities showing the highest growth are CT, MRI and angiography as part of stroke services along with growth in ED demand for CT. RNS Hospital has redirected some non-admitted patient demand to the private sector; the impact of this trend on patients is not clear. Monitoring of demand will be required to ascertain any further requirements.
- › Ryde Hospital's medical imaging service is in need of renovation; one x-ray room was replaced in April 2019. Any change to Ryde Hospital's service mix will require consideration of the impact on existing capacity and resources.

- › Interventional neuroradiology demand is increasing with resultant pressure on radiology resources. An endoscopic clot retrieval service for stroke patients is provided in a collaborative, alternate day arrangement between RNS and Westmead Hospitals during weekday business hours. To provide a consistent and timely service the Neurosciences Clinical Network is recommending that this service should expand to a 24/7 service.

Nuclear Medicine

- › PET/CT demand has expanded significantly, resulting in long waiting times (up to eight weeks) and the need to extend service hours. A recommended throughput of 13 or 14 PET examinations per day has increased to around 19 during the period of service extension. The addition to the Medicare Benefits Scheme (MBS) of PET for breast cancer has contributed to an increase in admitted patient PET demand.
- › Other options for containing demand involve working with clinicians to reduce unnecessary imaging requests.
- › An increasing proportion of older patients is lengthening average examination time, with half of all patients aged 70 years and over and 23 per cent aged 80 years and over.
- › A large number of services are not reimbursable through Medicare, with additional costs for privately insured patients. Some patients at RNS Hospital are eligible for subsidised care through the use of Cancer Centre trust funds and altruistic donations. Current lutate therapy is funded through the Ministry of Health but future patients will need a source of funding.
- › Workforce pressures have arisen with the increase in treatments and clinical consults, along with the involvement of technologists in administration or as part of the multidisciplinary treatment of cancer patients.
- › Some workforce categories have significant supply shortages, including medical physicists and especially radiochemists.

53.3 Strategic Directions

Medical Imaging Services will focus on:

- › Collaborating with clinical networks and services to manage demand, improve the appropriate selection of medical imaging required for diagnosis and develop agreed pathways to improve imaging response times, cost effectiveness and sustainability for all clinical stakeholders.

- › Developing, implementing and evaluating a model of care for the provision of interventional radiology services across NSLHD that addresses sustainable workforce issues, agreed growth and scope of practice.
- › Exploring opportunities for private sector collaboration in relation to a positron emission tomography/magnetic resonance imaging (PET-MRI) machine on the RNS Hospital campus to improve outcomes for patients with prostate, brain and head and neck cancers along with applications in cardiology, neurology and research.
- › Identifying opportunities for increasing training opportunities for radiochemists and medical physicists.

A NEW AND EXPANDED MEDICAL IMAGING DEPARTMENT WILL OPEN IN HORNSBY HOSPITAL IN 2019/20.



ABORIGINAL HEALTH

54.1 Service Description

The Aboriginal Health Service (AHS) is responsible for coordinating and providing advice on matters relating to improving the health and the social and emotional wellbeing of the Aboriginal and Torres Strait Islander community. The AHS also focuses on cadetships and employment opportunities to strengthen the Aboriginal and Torres Strait Islander health workforce.

The AHS promotes culturally safe and respectful services by providing consultative and advisory services to clinicians caring for Aboriginal and Torres Strait Islander people, delivering Respecting the Difference staff education programs, and developing cultural resources including:

- › Wiyanga: A Guide for Mothers and Families First Australian Birthing Practises in Gaimariagal Country.
- › Death and Dying in Aboriginal and Torres Strait Islander Culture (Sorry Business).
- › Didja Know: A Cultural Information and Communication Guide.

The AHS has developed a [NSLHD Aboriginal Health Services Plan 2017-2022](#) and service delivery plans that identify priority areas and gaps in health provision for Aboriginal and Torres Strait Islander people.

Service delivery plans include:

- › [Aboriginal and Torres Strait Islander Men's Health Plan 2015-2020](#)
- › [Australia's First Peoples Female Lifecycle Health and Wellbeing Plan 2015-2020](#)

The AHS provides health promotion activities and supports community initiatives in collaboration with primary health and other care providers. The AHS coordinates equitable access to health care and provides advocacy and support for individual patients and their families. Health services provided by the AHS include:

- › Chronic care coordination and a 48-hour Clinical Nurse Consultant follow-up service (self-management and clinical advice, and referrals to other services as required) for patients discharged from NSLHD hospitals.
- › Integrated Team Care for patients who have one or more chronic disease, have had frequent hospital admissions and/or emergency presentations, and have difficulty accessing and coordinating the right services needed for their care. The program is Commonwealth-funded and commissioned by the Sydney North Primary Health Network for Aboriginal and Torres Strait Islander people in NSLHD.
- › The Aboriginal Health Clinic (Bungee Bidgel), a collaborative service with the General Practice Training Unit at Hornsby Hospital, provides a range of clinical, chronic disease management, integrated team care, social and emotional wellbeing, mental health, dental and specialist health services to Aboriginal and Torres Strait Islander people in NSLHD and elsewhere.

The Aboriginal and Torres Strait Islander population is younger – 32% are aged 0-17 years compared to 21.9% of the overall population.

The Bungee Bidgel Health Clinic at Hornsby Hospital provides a range of health services to Aboriginal people living in NSLHD and elsewhere.

54.2 Issues and Opportunities

The priorities for the AHS are:

- › Improving the identification of Aboriginal and Torres Strait Islander patients.
- › Providing culturally safe and respectful mainstream services.
- › Increasing the Aboriginal and Torres Strait Islander workforce in NSLHD.

In order to achieve these, the following challenges need to be overcome:

- › Recording of Aboriginality: Accurate identification of Aboriginal patients is one of the essential first steps in improving the health of the Aboriginal population. Although identification of Aboriginal and Torres Strait Islander patients in NSLHD has improved in admitted records, it could improve further, particularly for non-admitted services.
- › Increasing the Aboriginal and Torres Strait Islander workforce: In March 2018, the Aboriginal workforce as a proportion of total workforce, across all salary bands in NSLHD was 0.6 per cent. The NSW target is 1.8 per cent. An Aboriginal and Torres Strait Islander workforce strategy is currently being developed as a joint partnership between the AHS and NSLHD Workforce and Culture directorate.

- › Participation in Respecting the Difference training: Building a culturally competent workforce is fundamental to creating a culturally safe environment for Aboriginal and Torres Strait Islander patients. NSLHD will support all staff to complete the training and education programs and meet the standards and expectations set out in the NSW Health policy *Respecting the Difference: An Aboriginal Cultural Training Framework*.
- › Culturally appropriate care: Aboriginal and Torres Strait Islander patients leaving before completion of treatment or discharge against medical advice are two measures of a hospital's cultural competency and Aboriginal and Torres Strait Islander people's satisfaction with the care they receive. The rate for Aboriginal and Torres Strait Islander patients discharging against medical advice remains greater than that for non-Aboriginal patients in NSLHD services.

