



CANBERRA HEALTH SERVICES

NORTHSIDE HOSPITAL

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Clinical Services Plan - Final
2024 - 2041



ACT
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Document Control and Version History

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Executive Summary

The Northside Hospital Clinical Services Plan (CSP) articulates the vision for the North Canberra Hospital /Northside Hospital for the provision of contemporary adult and paediatric healthcare for the residents of the ACT, primarily those located in the northern regions¹ of the Territory. The CSP builds upon the developments made possible through the integration of North Canberra Hospital (NCH) into the Canberra Health Services (CHS) with future focuses on networking at the service level. The CSP addresses the health needs of the diverse and rapidly growing and ageing population of the northern areas of ACT.

The CSP has been developed within the context of government priorities at a Commonwealth and Territory level. The CSP is also consistent with the ACT Health Services Plan and CHS Strategic Plan 2024-2029² which references the planning and commissioning of the new Northside Hospital, and the full integration of NCH and Clare Holland House (CHH) into the CHS Network. Thus, bringing all ACT public hospitals and health services into one integrated public health system, growing health and medical research, shifting care into the community with expansion of community based and primary care models, and influencing the population health outcomes.

Service planning principles determine and guide the development of CSPs and provide a framework to achieve the vision and objectives of CHS. The following principles were endorsed:

- **Person-Centred and Inclusive Services:** Ensure all services prioritise consumer and carer consultation to promote shared decision-making, equity, and ease of access, with a focus on culturally safe and inclusive care for all populations.
- **Sustainable and Efficient Service Delivery:** Plan and deliver services informed by community need, making the best use of available resources to ensure long-term sustainability.
- **Evidence-Based, Timely, and Equitable Access:** Deliver the right service, at the right time, in the right place, by the right team guided by evidence and aimed at improving health outcomes, especially for priority populations.
- **High-Quality and Safe Care:** Provide care that meets the highest standards of safety, quality, and efficiency, ensuring a positive experience for both consumers and providers, while continually improving effectiveness.
- **Workforce Development and Innovation:** Foster a culture that attracts, develops, and retains skilled healthcare professionals through a supportive and respectful work environment, with a commitment to research, innovation, and continuous improvement in health outcomes.

Table A shows a high-level current activity summary for NCH. This is further explored and articulated in the subsequent sections of the CSP. Overall, NCH activity and length of stay has increased since 2018/19. Factors influencing this growth include overall increased demand for services across the region consistent with population growth, increasing volumes of non-acute patients staying longer and changing health needs of people with increasing comorbidities requiring tertiary services.

¹ For the purpose of this CSP, reference to 'Northside' and 'ACT North' are used interchangeably and refers to the Belconnen, Gungahlin, Molonglo and North Canberra SA3 regions collectively. Refer to Section 7 for further details on the catchment profile.

² Canberra Health Services. 2024. Canberra Health Services Strategic Plan 2024-2029. Accessed from: https://www.canberrahealthservices.act.gov.au/data/assets/file/0005/1933178/CHS_Strategic-Plan-2024-2029_DIGITAL-FA.pdf

Hospital/Facility	Values	2018-19	2019-20	2020-21	2021-22	2022-23	Variance	Growth 2019-2023
NCH	Seps	28,232	28,011	33,423	25,986	30,588	2,356	8.3%
	Bed days	81,002	84,218	91,575	84,674	95,969	14,967	18.5%
	ALOS	2.9	3.0	2.7	3.3	3.1	0.3	9.4%

Table A: NCH Activity Summary. Source: ABF AP Extract, ACTHD, 2024. Excludes Chemotherapy, Renal Dialysis and Unqualified Neonates. Includes all care types and all ages, overnight and same day activity.

To support growing projected demand, Section 10 outlines the future service strategies for NCH with a focus on strengthening its role within the CHS Network, establishing service-level networks for Territory-wide service delivery, improved non-admitted patient services and digital pathways to deliver care out of hospital.

A future NCH will include:

- **Delivery of clinical services to the full scope of the RDL-4 capability.**
- **An expanded ED service** to manage current and future demand, in particular to better care for paediatric patients.
- **An integrated Cardiology and CCU service** to enable whole of patient journey management and consolidate clinical governance arrangements for this cohort.
- **Interventional cardiology capability** with on-site cardiac catheterisation lab aligned to a RDL-4 service.
- **Supporting emergency surgical cases** that present via the ED.
- **Becoming a high-volume low-complexity surgical centre** to build a critical mass for planned General Surgery, Urology, Gynaecology, Ophthalmology, and Endoscopy and be integrated with the TCH surgical workforce model.
- **An integrated and networked Breast Cancer Surgery service** with TCH Cancer Services.
- **A coordinated theatre complex approach** to enable including the CHS networked workforce resourcing and allocation.
- **An expanded Midwifery Continuity of Care model.**
- **A Birthing on Country model** to support Aboriginal and Torres Strait Islander people on their pregnancy journey.
- **Enhanced and coordinated integration of Special Care Nursery service** with TCH Neonatal Services to care for unwell babies.
- **A 23-hour paediatric inpatient service**, supported by paediatric medical and nursing expertise and networked with the TCH Paediatric Service.
- **An integrated mental health service** within CHS MHJHADS, incorporating NCH within Territory-wide service models
- **A Drug and Alcohol Consultation Liaison service** to support the care of people with drug and alcohol co-morbidities.
- **Establishing sub-acute inpatient care models** to support the care of Maintenance/non-acute patients and facilitate timely discharge to other care settings.
- **Expanding palliative care capacity** in the acute inpatient setting.
- **Expanding Care Close to Home services** to support hospital avoidance strategies.
- **Re-establish a day-chemotherapy service for selected conditions** to enable access for ACT North residents to this service close to home.
- **Expanded non-admitted and outpatient services and infrastructure** to manage future demand and contribute to ED and hospital avoidance strategies.
- **Integrated virtual care delivery models** to care for people in the home.
- **Advanced Practice service models** to manage complex patient cases across medical and surgical disciplines.
- **On-site interventional radiology capability and capacity** aligned to a RDL-4 service.
- **Enhanced imaging and pathology diagnostic services.**

- **Established clinical service networks** across the CHS for ICU, Cardiology, Neurology, Gastroenterology, Ophthalmology, Gynaecology, Maternity, Special Care Nursery, Older Persons, Mental Health, Cancer Care, Radiology and Pharmacy.

An extensive analysis of future projected demand was undertaken and is detailed in Section 11. Recognising that with the majority of ACT's projected population occurring within the northern region, the proposed solution is the redevelopment of NCH to deliver to the full extent of its RDL-4 level services within contemporary and purpose-built spaces, supporting contemporary and evidence-based models of care. It is understood that future investment in implementing the future strategic directions will be subject to further feasibility review.

Table B outlines the current and future built infrastructure proposed based on review and analysis for the current and projected activity across inpatient and non-admitted services.

	CHS and ACTHD AGREED ADJUSTMENTS , 2025				
	NCH 2024 Current Build	NCH 2031	NCH 2041	NCH 2031	NCH 2041
Multi-Day and Same-Day Acute Beds	150	235	294	nil adjustment	nil adjustment
Adult Subacute Beds	0	37	50	nil adjustment	nil adjustment
Paediatric Beds	0	9	10	nil adjustment	nil adjustment
Maternity Beds	27	18	22	nil adjustment	nil adjustment
Adult Psychiatry and Mental Health Beds	42	44	57	nil adjustment	nil adjustment
Neonatal Services POC (SCN)	14	9	11	nil adjustment	nil adjustment
ICU Beds	10	11	14	nil adjustment	nil adjustment
Coronary Care Unit	6	captured within MD and SD beds (not modelled separately)	captured within MD and SD beds (not modelled separately)	nil adjustment	nil adjustment
AOD	0	captured within MD and SD beds and Outpatient POC (not modelled separately)	captured within MD and SD beds and Outpatient POC (not modelled separately)	nil adjustment	nil adjustment
Operating Rooms inc. caesarean theatre	7	7.3 (8)	8.7 (9)	8	10
Day Surg (inc Endoscopy) / Procedural room	1	1.1 (2)	1.4 (2)	2	3
Cath Labs	0	0.2	0.2	2	2
Birthing Rooms	8	6	7	nil adjustment	nil adjustment
Recovery spaces	30	38	45	45	59
ED - Acute Treatment Spaces	23	49	63	nil adjustment	nil adjustment
ED - Resuscitation	2	5	6	nil adjustment	nil adjustment
EDSSU	15	14	18	nil adjustment	nil adjustment
ED-Fast track	15	captured within ED-Acute Treatment Spaces (not modelled separately)	captured within ED-Acute Treatment Spaces (not modelled separately)	nil adjustment	nil adjustment
ED Other Rooms (Isolation, MH assessment, procedure room)	4	7	9	nil adjustment	nil adjustment
Outpatient / HiTH / Allied Health / Community Health POC	35	78	99	86	109
Total excluding SSU³ and MI	389	569	715	585	742

Table B: Current and Forecasted Bed Infrastructure Table for NCH, 2024-2041. Note the items is in brackets representing redundancy required to deliver clinical services efficiently. Excludes public in private projected beds. Rounding has been applied.