54.3 Strategic Directions

The Aboriginal Health Service will focus on implementing and evaluating the impact of the NSLHD Aboriginal and Torres Strait Islander Health Services Plan 2017-2022 and developing an Aboriginal and Torres Strait Islander workforce strategy.



IN 2016, THERE WAS AN ESTIMATED 3,331 ABORIGINAL AND TORRES STRAIT ISLANDER PEOPLE LIVING IN NSLHD, REPRESENTING 0.4% OF THE TOTAL POPULATION.

55

CARER SUPPORT

55.1 Service Description

A carer is anyone who cares for or supports a family member, partner or friend, who has a disability, has a medical condition (including a terminal or chronic illness), has a mental illness, or is frail and aged. Carers assist people to remain living in the community for longer and contribute substantial savings on premature admissions to costly residential care and accommodation options. Carers are not paid community support workers.

The key responsibility of the [NSLHD Carer Support Service](#) is to provide professional support to carers in their interactions with the health system, and to improve the responsiveness of our health services to the needs of carers. The service supports carers from within and outside the LHD in either hospital or community settings. This includes staff with caring responsibilities.

Established in 2004 as part of the NSW Carers Program, the NSLHD Carer Support Service is based within acute hospital settings and collaborates with staff and carers across acute, sub-acute, primary and community health services. The service also networks with community care organisations, local government community development officers and other key organisations to promote the recognition and support of carers.

The NSLHD Carer Support Service is guided by the *NSW Carer Recognition Act (2010)*, the *NSW Carers Charter (2016)* and the *NSW Health Recognition and Support for Carers (Key Directions) 2018-2020*. Under this strategy NSW Health will:

- Inform and guide its employees to recognise and support carers.
- Value and engage with carers as partners in care.
- Support employees who have caring responsibilities.

In NSLHD, an estimated 25,000 carers provide 24/7 care to their loved ones.

55.2 Issues and Opportunities

In 2016, it was estimated that 130,000 or 14 per cent of NSLHD residents were carers with approximately 25,000 providing 24/7 care. With population growth and ageing this number will increase substantially in the coming decades. A national survey of carer's health and wellbeing in 2007 revealed that carers had the lowest level of wellbeing of any demographic group in Australia.

The NSW Health Recognition and Support for Carers (Key Directions) 2018-2020 outlines three key directions which NSLHD is required to address. Some of the challenges in fulfilling these directions include:

- Recording of carer data and status in health care records is underreported in NSLHD. Improving identification ensures services for carers are made more accessible and culturally appropriate.
- Engaging with carers requires staff education and innovative service delivery models.
- Supporting employees who have caring responsibilities requires managers to be aware of their responsibility and equipped to support these staff.

The Carers Support Service recently released the NSLHD Carer Strategy and Action Plan (2018-2023). In addition to addressing the three NSW Health key directions, NSLHD has added a fourth direction focusing on improving services for carers. This will encompass the development of new models of care, developing pathways and communication aids to improve services navigation, strengthening carer engagement in the design of clinical services, and providing better facilities that support and improve the health and wellbeing of carers.

55.3 Strategic Directions

The Carer Support Service will focus on implementing and evaluating the NSLHD Carer Strategy 2018-2023.

56

RESEARCH

56.1 Service Description

High impact research is conducted across NSLHD, both within the Kolling Institute of Medical Research and in NSLHD hospitals and community health centres, with input from clinicians and others across all professions, including medical, nursing and midwifery, allied health, health systems and population health. Since 2017, NSLHD staff have published 1,956 peer reviewed research papers. Trends in health and medical research at NSLHD are reflective of broader research trends, in that the emphasis continues to shift from single and acute illnesses to improving the health and wellbeing of people from birth, throughout the lifespan. The translation of research outcomes into clinical practice is fundamental to delivering the best quality patient care, and has led to more holistic, preventive health care strategies and the implementation of innovations into clinical care.

Medical research is pursued actively across all NSLHD facilities and services, in an extensive range of clinical disciplines.

- › NSLHD has professorial appointments in most specialty fields and many other medical practitioners are engaged with universities for teaching and research. From the time they commence as junior medical officers, doctors are encouraged to become involved in NSLHD research in their areas of interest.
- › Overseen by Professor of Nursing and Midwifery, the NSLHD Nursing and Midwifery Researcher Development Program provides support for research within the NSLHD Nursing and Midwifery Directorate. This has been largely successful to date, with 40 peer reviewed publications in 2018, and 59 active research studies.
- › The Professor of Allied Health, University of Sydney also operates from NSLHD and provides support for research and practice development across the Allied Health Network. The Allied Health Research Committee focuses on building research capacity to support evidence-based practice and research across the allied health disciplines.

Partnerships for research

Research at NSLHD is conducted in collaboration with a number of important partners, including the University of Sydney, UTS, Macquarie University, the Ministry of Health, Sydney Health Partners, Healthscope, industry groups and various other collaborations including the new Northern Beaches Hospital.

- › NSLHD's flagship research institute, the Kolling Institute of Medical Research, is a joint venture between NSLHD and the University of Sydney. The Kolling Institute shares research staff between the two partner organisations. It focuses on medical research with a broad portfolio, reflecting the breadth of NSLHD clinical community. A new Director has recently been appointed and the Institute is developing its own research strategy to complement to NSLHD research strategy. The Kolling Institute's vision is to become a world-leading translational and innovative research centre, informing clinical care to improve patient outcomes. It aims to achieve this vision by building on its existing strengths, growing the volume and range of research undertaken and strengthening its outward and international focus.
- › The Northern Clinical School is a research and education unit of the Sydney Medical School, at the University of Sydney. It operates from RNS Hospital with satellite units at a number of other hospitals within the NSLHD.

- › NSLHD is a foundational partner of Sydney Health Partners together with Western Sydney LHD, Sydney LHD, Sydney Research, the Sydney Children’s Hospital Network (Westmead), the University of Sydney, and nine affiliated medical research institutes. The partnership aims to remove or reduce the barriers to efficient and effective translation of medical research into clinical practice and to increase the scale of research for our population. NSLHD aims to increase collaboration and translation within the group.
- › The Northern Sydney Academic Health Sciences Centre is a partnership between NSLHD, UTS, Macquarie University and the University of Sydney that aims to foster collaborations in preventive health care research. The partner members are committed to supporting research collaboration, translational research and professional development through the partnership.
- › The Sydney North Primary Health Network collaborates with NSLHD with aims to increase the efficiency and effectiveness of medical and health services for patients, particularly those at risk of poor health outcomes, and to improve coordination of care to ensure patients receive the right care in the right place at the right time.
- › The crossover and partnerships between researchers and clinicians within NSLHD and beyond allows for trials of new technologies and systems of care before their final implementation across the LHD. This can lead both to improved health outcomes and long-term cost efficiencies. It also advances the quality and value of health solutions within the LHD, which ensures consumers receive earliest access to innovative health solutions.