³ SSU denotes Sterilising Services Unit

1. Context of the Clinical Services Plan

The Northside Hospital Clinical Services Plan (CSP) articulates the vision for the North Canberra Hospital /Northside Hospital for the provision of contemporary adult and paediatric healthcare for the residents of the ACT, primarily those located in the northern regions⁴ of the Territory. The CSP builds upon the developments made possible through the integration of North Canberra Hospital (NCH) into the Canberra Health Services (CHS) with future focuses on networking at the service level. The CSP addresses the health needs of the diverse and rapidly growing and ageing population of the northern areas of ACT.

The CSP has been developed within the context of government priorities at a Commonwealth and Territory level. It demonstrably supports the ACT Health policy and planning context and key trends that influence health service delivery, current service context and key planning assumptions and future scenario modelling. The focus is on accessibility, accountability and sustainability⁵, supporting ACT residents to have access to the right care in the right place and at the right time.

The CSP is also consistent with the ACT Health Services Plan and CHS Strategic Plan 2024-2029⁶ which references the planning and commissioning of the new Northside Hospital, the full integration of NCH and Clare Holland House (CHH) into the CHS Network bringing all ACT public hospitals and health services into one integrated public health system, growing health and medical research, shifting care into the community with expansion of community based and primary care models, and influencing the population health outcomes.

The redevelopment of NCH provides CHS with the opportunity to develop services and a contemporary hospital for North Canberra as well as a suite of Territory-wide services operating in a two-campus model. Key directions for the new Northside Hospital that arose from the extensive stakeholder consultation, informed by the ACTHD strategic planning context and approved by the Northside Hospital Clinical Services and Facility Planning Project Steering Committee include:

- To **strengthen and develop on the role of NCH as a high-quality and safe Public Acute Group A Hospital**⁷ that delivers emergency medicine, critical care, coronary care, medical and surgical specialities, maternity and paediatrics, mental health and older person services.
- To enable the **delivery of care aligned to the NSW Role Delineation Level (RDL) 4** for the majority of its medical and surgical services, including the required core and support services.
- To **support TCH in its role as the Principal Referral Hospital** for the ACT through strong referral systems and integrated pathways ensuring seamless patient care between TCH and NCH.

⁴ For the purpose of this CSP, reference to 'Northside' and 'ACT North' are used interchangeably and refers to the Belconnen, Gungahlin, Molonglo and North Canberra SA3 regions collectively. Refer to Section 7 for further details on the catchment profile.

⁵ ACT Government. 2022. ACT Health Services Plan 2022-2030. Accessed from:

https://www.act.gov.au/_data/assets/pdf_file/0018/2250441/ACT-Health-Services-Plan_2022-to-2030.pdf

⁶ Canberra Health Services. 2024. Canberra Health Services Strategic Plan 2024-2029. Accessed from:

https://www.canberrahealthservices.act.gov.au/_data/assets/file/0005/1933178/CHS_Strategic-Plan-2024-2029_DIGITAL-FA.pdf

⁷ AIHW, 2015. Australian Peer Groups. Accessed from <https://www.aihw.gov.au/reports/hospitals/australian-hospital-peer-groups/related-material>

1.1 Background

In recognition of the growing population in Canberra, the ACT Government has committed to building a new Northside Hospital to extend hospital services in the north of ACT. As outlined in the District Strategies⁸ the northern region of the ACT is expected to accommodate most of the future growth in the areas of Gungahlin and Molonglo Valley with sites identified in indicative land release programs for future development. The Inner North and City and Belconnen districts are also expected to accommodate a significant share of new medium and higher density development. Thus, there is a rationale to ensure that the capacity, capability and access to health services to respond to projected population growth is well established.

The Northside Hospital CSP outlines the strategic intent and future service direction for Northside Hospital. As part of the development of the CSP, an analysis of current activity (North Canberra Hospital (NCH)) and projected activity, along with an assessment of existing infrastructure, models of care, and workforce, has been conducted. The CSP provides information on future infrastructure requirements in order to respond to demand and support the implementation of new models of care. It is understood that future investment in implementing future strategic directions will be subject to further feasibility review.

It is important to recognise the integration of NCH including CHH Hospice to CHS as of July 2023. This allowed for the creation of an integrated single network public hospital system across the ACT.⁹ Over the past 18 months, planning for the expanded northside hospital services and facilities has been underway and the CSP provides an invaluable opportunity to plan and deliver a health system networked under one provider. The underlying principle for this CSP is that the Northside Hospital will be networked with The Canberra Hospital (TCH) which will remain as the tertiary facility for ACT and the surrounding regions, and the University of Canberra Hospital (UCH) which delivers sub-acute services. This will enable access to specialised care while developing the local service capability and capacity of Northside Hospital in an integrated service approach.

The Northside Hospital CSP is a key foundation document that will guide the service prioritisation and scope prioritisation based on local priorities in alignment with the strategic planning context in the ACT and policy directions. The CSP will also inform the development of the Future Service Frameworks that outline future service delivery models across the care continuum and inform facility planning for the Northside Hospital Project.