56.2 Issues and Opportunities

NSLHD is well placed to continue leading health research into the future. Nonetheless, a number of issues and challenges arise in balancing the required clinical focus with conducting high impact research. To address these, and to build on existing successes, NSLHD is developing a five year research strategy with the aim of developing a coherent and coordinated approach to research. This will provide the opportunity to:

- › Develop a translational plan to enhance the capability of researchers and clinicians in driving change within the clinical settings for practice improvement.

- › Expand the collaborative nature of research by introducing mechanisms and incentives to promote partnerships with industry, philanthropic interests and leading organisations overseas.
- › Increase consumer involvement in the design and analysis of health research.
- › Ensure our workforce is supported to engage with research.
- › Continue to support precision health solutions.

The development of the NSLHD Research Strategy 2019-2024 has been facilitated by the NSLHD Executive and shaped by active and aspiring researchers and clinical leaders, managers and community members. It highlights the importance of engaging our community and our research partners. The research priorities will be embedded in a robust and inclusive research culture, underpinned by strong, effective communication.

The strategy will showcase key achievements, and set out future directions. This will include the identification of a number of initiatives for the LHD to implement, such as the establishment of a clinical trials working group, with the mission of increasing the number of clinical trials and clinical trial participation rates across NSLHD.

The LHD will also expand the role of the Research Office beyond ethics and governance, to assist with available funding and grant writing, statistics, contracts, finance, intellectual property, commercialisation and other research matters. A Research Advisory Committee will be established in 2019 to oversee the implementation of the research strategy.

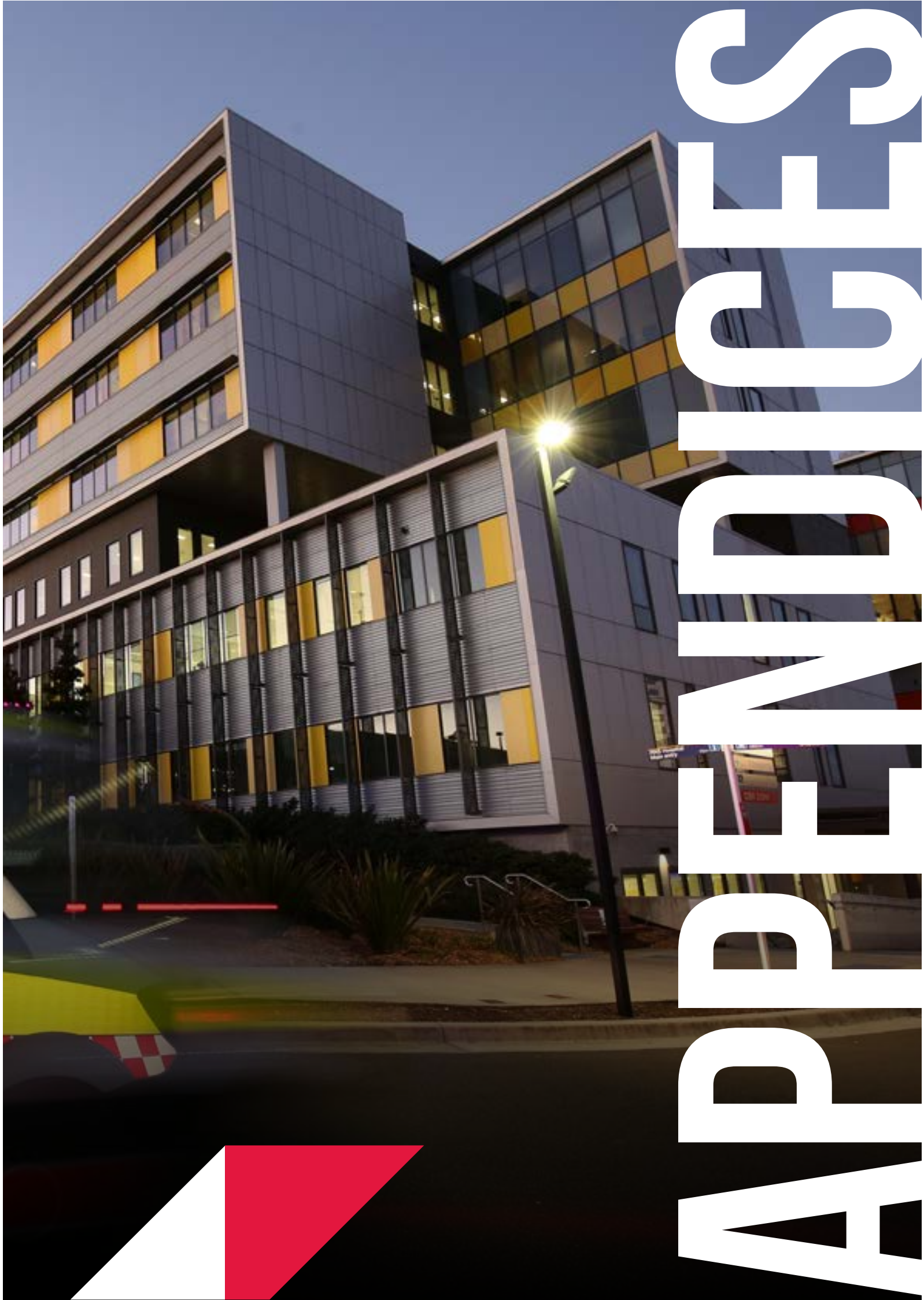
56.3 Strategic Directions

The NSLHD Research Strategy 2019-2024 identifies six priority areas:

- › Growing research across NSLHD.
- › Optimising community engagement.
- › Enhancing research leadership and career development.
- › Building research infrastructure.
- › Enhancing research partnerships.
- › Evaluating the research impact within NSLHD.

NSLHD released a five-year research strategy in 2019 showcasing key achievements and setting out future directions.





SCIENCE CENTRE BUILDING PROJECT APPENDIX



Appendix A: Role Delineation of Health Services

NSLHD Role Delineation of Health Services

The [NSW Health Guide to the Role Delineation of Health Services](#) (3rd Edition, 2018) provides a framework and consistent language for describing services. It describes the minimum support services, workforce and other requirements for clinical services to be delivered safely.

The Guide describes eight core services that are essential to the successful provision of other clinical services. Each service standard has up to six levels in ascending order of complexity; not all services start at level 1. The Guide does not attempt to describe all the services that could be provided by a hospital but rather those that are sufficiently common to be useful exemplars.

- Proposed levels for Ryde Hospital are indicative only based on potential opportunities once the ICU achieves the standards set out for a level 4 service. These proposed levels may change as a result of more detailed planning for the redevelopment of Ryde Hospital.
- “-” indicates “No Planned Service” for Hornsby, RNS and Ryde Hospitals and “not included in service contract” for Northern Beaches Hospital. Access to the services is provided within the integrated network of NSLHD hospitals.