Given the long-term projected population growth expected across the ACT and with the majority of that growth occurring in the northern region of the Territory, the planning horizon for this CSP is 2041. This recognises the requirements to adequately plan for services while the Northside Hospital Project redevelopment is progressing and consider the influences of a redeveloped North Canberra/Northside Hospital and its services on the broader ACT health system till 2041.

1.2 Clinical Services Plan Development

The development of the CSP has been informed by:

- Review and analysis of relevant clinical services information and data pertaining to NCH, and where relevant TCH.
- Synthesis of qualitative and quantitative information to inform strategic directions and service options for NCH.
- Key ACTHD strategic and policy documents as well as a review of the literature.

⁸ ACT Government. 2023. District Strategies Volume One Metropolitan context and big drivers. Accessed from: https://www.planning.act.gov.au/data/assets/pdf_file/0009/2324682/district-strategies-2023-volume-1-metropolitan-context-and-big-drivers.pdf

⁹ ACT Government. 2023. Services transition at North Canberra Hospital and Clare Holland House. Accessed from: https://www.cmtedd.act.gov.au/open_government/inform/act_government_media_releases

- Extensive consultation with executive, clinical and operational staff from NCH, TCH and CHS and relevant service partners, to complement quantitative data analysis and inform strategic directions.

A steering committee was established to provide leadership and advice for the clinical services and facility planning components of the Northside Hospital Project including the development of the clinical services plan. The steering committee, which included representatives from NCH, CHS and ACTHD, ensured that there was alignment for each clinical services and facility planning component with overarching ACTHD and CHS strategies and procedures, including territory-wide networked service strategies.

1.3 ACT Health Services Delivery Model

Currently, health services and healthcare delivery are integrated across providers and settings including¹⁰:

- In-hospital care in local, tertiary and interstate hospitals for highly specialised care.
- On-campus through day-only and outpatient clinics on hospital campuses.
- Via virtual care delivered across campuses, into the home, into other providers and other settings.
- In the home through non-admitted services such as Hospital in the Home (HITH).
- In the community, via primary care providers, Community Health Centres (CHC), Walk-in Centres (WiC) and other health service providers including Non-Government Organisations (NGOs).

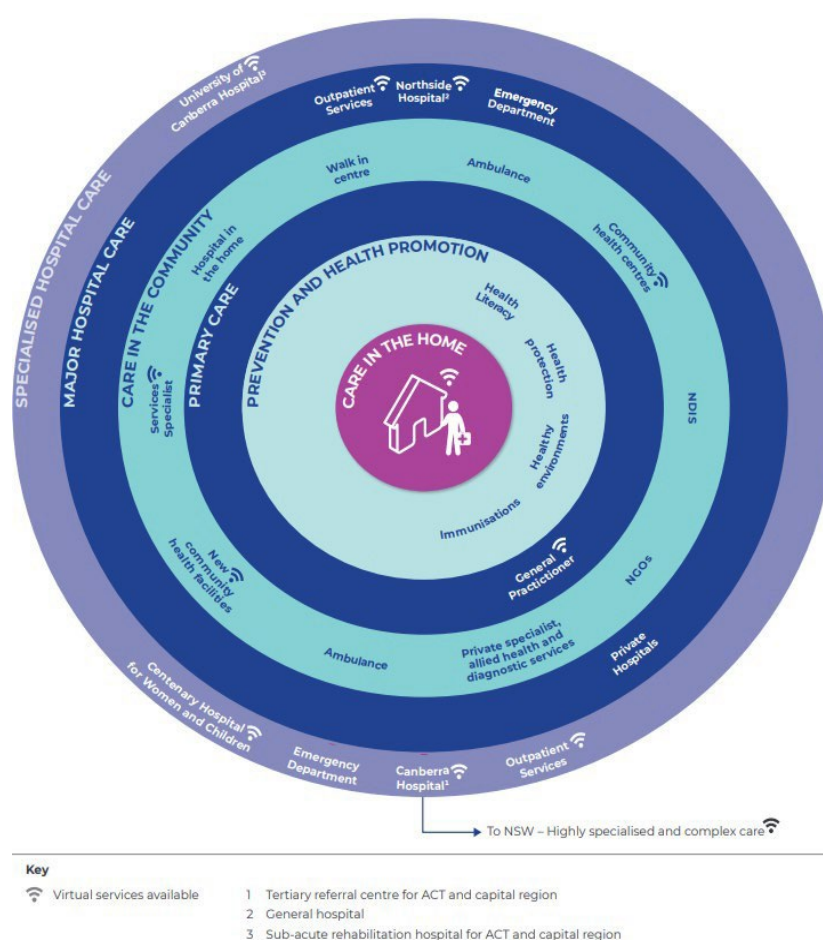


Figure 1: ACT Health Services Delivery Framework. Source: ACTHD, 2022.