Core Services and Emergency Medicine

Ref	Service	Clinical Network	Hornsby	Northern Beaches	RNSH	Ryde	Ryde Proposed
1	Anaesthesia and Recovery	SA	5	5	6	3	4
2	Operating Suites	SA	5	5	6	3	4
3	Close Observation Unit	ACCM	-	-	-	-	-
4	Intensive Care Services	ACCM	5	5	6	3	4
5	Nuclear Medicine	MIDS	5	5	6	4	4
6	Radiology and Interventional Radiology	MIDS	5	5	6	4	4
7	Pathology	-	5	5	6	5	5
8	Pharmacy	AL	5	5	6	4	4
A	Emergency Medicine	ACCM	4	5	6	3	4

Medicine

Ref	Service	Clinical Network	Hornsby	Northern Beaches	RNSH	Ryde	Ryde Proposed
B1	Cardiology/Interventional Cardiology	CTVH	4	5	6	3	3
B2	Chronic Pain Management	CCM	-	-	6	-	-
B3	Clinical Genetics	MNW	3	-	6	3	3
B4	Dermatology	ACCM	4	4	6	4	4
B6	Endocrinology	CCM	4	5	6	3	4
B7	Gastroenterology	ACCM	4	5	6	3	3
B8	General and Acute Medicine	ACCM	4	5	6	3	4
B9	Geriatric Medicine	RACS	5	5	6	4	4
B10	Haematology	CPC	4	5	6	3	3
B11	Immunology	ACCM	4	5	6	-	-
B12	Infectious Diseases	ACCM	4	5	5	4	4
B13	Neurology	NS	4	5	6	3	3
B14	Oncology - Medical	CPC	4	5	6	3	3
B15	Oncology - Radiation	CPC	-	4	6	-	-
B16	Palliative Care	CPC	2	-	4	2	2
B17	Rehabilitation	RACS	5	-	5	5	5
B18	Renal Medicine	CCM	3	5	6	3	3
B19	Respiratory and Sleep Medicine	CTVH	4	5	6	3	3
B20	Rheumatology	MHPBST	4	5	6	4	4
B21	Sexual Assault	PaCH	1	-	4	1	1
B22	Sexual Health	PaCH	1	-	5	1	1

Surgery

Ref	Service	Clinical Network	Hornsby	Northern Beaches	RNSH	Ryde	Ryde Proposed
C1	Burns	MHPBST	4	4	6	2	2
C2	Cardiothoracic Surgery	CTVH	-	-	6	-	-
C3	Ear, Nose and Throat	SA	5	5	6	3	3
C4	General Surgery	SA	5	5	6	3	4
C5	Gynaecology	MNW	4	5	6	3	3
C6	Neurosurgery	NS	-	-	6	-	-
C7	Ophthalmology	SA	1	1	6	-	-
C8	Oral Health	PaCH	4	-	4	-	-
C9	Orthopaedic Surgery	MHPBST	5	5	6	3	4
C10	Plastic Surgery	MHPBST	-	5	6	-	-
C11	Urology	SA	5	5	6	2	2
C12	Vascular Surgery	CTVH	4	5	6	-	-

Child and Family Health

Ref	Service	Clinical Network	Hornsby	Northern Beaches	RNSH	Ryde	Ryde Proposed
D1	Child and Family Health	CYFH	4	-	4	4	4
D2	Child Protection Services	CYFH	3	-	4	1	1
D3	Maternity	MNW	4	5	6	2	2
D4	Neonatal	MNW	3	4	5	1	1
D5	Paediatric Medicine	CYFH	4	4	4	2	2
D6	Surgery for Children	SA	3	4	4	2	2
D7	Youth Health	CYFH	3	-	3	3	3

Aboriginal Health and Community Health

Ref	Service	Clinical Network	Hornsby	Northern Beaches	RNSH	Ryde	Ryde Proposed
F	Aboriginal Health	-	6	-	6	6	6
G	Community Health	PaCH	4	-	4	4	4

Mental Health Services

Ref	Service	Clinical Network	Hornsby	Northern Beaches	RNSH	Ryde	Ryde Proposed	Macquarie	Greenwich
E1	Adult MH	MHDA	5	5	6	2	2	4	-
E2	Child and Youth MH	MHDA	5	3	4	4	4	3	-
E3	Older Persons MH	MHDA	4	5	5	2	2	3	5
B5	Drug and Alcohol	MHDA	3	-	6	2	2	-	-

Stand-alone Sub-acute Services and Affiliated Health Organisations

Ref	Service		Greenwich	Neringah	Royal Rehab	Mona Vale	MVH Proposed
6	Radiology and Interventional Radiology	MIDS	-	-	2	2	2
7	Pathology	-	-	-	1	3	3
8	Pharmacy	AL	2	2	3	3	3
B2	Chronic Pain Management	CCM	6	-	-	-	-
B8	General and Acute Medicine	ACCM	2	2	-	2	2
B16	Palliative Care	CPC	5	5	-	3	4
B17	Rehabilitation	RACS	-	-	6	4	4

Appendix B: Current and Future Bed Profile

Current NSLHD physical (“built”) beds by type and other key resources as at June 2018

Part A	Hornsby	Manly	Mona Vale	RNSH	Ryde	NSLHD
Acute Adult	169	106	118	555	130	1,078
ED Short Stay	12	10	10	14	4	50
MAU	16	-	8	28	24	76
General Medicine/Surgery	128	74	82	429	73	786
ICU	13	10	6	58	15	102
Surgical Short Stay	-	12	12	26	14	64
Women and Children	36	20	37	105	-	198
Paediatric	9	-	20	24	-	53
Paediatric Short Stay	3	-	-	7	-	10
Maternity	16	17	14	41	-	88
Special Care Nursery	8	3	3	9	-	23
NICU	-	-	-	24	-	24
Other Resource						
Operating Theatres	8	3	2	20	3	36
Endoscopy Rooms	2	1	1	4	-	8
Maternity Birthing Rooms	4	4	3	11	3	25
Dialysis Chairs						
In Centre	-	-	-	13	-	13
Training	-	-	-	9	-	9
Satellite	-	-	6	25	-	31
Mental Health Drug and Alcohol	63	36	-	53	-	152
Sub- and Non-Acute	40	-	56	-	64	160
Total	308	162	211	713	194	1,588

Part B	Hornsby	Northern Beaches	Mona Vale	RNSH	Ryde	Macquarie	Greenwich	NSLHD
Mental Health/ Drug and Alcohol	63	36	-	53	-	210	20	382
CYMHS Acute	12	-	-	-	-	-	-	12
PECC	4	6	-	6	-	-	-	16
MHICU	12	-	-	-	-	-	-	12
Adult Acute	35	20	-	32	-	14	-	101
OPMH Acute	-	10	-	-	-	-	20	30
Detox	-	-	-	15	-	-	-	15
CYMHS Other (Coral Tree)	-	-	-	-	-	15	-	15
Adult Other	-	-	-	-	-	151	-	151
OPMH Other	-	-	-	-	-	30	-	30

Part C	Hornsby	Manly	Mona Vale	RNSH	Ryde	Greenwich	Neringah	Royal Rehab	NSLHD
Sub and Non Acute	40	-	56	-	64	58 (36)	19	60 (24)	297 (60)
Rehab - Spinal	-	-	-	-	-	-	-	20	20
Rehab - Brain Injury	-	-	-	-	-	-	-	16	16
Rehab -General	40	-	56	-	64	(36)	-	(24)	220 (60)
Palliative Care	-	-	-	-	-	22	19	-	41

Source: NSLHD Patient Flow Portal Bed Board 2018 and advice from NSLHD clinicians, managers and hospital websites.