¹⁰ ACT Health Directorate. 2022.

1.4 Northside Hospital Strategic Planning Context

In order to achieve integrated and coordinated health services, the development of the Northside Hospital CSP must occur in the context of other ACT Health strategies and plans, including (but not limited to) the ACT Health Services Plan. The key objectives of the new Northside Hospital are to provide:

- Greater capacity in the health care system in the north of the ACT.
- Patient focused / community focused care that improves patient outcomes.
- A hospital that is agile and flexible, with a whole-of-life focus.
- Greater alignment of health service delivery across the Territory

The following section outlines the strategic context of Northside Hospital and the CSP.

ACT Health Services Plan

From a state policy and planning perspective, the ACT Health Services Plan 2022-2030¹¹ (ACT HSP) provides a roadmap for the redesign, investment and redevelopment of health services funded by the ACT Government, therefore it is a foundational document to form part of the planning for Northside Hospital and the CSP. The ACT HSP is a deliverable under the '*Accessible, Accountable, Sustainable: A Framework for the ACT Public Health System 2020–2030*'¹². Figure 2 illustrates how the Northside Hospital CSP is linked to the ACT HSP.

The principles used to underpin the service planning methodology for the ACT HSP are also relevant for establishing guiding principles for the Northside Hospital CSP. The principles within the ACT HSP are as follows:

- **Person-centred services:** Consultation with consumers and carers in order to ensure ease of access, equity and shared-decision making.
- **Improving health outcomes and access:** Evidence-informed policy directions with a focus on priority populations – “*planning the right service, at the right time, in the right place, by the right team—every time*”.
- **Sustainable services:** Service planning informed by need and efficient use of resourcing.
- **Inclusive and culturally appropriate services:** Consultation with underrepresented groups to ensure inclusivity and culturally appropriate services which meet the needs of vulnerable populations.
- **Safe and quality services:** Service provision leading to enhanced health outcomes, improved experience of receiving and providing care, as well as the improved effectiveness and efficiency of care.

¹¹ ACT Government. 2022. ACT Health Services Plan 2022-2030. Accessed from: https://www.act.gov.au/_data/assets/pdf_file/0018/2250441/ACT-Health-Services-Plan_2022-to-2030.pdf

¹² ACT Government 2020. Accessible, Accountable, Sustainable: A framework for the ACT Public Health System 2020-2030. Accessed from: https://www.act.gov.au/_data/assets/pdf_file/0008/2268287/Strategic-Framework_Feb-2020_FINAL-MIN-ENDORSED.pdf