Note1: Graythwaite supports the specialist burns rehabilitation service.

Note 2: Greenwich has 36 privately funded rehabilitation beds and Royal Rehab has 24 privately funded rehabilitation beds.

Future NSLHD physical (“built”) beds by type and other key resources by 2021

Part A	Hornsby	Northern Beaches	Mona Vale	RNSH	Ryde**	NSLHD
Acute Adult	220	351 (161)	-	555	130	1,256 (161)
ED Short Stay	12	-	-	14	4	30
MAU	28	-	-	28	24	80
General Medicine/Surgery	140	291 (135)	-	429	73	933 (135)
ICU	12	20 (10)	-	58	15	105 (10)
Surgical Short Stay	28	40 (16)	-	26	14	108 (16)
Women and Children	40	76 (26)	-	105	-	221 (26)
Paediatric	10	18	-	24	-	52
Paediatric Short Stay	6	6	-	7	-	19
Maternity	16	40 (20)	-	41	-	97 (20)
Special Care Nursery	8	12(6)	-	9	-	29 (6)
NICU	-	-	-	24	-	24
Other Resources						
Operating Theatres	8	14	-	20	3	45
Endoscopy Rooms	2	4	-	4	-	10
Maternity Birthing Rooms	4	10(5)	-	11	3	28 (5)
Dialysis Chairs						
In Centre	-	12	-	13	-	25
Training	-	-	-	9	-	9
Satellite	10	-	-	25	-	35
Mental Health/Drug and Alcohol	65	61 (20)	-	53	-	179 (20)
Sub and Non Acute	56	-	76	-	64	196
Total	381	488 (207)	76	713	194	1,852 (207)

Part B	Hornsby	Northern Beaches	Mona Vale	RNSH	Ryde	Macquarie	Greenwich	NSLHD
Mental Health/Drug and Alcohol	65	61 (20)	-	53	-	210	20	409 (20)
CYMHS Acute	12	-	-	-	-	-	-	12
PECC	6	6	-	6	-	-	-	18
MHICU	12	-	-	-	-	-	-	12
Adult Acute	35	40 (20)	-	32	-	14	-	121 (20)
OPMH Acute	-	15	-	-	-	-	20	35
Detox	-	-	-	15	-	-	-	15
CYMHS Other (Coral Tree)	-	-	-	-	-	15	-	15
Adult Other	-	-	-	-	-	151	-	151
OPMH Other	-	-	-	-	-	30	-	30

Part C	Hornsby	Northern Beaches	Mona Vale	RNSH	Ryde	Greenwich	Neringah	Royal Rehab	NSLHD
Sub and Non Acute	56	-	76	-	64	58 (36)	19	60 (24)	333 (60)
Rehab - Spinal	-	-	-	-	-	-	-	20	20
Rehab - Brain Injury	-	-	-	-	-	-	-	16	16
Rehab - General	56	-	56	-	64	(36)	-	(24)	236 (60)
GEM	-	-	10	-	-	-	-	-	10
Palliative Care	-	-	10	-	-	22	19	-	51

Source: NSLHD Patient Flow Portal Bed Board 2018, advice from NSLHD clinicians, managers and hospital websites.

Northern Beaches Hospital information extracted from <http://intranet.nslhd.health.nsw.gov.au/Documents/20190321%20NSLHD-NBH%20Key%20Service%20Linkage%20Directory.pdf>

Note 1: Beds in brackets are identified as private beds. Northern Beaches Hospital have identified 204 private acute beds though there are additional shared beds.

Note 2: Greenwich has 36 and Royal Rehab has 24 rehabilitation beds which are privately funded

** It is anticipated that bed numbers at Ryde Hospital will change as a result of clinical services planning for the redevelopment; planning is not yet sufficiently advanced to warrant the inclusion of those changes at this time.

Appendix C: Acute Admitted Activity

Acute Admitted Patient Episodes By Facility and Enhanced Service Related Group, NSLHD, 2017/18

Episodes include unqualified neonates, renal dialysis and mental health

Service Related Group (SRG)	Enhanced SRG	Hornsby	Manly	Mona Vale	RNSH	Ryde	NSLHD
11 Cardiology Total		1,477	1,044	1,431	4,239	1,521	9,712
	111 Chest Pain	643	301	462	1,619	725	3,750
	112 Unstable Angina	29	28	26	38	25	146
	113 Heart Failure and Shock	172	110	153	373	178	986
	114 Non-Major Arrhythmia and Conduction Disorders	192	219	378	789	181	1,759
	115 AMI W/O Invasive Cardiac Inves Proc	78	91	79	156	70	474
	116 Syncope and Collapse	230	170	225	586	180	1,391
	119 Other Cardiology	133	125	108	678	162	1,206
12 Interventional Cardiology Total		60	23	28	1,587	46	1,744
	121 Invasive Cardiac Inves Proc	34	15	12	564	24	649
	122 Percutaneous Coronary Angioplasty	12	7	16	599	21	655
	129 Other Interventional Cardiology	14	1	-	424	1	440
13 Dermatology Total		87	29	52	294	43	505
	131 Dermatology	87	29	52	294	43	505
14 Endocrinology Total		117	62	82	417	87	765
	141 Diabetes	92	54	64	170	64	444
	149 Other Endocrinology	25	8	18	247	23	321
15 Gastroenterology Total		1,720	944	1,895	3,310	1,154	9,023
	151 Oesophagitis, Gastroent and Misc Digestive System Disorders	454	140	237	948	213	1,992
	152 Gastroscopy	437	257	324	141	312	1,471
	153 ERCP	11	6	9	276	10	312
	159 Other Gastroenterology	818	541	1,325	1,945	619	5,248
16 Diagnostic GI Endoscopy Total		994	654	792	427	666	3,533
	161 Other Colonoscopy	727	503	579	153	546	2,508
	162 Other Gastrsocopy	267	151	213	274	120	1,025
17 Haematology Total		53	31	46	655	26	811
	172 Lymphoma and Non-Acute Leukaemia	14	13	13	276	5	321
	173 Acute Leukaemia	1	1	-	77	1	80
	174 Bone Marrow Transplant	-	-	-	76	-	76
	179 Other Haematology	38	17	33	226	20	334
18 Immunology and Infections Total		225	229	310	717	85	1,566
	181 Immunology	75	166	206	247	23	717
	184 Infectious Diseases	150	63	104	470	62	849
19 Oncology Total		79	59	101	694	36	969
	191 Respiratory Neoplasms	26	17	32	133	7	215
	192 Digestive Malignancy	13	8	19	102	10	152
	199 Other Oncology	40	34	50	459	19	602
20 Chemotherapy Total		-	-	-	31	-	31
	201 Chemotherapy	-	-	-	31	-	31

Service Related Group (SRG)	Enhanced SRG	Hornsby	Manly	Mona Vale	RNSH	Ryde	NSLHD
21 Neurology Total		863	661	677	3,261	526	5,988
	211 Stroke	109	173	70	665	70	1,087
	212 TIA	64	84	43	148	47	386
	213 Seizures	115	64	104	434	76	793
	219 Other Neurology	575	340	460	2,014	333	3,722
22 Renal Medicine Total		140	91	129	659	111	1,130
	221 Renal Failure	44	26	41	198	46	355
	229 Other Renal Medicine	96	65	88	461	65	775
23 Renal Dialysis Total		-	-	3,708	20,292	-	24,000
	231 Renal Dialysis	-	-	3,708	20,292	-	24,000
24 Respiratory Medicine Total		1,550	833	1,411	3,621	907	8,322
	241 Bronchitis and Asthma	226	39	181	427	58	931
	242 Chronic Obstructive Airways Disease	187	134	182	362	230	1,095
	243 Respiratory Infections/Inflammations	493	348	456	1,003	357	2,657
	244 Bronchoscopy	38	63	-	146	24	271
	249 Other Respiratory Medicine	606	249	592	1,683	238	3,368
25 Rheumatology Total		126	60	69	266	55	576
	251 Rheumatology	126	60	69	266	55	576
26 Pain Management Total		173	95	179	627	110	1,184
	261 Pain Management	173	95	179	627	110	1,184
27 Non Subspecialty Medicine Total		1,496	890	1,372	3,967	934	8,659
	271 Kidney and Urinary Tract Infections	256	181	277	736	206	1,656
	272 Cellulitis	396	225	349	677	167	1,814
	275 Injuries - Non-surgical	131	62	115	241	112	661
	276 Dementia and Delirium	177	99	90	277	86	729
	277 Septicaemia	126	101	160	351	119	857
	278 Surgical Follow Up	3	2	12	7	11	35
	279 Other Non Subspecialty Medicine	407	220	369	1,678	233	2,907
41 Breast Surgery Total		102	44	11	227	16	400
	411 Breast Surgery	102	44	11	227	16	400
42 Cardiothoracic Surgery Total		2	-	-	551	-	553
	421 Coronary Bypass	-	-	-	169	-	169
	429 Other Cardiothoracic Surgery	2	-	-	382	-	384
43 Colorectal Surgery Total		210	128	143	385	268	1,134
	432 Anal, Stomal and Pilonidal Procedures	146	101	86	180	205	718
	439 Other Colorectal Surgery	64	27	57	205	63	416
44 Upper GIT Surgery Total		298	162	257	1,012	383	2,112
	441 Cholecystectomy	158	73	109	111	188	639
	442 Disorders of Biliary Tract and Pancreas	104	77	119	433	163	896
	449 Other Upper GIT Surgery	36	12	29	468	32	577
46 Neurosurgery Total		354	196	281	1,969	237	3,037
	461 Head Injuries	135	75	120	461	100	891
	462 Craniotomy	-	-	-	326	-	326
	463 Neurosurgery - Non-procedural	216	118	155	676	133	1,298
	469 Other Neurosurgery	3	3	6	506	4	522
47 Dentistry Total		65	-	3	44	27	139
	471 Dental Extractions and Restorations	65	-	3	44	27	139

Appendix C: Acute Admitted Activity

Service Related Group (SRG)	Enhanced SRG	Hornsby	Manly	Mona Vale	RNSH	Ryde	NSLHD
48 ENT & Head and Neck Total		780	186	726	1,931	323	3,946
	481 Tonsillectomy or Adenoidectomy	117	7	124	137	30	415
	482 Myringotomy W Tube Insertion	28	-	30	21	5	84
	483 Non-procedural ENT	434	158	440	1,199	191	2,422
	484 Head and Neck Surgery	9	1	6	70	5	91
	489 Other Procedural ENT	192	20	126	504	92	934
49 Orthopaedics Total		2,219	1,274	1,749	4,913	1,115	11,270
	491 Injuries to Limbs - Medical	509	288	517	1,118	231	2,663
	492 Wrist and Hand Procedures incl Carpal Tunnel	362	301	125	965	79	1,832
	494 Knee Procedures	120	59	110	147	69	505
	495 Other Orthopaedics - Surgical	802	403	715	2,066	521	4,507
	496 Hip Replacement/Revision	145	92	108	159	91	595
	497 Knee Replacement/Revision	110	34	50	67	59	320
	499 Other Orthopaedics - Non-surgical	171	97	124	391	65	848
50 Ophthalmology Total		35	33	39	1,103	25	1,235
	502 Non-procedural Ophthalmology	35	30	38	241	25	369
	503 Glaucoma and Lens Procedures	-	-	-	621	-	621
	509 Other Eye Procedures	-	3	1	241	-	245
51 Plastic and Reconstructive Surgery Total		172	429	111	1,242	72	2,026
	511 Microvascular Tissue Transfer or Skin Grafts	53	153	24	409	17	656
	512 Skin, Subcutaneous Tissue and Breast Procedures	80	210	52	293	42	677
	513 Maxillo-Facial Surgery	34	40	23	198	10	305
	519 Other Plastic and Reconstructive Surgery	5	26	12	342	3	388
52 Urology Total		774	217	407	1,963	301	3,662
	521 Cystourethroscopy	118	-	39	125	23	305
	522 Urinary Stones and Obstruction	204	115	185	593	178	1,275
	523 TURP	52	-	-	57	-	109
	524 Other Non-procedural Urology	172	96	133	605	73	1,079
	529 Other Urological Procedures	228	6	50	583	27	894
53 Vascular Surgery Total		159	88	65	677	57	1,046
	531 Vein Ligation and Stripping	6	4	2	32	16	60
	532 Non-procedural Vascular Surgery incl Skin Ulcers	53	30	43	162	35	323
	539 Other Vascular Surgery Procedures	100	54	20	483	6	663
54 Non Subspecialty Surgery Total		1,781	1,013	1,538	4,203	1,015	9,550
	541 Injuries	406	303	524	1,267	308	2,808
	542 Abdominal Pain	417	174	332	753	203	1,879
	543 Appendicectomy	180	124	148	420	76	948
	544 Digestive System Diagnoses incl GI Obstruction	81	46	78	197	61	463
	545 Inguinal and Femoral Hernia Procedures Age>0	145	100	118	107	132	602
	546 Post-operative Infections and Sequelae of Treatment	127	53	115	405	50	750
	547 Thyroid Procedures	67	31	-	91	-	189
	549 Other Non-specialty Surgery	358	182	223	963	185	1,911