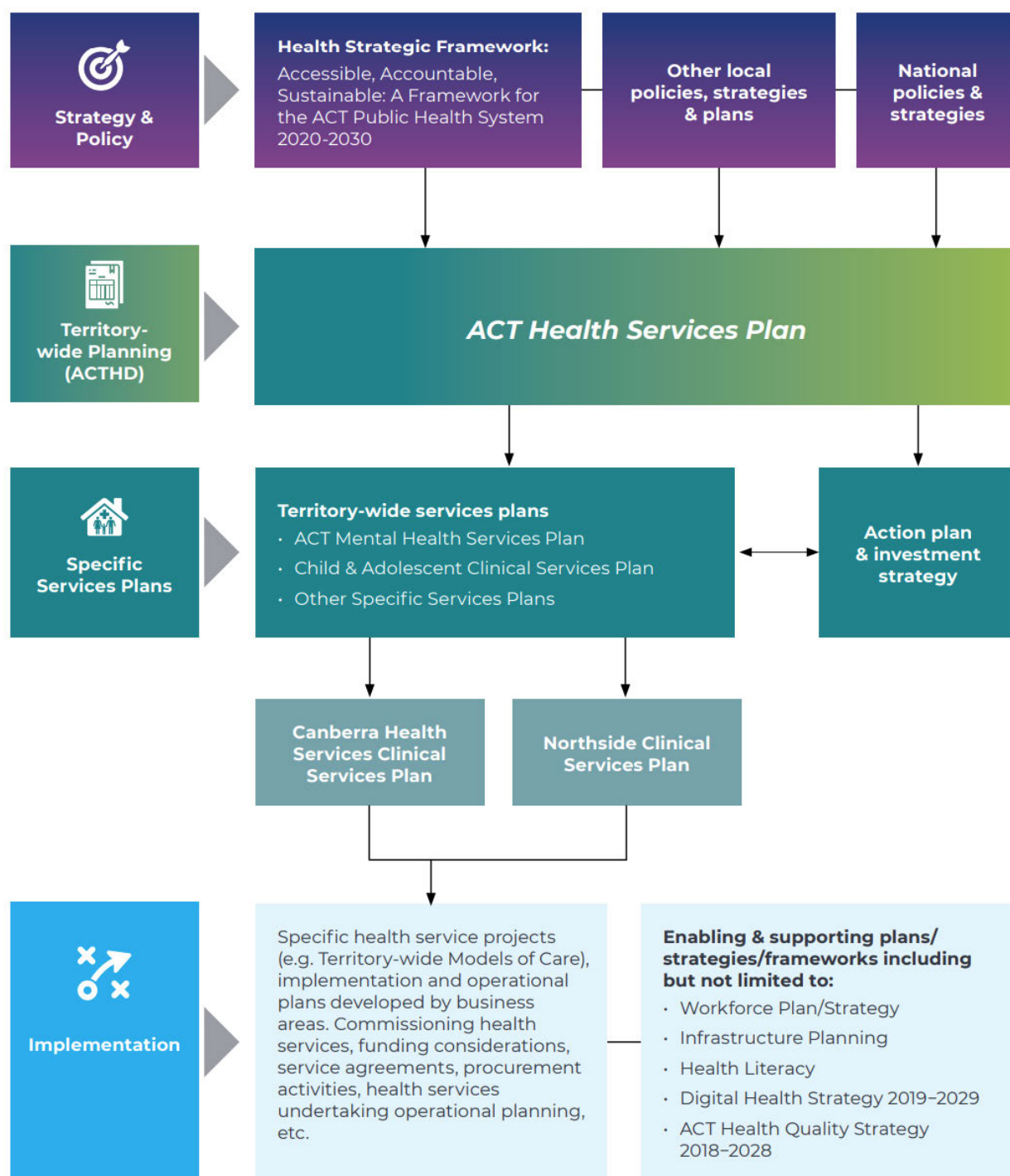


Figure 2: ACT Health Services Plan¹³

¹³ ACT Government. 2022. ACT Health Services Plan 2022-2030. Accessed from: https://www.act.gov.au/data/assets/pdf_file/0018/2250441/ACT-Health-Services-Plan_2022-to-2030.pdf

The ACT HSP identifies the importance of expanding services in the northern region of the ACT as the population continues to grow. The table below outlines the areas of focus and corresponding actions highlighted within the ACT HSP, which are related to the northern region and Northside Hospital.

Area of focus	Actions
Emergency Care	Undertake service planning for the expansion of an emergency department for Northside Hospital.
Older Persons Care	Establishment of a Centre of Excellence for Care of Older Canberrans in the northern region.
Medical Services	Explore the enhancement and the increased capability of endocrinology services in the northern region.
Medical Services	- Increased access of cardiology services in the northern region, with a key focus on: - cardiology diagnostic services with a view to prevention and long term health - ambulatory and community-based heart failure services to reduce demand on the hospital system and provide care closer to home
Northside Service Planning	- Planning to be undertaken for the future development of services in the northern region, including: - maternity services - mental health services - cancer services - surgical and procedural services - Develop and progress planning for the new northside hospital. - Develop and progress planning for the northside hospital clinical services plan in line with infrastructure planning.

Table 1: ACT Health Services Plan – Northside Focus Areas and Actions. Source: ACT Government, 2022 ACT Health Services Plan 2022-2030. Accessed August 2024.

Digital Health Strategy

The ACT Health Digital Health Strategy 2019-2029 (Digital Health Strategy) outlines the future direction for increasing digital capabilities across the ACT public health system, with the aim of achieving a sustainable, innovative and world-class health system for the ACT. The Digital Health Strategy vision is '*enabling exemplary person-centred care through digital innovation*'¹⁴. The Northside Hospital Project presents a significant opportunity to lead the digital transformation of health service delivery in the ACT and to future-proof services for enhanced patient care through the realisation of the Digital Health Strategy.

Strategies for consideration include:

- Service delivery that is accessible, supported by technology such as remote patient monitoring.
- Investment in a single clinical record for individuals which can be accessed by multidisciplinary and multi-institutional teams.
- Utilisation of a Purchasing and Inventory Control System (PICS) for ordering clinical and non-clinical goods/services.
- Investment in technology and digitally enabled solutions, including the automation of core administrative tasks.

The implementation of the Digital Health Record across ACT Government health services in 2022, supports every public hospital process including patient administration, medication management, pathology and imaging orders and results, as well as providing patients with access to their clinical information. Service delivery will be further strengthened and improved as the system is further optimised and its full potential realised.