Service Related Group (SRG)	Enhanced SRG	Hornsby	Manly	Mona Vale	RNSH	Ryde	NSLHD
61 Transplantation Total		-	-	-	44	-	44
	611 Transplantation	-	-	-	44	-	44
62 Extensive Burns Total		3	-	2	111	1	117
	621 Extensive Burns	3	-	2	111	1	117
63 Tracheostomy Total		26	14	5	229	-	274
	631 Tracheostomy or Ventilation >95 hours	26	14	5	229	-	274
71 Gynaecology Total		712	401	545	1,385	271	3,314
	711 Abortion W DandC, Aspiration Curettage or Hysterotomy	97	73	75	175	2	422
	712 Endoscopic Procedures for Female Reproductive System	27	14	25	47	11	124
	713 Conisation, Vagina, Cervix and Vulva Procedures	99	43	57	180	33	412
	714 Diagnostic Curettage or Diagnostic Hysteroscopy	106	68	102	123	70	469
	715 Hysterectomy	28	15	14	72	7	136
	717 Non-procedural Gynaecology	170	102	129	417	50	868
	719 Other Gynaecological Surgery	185	86	143	371	98	883
72 Obstetrics Total		1,542	1,088	843	3,653	133	7,259
	721 Ante-natal Admission	252	162	126	674	38	1,252
	722 Vaginal Delivery	916	590	464	1,770	87	3,827
	723 Caesarean Delivery	338	269	218	929	-	1,754
	724 Post-natal Admission	36	67	35	280	8	426
73 Qualified Neonate Total		371	234	242	511	-	1,358
	731 Qualified Neonate	371	234	242	511	-	1,358
74 Unqualified Neonate Total		1,054	675	563	2,319	87	4,698
	741 Unqualified Neonate	1,054	675	563	2,319	87	4,698
75 Perinatology Total		-	-	-	314	-	314
	751 Perinatology	-	-	-	314	-	314
81 Drug and Alcohol Total		164	148	139	949	94	1,494
	811 Drug and Alcohol	164	148	139	949	94	1,494
82 Psychiatry - Acute Total		1,609	1,117	22	1,885	33	4,666
	823 Mental Health Treatment, Sameday (excl ECT)	131	149	8	145	15	448
	829 Other Psychiatry	1,478	968	14	1,740	18	4,218
87 Maintenance Total		6	3	10	12	1	32
	871 Maintenance	6	3	10	12	1	32
99 Unallocated Total		13	9	3	122	5	152
	999 Unallocated	13	9	3	122	5	152
NSLHD		21,611	13,164	19,986	76,818	10,771	142,350

Appendix D: Glossary of Terms and Abbreviations

Clinical Networks

Abbreviation	Definition
MNWH	Maternal Neonatal and Women's Health (MN)
CYFH	Child Youth and Family Health (CF)
ACCM	Acute and Critical Care Medicine (AC)
CCM	Chronic and Complex Medicine (CC)
SA	Surgery and Anaesthesia (SA)
CTVH	Cardiothoracic and Vascular Health (CV)
MHPBST	Musculoskeletal Health, Plastics/Burns, Spinal and Trauma (MS)
Neuro	Neurosciences (NS)
CPC	Cancer and Palliative Care (CP)
RAC	Rehabilitation and Aged Care (RA)

Terms and Abbreviations

Abbreviation	Definition
ABF	Activity Based Funding
ACAT	Aged Care Assessment Team
ACE	Acute Care of the Elderly
ACI	Agency for Clinical Innovation
AHS	Aboriginal Health Service
AL	Allied Health
APAC	Acute Post-Acute Care
ARRT	Aged Care Rapid Response Team
ASET	Aged Services in Emergency Teams
BRACE	Beaches Rapid Access Care of the Elderly
CALD	Culturally and Linguistically Diverse (communities)
CDCRS	Chronic Disease Community Rehabilitation Service
CEC	Clinical Excellence Commission
CHSP	Commonwealth Home Support Program
CKD	Chronic kidney disease
COPD	Chronic Obstructive Pulmonary Disease
CSP	Clinical Services Plan
CT	Computed Tomography
CYMHS	Child and Youth Mental Health Service

Abbreviation	Definition
DPE	Department of Planning and Environment
DSA	Digital subtraction angiography
ECR	Endovascular clot retrieval
ED	Emergency Department (of a hospital)
EDSSU	Emergency Department short stay units
EEG	Electroencephalography
eMR	Electronic Medical Record
ENT	Ear nose and throat
EPS	Electrophysiology Study
ERCP	Endoscopic Retrograde Colangio-Pancreatography
ETP	Emergency Treatment Performance Target
+FOBT	Positive Faecal Occult Blood Test
FTE	Full Time Equivalent
GEM	Geriatric Evaluation and Management
GP	General Practitioner
GRACE	Geriatric Rapid Acute Care Evaluation
HCC	Health Contact Centre
HDU	High Dependency Unit
HETI	Health Education and Training Institute
HHK	Hornsby Healthy Kids
HITH	Hospital in the Home
HIV	Human Immunodeficiency Virus
HK	Hornsby Ku-ring-gai
IDAT	Involuntary Drug and Alcohol Treatment
INR	Interventional Neuroradiology
LBVC	Leading Better Value Care
LGA	Local Government Area
LHD	Local Health District
LNS	Lower North Shore
MACARF	Management of cardiac function
MAG	Ministerially Approved Grants
MAU	Medical Assessment Unit
MBS	Medicare Benefits Scheme
MDT	Multidisciplinary team

Abbreviation	Definition
MERIT	Magistrates Early Referral into Treatment
MH	Mental Health
MHDA	Mental Health and Drug and Alcohol
MIDS	Medical Imaging District Services
MMV	Manly/Mona Vale (Hospitals)
MoH	Ministry of Health
MOSAIQ	Medical Oncology Information System
MRI	Magnetic Resonance Imaging
NAFLD	Non-alcoholic fatty liver disease
NBH	Northern Beaches Hospital
NDIS	National Disability Insurance Scheme
NGO	Non-Government Organisations
NHMRC	National Health and Medical Research Council
NICU	Neonatal Intensive Care Unit
NSHNS	Northern Sydney Home Nursing Services
NSLHD	Northern Sydney Local Health District
NSW	New South Wales
ON ALOS	Overnight average length of stay
OOHC	Out of Home Care
OPG	Orthopantomography
ORP	Osteoporosis Re-fracture Prevention Service
OTP	Opioid Treatment Program
Pach	Primary and Community Health
PBS	Pharmaceutical Benefits Scheme
PCLI	Pathways to Community Living Initiative
PECC	Psychiatric Emergency Care Centre
PET	Positron Emission Tomography
PRMs	Patient reported measures
PROMs/ PREMs	Patient Reported Outcome Measures / Patient Reported Experience Measures
RACF	Residential aged care facilities
RAS	Regional Assessment Service
RBCO	Reporting Better Cancer Outcomes (program)
RHH	Ryde Hunters Hill
RNS	Royal North Shore (Hospital)