¹⁴ ACT Government. 2019. Digital Health Strategy 2019-2029. Accessed from: https://www.act.gov.au/_data/assets/pdf_file/0005/2194925/Digital-Health-Strategy-2019-2029.pdf

ACT Health Workforce Strategy

The ACT Health Workforce Strategy 2023-2032 (Workforce Strategy) outlines the Territory-wide strategic approach to building and retaining a sustainable health workforce for the ACT and surrounding region. The vision for the Workforce Strategy is *'a highly skilled and valued health workforce supported by a learning health system delivering quality health outcomes for the community'*¹⁵.

As a result of increasing healthcare demand and workforce shortages, workforce challenges are currently experienced by the public and private health sector across Australia. Collaboration across the ACT is identified as essential to the successful development and implementation of workforce planning.

Healthy Canberra: ACT Preventive Health Plan

The Healthy Canberra: ACT Preventive Health Plan 2020-2025 (Preventative Health Plan) identifies the strategic priorities and action areas for reducing the prevalence of chronic disease and supporting good health across all stages of life for the ACT population. The Preventative Health Plan is delivered through two, three-year action plans. The second action plan is currently in progress, due for completion in 2025¹⁶. This strategy is critical to supporting and building the health and wellbeing of people across the ACT and achievement of its objectives through coordinated action across the health sector, government and community cannot be overstated.

CSP is focused on service development and future requirements for the Northside Hospital, exploring and outlining non-capital solutions that improve health and wellbeing and reduce the need for acute inpatient care, is a key strategy for managing health service demand.

ACT Health Quality Strategy

The ACT Health Quality Strategy 2018-2028 (Health Quality Strategy) is a framework for measuring improvement in the quality of health services delivered by ACT Health. The ambition of the Health Quality Strategy is to be a *'high performing health service that provides person-centred, safe and effective care'* with the aim of delivering *'person-centred, safe, effective and efficient care'*¹⁷. The Health Quality Strategy will be a key underpinning document for Northside Hospital as a provider of safe and quality health services in the ACT.

ACT Child and Adolescent Clinical Services Plan

The ACT Child and Adolescent Clinical Services Plan 2023-2030 (Child and Adolescent CSP) is focused on the health needs of children and adolescents living in Canberra and surrounding regions. The vision for the Child and Adolescent CSP is to *'see children, adolescents and their families have easy access to a caring, inclusive and high-quality health system in the ACT that enables them to live their best and healthiest lives... now and in the future'*¹⁸. The Child and Adolescent CSP focuses on ACT Government funded clinical services for children and adolescents.

¹⁵ ACT Government. 2023. ACT Health Workforce Strategy 2023-2032. Accessed from:

https://www.act.gov.au/_data/assets/pdf_file/0003/2326755/Workforce-Strategy-2023-2032.pdf

¹⁶ ACT Government. 2019. Healthy Canberra: ACT Preventative Health Plan 2020-2025. Accessed from:

https://www.act.gov.au/_data/assets/pdf_file/0005/2119658/Healthy-Canberra-ACT-Preventive-Health-Plan-2020-2025.pdf

¹⁷ ACT Government. 2018. ACT Health Quality Strategy 2018-2028. Accessed from:

https://www.act.gov.au/_data/assets/pdf_file/0007/2423635/ACT-Health-Quality-Strategy-2018-2028.pdf

¹⁸ ACT Government. 2018. ACT Child and Adolescent Clinical Services Plan 2023-2030. Accessed from:

https://www.act.gov.au/_data/assets/pdf_file/0005/2423651/Child-and-Adolescent-Clinical-Services-Plan-2023-2030.pdf

ACT Government Wellbeing Framework

The ACT Wellbeing Framework (Framework) provides high-level wellbeing indicators to measure wellbeing and track progress against the Framework. Health is one of the twelve (12) wellbeing domains identified within the Framework. The health-related indicators measure levels of overall health and mental health, including life expectancy and self-report indicators¹⁹. Northside Hospital will significantly influence the health and wellbeing of individuals within the ACT through increasing access to health services (a key outcome within the Framework), therefore the Framework is a key document for incorporation into the Northside Hospital CSP.

Maternity in Focus: The ACT Public Maternity System Plan

The ACT Government Maternity in Focus: The ACT Public Maternity System Plan 2022-2032 sets the direction and ACT Government priorities for the public maternity system to meet the needs of women, pregnant people, their babies and families, and the multidisciplinary workforce. Within this plan, it is outlined that the ACTHD, CHS and NCH, will work closely with stakeholders to deliver a public maternity system that delivers the care which responds to the needs of the community and workforce²⁰. The maternity services planned for the Northside Hospital will be aligned with the Plan, including to provide the right maternity care at the right time, which meets the needs of women and pregnant people and their family, and encompasses their social, emotional, physical, psychological, spiritual, and cultural needs and expectations.