Abbreviation	Definition
SASH	Safe and Supported at Home (program)
SCI	Spinal Cord Injury
SERT	Surgical Education, Research and Training (institute at RNS Hospital)
SNPHN	Sydney North Primary Health Network
SPECT-CT	Single-photon emission computed tomography
TACP	Transitional Aged Care Program
TAFE	Technical and Further Education (institutions)
TAVI	Trans-catheter Aortic Valve Implantation
TB	Tuberculosis
TIA	Transient Ischaemic Attack
TMNN	Tiered Maternity and Neonatal Network
UCC	Urgent Care Centre
VAN	Violence, Abuse and Neglect (service)
VMO	Visiting Medical Officer

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Appendix F: Aboriginal Health Impact Statement

Aboriginal Health Impact Statement

Title of the initiative:	NSLHD Clinical Services Plan - A three year outlook for clinical services in NSLHD hospitals to 2021/22
Organisation/Department/Centre:	NSLHD Health Services Planning Unit
Contact name and title:	Brenda Scully, Senior Health Services Planner and CSP Project Manager David Miles, Manager Health Services Planning Unit and Project Owner Deb Willcox, Chief Executive and Project Sponsor
Contact phone number:	02 9462 9969 (Brenda Scully)
Date completed:	29/05/2019

Summary

The revised Clinical Services Plan for Northern Sydney Local Health District (NSLHD) will set out the strategic issues and directions for clinical services across the LHD following the opening of the new Northern Beaches Hospital in October 2018. The plan is from 2019-2022 and beyond. In particular the plan will focus on:

- › The role of each hospital and the delineation of individual health services
- › The location and configuration of clinical services to make best use of available capacity, capabilities and resources
- › Priorities for the organisation; distribution, development and investment of clinical services to improve the accessibility, quality, safety and appropriateness of care; and to improve and sustain performance and service efficiency.

The plan was informed by consultation with the Clinical Networks, hospitals, consumers and other services in the LHD, including the NSLHD Aboriginal Health Service. While the Aboriginal and Torres Strait Islander population of the LHD is relatively small (3,327 people at the 2016 census, or 0.4% of the total NSLHD population), health outcomes are poorer than for the population as a whole. Planning for the development of health services will need to focus on meeting the specific health needs of the Aboriginal and Torres Strait Islander population who live and/or access health services in NSLHD.

1. The health context for Aboriginal people

At the 2016 Census the resident population of Aboriginal and Torres Strait Islander people in NSLHD was estimated at 3,236, representing 0.4% of the total NSLHD population. An estimated 41% reside in the Northern Beaches area; 30% in the North Shore Ryde area; and 29% in Hornsby Ku-ring-gai area. Although the resident Aboriginal and Torres Strait Islander is small in comparison to other LHDs, there is a larger transient population who study and work in the area including at Macquarie University and the various boarding schools in the LHD.

The socioeconomic status of the local Aboriginal population on a number of measures tends to be poorer than the average of the NSLHD total population, but better than the total NSW Aboriginal population.

Compared to non-Aboriginal people in NSLHD, Aboriginal people are:

- › More likely to smoke during pregnancy
- › Less likely to be admitted to hospital but are more likely to be admitted for potentially preventable causes
- › More likely to be hospitalised for diabetes-related causes
- › More likely to be discharged against medical advice.

Many other health factors cannot be accurately compared within NSLHD due to small numbers. However, it is noted at a statewide level:

- Aboriginal and Torres Strait Islander people with diabetes have a fourteen times higher mortality rate compared to non-Aboriginal and Torres Strait Islander people
- Aboriginal and Torres Strait Islander people with kidney disease have an eight times higher mortality rate compared to non-Aboriginal and Torres Strait Islander people
- Aboriginal and Torres Strait Islander people with heart disease have a five times higher mortality rate compared to non-Aboriginal and Torres Strait Islander people. Coronary heart disease and stroke were the dominant forms of cardiovascular disease and death amongst Aboriginal and Torres Strait Islander people
- The rates of Chronic Obstructive Pulmonary Disease (COPD) are 3.9 times that in non-Aboriginal and Torres Strait Islander communities

Some Aboriginal and Torres Strait Islander residents living in the area are from the Stolen Generation and are likely to experience unresolved loss, trauma and grief, with an ongoing effect on their own children and families.

2. The potential impact of the policy, program or strategy on Aboriginal people including approaches to mitigate any potential undesired effects

The NSLHD Clinical Services Plan 2019-2022 identifies the priorities and strategic directions of the Clinical Networks, services (including the NSLHD Aboriginal Health Service) and hospitals in the LHD. All these will have a positive impact on the health journey of the population who live and access services in NSLHD public hospitals and community health services, including Aboriginal and Torres Strait Islander people.

The plan includes a chapter on the Aboriginal Health Service, reference to Aboriginal and Torres Strait Islander residents in the demography chapter, and several specific recommendations in the areas of child and family health and primary and community care to Indigenous residents, including attention to breastfeeding, breast cancer screening and oral health.

In this context there are not considered to be any disadvantages in this project for Aboriginal and Torres Strait Islander people accessing health services in NSLHD.

Monitoring and evaluation of the initiatives in the plan will consider the impact on all people who access services in NSLHD, which includes recording Aboriginal and Torres Strait Islander status of patients, so that culturally appropriate services can be provided.

3. Engagement with Aboriginal people

The NSLHD Clinical Services Plan 2019-2022 was informed by consultations with the Clinical Networks, hospitals, consumers and other services in the LHD, including the NSLHD Aboriginal Health Service.

The Health Services Planning Unit maintains a close and regular relationship with the Director and staff of the Aboriginal Health Service. Many of the Clinical Networks have Aboriginal Health representation embedded in their committee and working group structures.

Approved by:	Adjunct Associate Professor Peter Shine
Date:	30th May 2019
Title/position:	Director, Aboriginal Health Service
Organisation/Department/Centre:	Northern Sydney Local Health District
Contact phone number:	02 9462 9017
Signature:	
<p>By signing this document you agree that the initiative satisfactorily meets the three key components of the Aboriginal Health Impact Statement.</p> <p>Note: Must be approved by the relevant Executive Director or Director of the local health district, pillar organisation or Centre within the NSW Ministry of Health</p>	

Appendix G: Bibliography

Internet hyperlinks to reference texts have been embedded into the electronic version of this CSP to facilitate reader access to source information. This bibliography has been created so that readers accessing a printed version can readily find the reference texts. Details of policies and strategic documents are listed below under the relevant CSP chapter.

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