To compliment the above, ACTHD undertook a Birth Centre Feasibility Study²¹ to determine the most suitable birthing centre model for integration into the Northside Hospital Project. The final outcome from this study should be considered as part of the Northside Hospital Project.

Canberra Health Services Strategic Plan

The vision of CHS is:

“creating exceptional health care together”²²

The strategic plan sets out three strategic priorities to guide service delivery over the next five years. This CSP will utilise the key strategies detailed below to ensure that future service delivery is aligned to the overarching strategy to drive effectiveness and efficiency of activity through clinical network models, maintain sustainable practice, achieve improved patient outcomes and ensure equity of access to the right care at the right time regardless of where a person presents. These include:

1. **Delivering world class care** that is inclusive, culturally safe, delivered to the highest standards and evidence-based in a timely way across its acute, planned and community portfolios.
2. **Being a great place to work, learn and teach** to attract, recruit and retain skilled workers in a culture of open and respectful communication.
3. **Building a strong research, innovation and improvement environment** by demonstrating its health services leadership role and resulting in improved health outcomes for consumers.

¹⁹ ACT Government. 2020. ACT Wellbeing Framework. Accessed from:

https://www.act.gov.au/_data/assets/pdf_file/0004/1498198/ACT-wellbeing-framework.pdf

²⁰ ACT Government. 2022. Maternity in Focus: The ACT Public Maternity System Plan 2022-2032. Accessed from:

https://www.act.gov.au/_data/assets/pdf_file/0006/2324355/Maternity-in-Focus-ACT-System-Plan-2022-2032.pdf

²¹ ACT Government. 2024. Northside Birth Centre Feasibility Study. Commercial in Confidence.

²² Canberra Health Services. 2024. Canberra Health Services Strategic Plan 2024-2029. Accessed from:

https://www.canberrahealthservices.act.gov.au/_data/assets/file/0005/1933178/CHS_Strategic-Plan-2024-2029_DIGITAL-FA.pdf

Belconnen District Strategy

The Belconnen District Strategy (2023)²³, outlines the strategic direction and future planning outcomes for the Belconnen region. Of note for the Northside Hospital context, is the identified strategic direction for the development of an integrated Belconnen Education and Sports Innovation Precinct (Precinct). The Precinct will encompass Northside Hospital, University of Canberra, the UC Hospital, the Australian Institute of Sport and Bruce Canberra Institute of Technology and GIO Stadium. The Precinct will present significant networking and partnership opportunity for Northside Hospital. In addition, the strategies outlined within the document present further opportunities for employment in low socioeconomic regions, improved transportation and new community and recreational facilities which may further contribute to the growing population in the region which will be serviced by Northside Hospital.²⁴

Gungahlin District Strategy

The Gungahlin District Strategy (2023) outlines the strategic direction and future planning outcomes for the Belconnen region. The region has undergone significant suburban development recently, with the suburbs of Taylor, Kenny and Jacka as the latest to develop. The recent development in Taylor, Kenny and Jacka will provide improved diversity for social and affordable housing. The Strategy further outlines that additional housing options will be provided in the region in accessible locations, including locations in proximity to town centres and transportation. In addition, the strategies within the document present further planning for new facilities in the region, including schools, Amaroo tennis centre, Casey CRIP and a new community centre in the town centre.²⁵ The significant development within the Gungahlin region and increase in affordable and diverse housing may present further diverse socioeconomic populations for the Northside Hospital catchment.

Molonglo Valley District Strategy

The Molonglo Valley District Strategy (2023) outlines the strategic direction and future planning outcomes for the Molonglo region. The Molonglo Valley is the newest district of the nine districts across Canberra and is the main greenfield development area. The development in Molonglo Valley is expected to provide affordable and diverse housing options which will accommodate for a significant portion of the overall demand for detached housing through townhouses and apartment style residences. As the district develops, there are expected changes to the employment base and demographics in the region. Development is also underway for local centres and community facilities, including new schools and college, district playing field, community centre and library facilities.²⁶ Similarly to the Gungahlin district, these significant developments and growing population is likely to further diversify the catchment for Northside Hospital.

North And City District Planning Strategy

The Inner North and City District Planning Strategy (2023) outlines the strategic direction and future planning outcomes for the inner North and City region in Canberra. It is acknowledged that the City region does not fall within the catchment of Northside Hospital, however no strategic planning

²³ The Belconnen, Gungahlin, Molonglo Valley and North and City District Strategies are prepared by the ACT prepared by the ACT Environment, Planning and Sustainable Development Directorate. The scope of the strategies include district strategies look at how the ACT will manage growth in a way that is sustainable. This way, Canberrans can continue to have access to services, transport, employment, health, education and nature. Accessed from: <https://www.planning.act.gov.au/professionals/our-planning-system/district-strategies>

²⁴ ACT Government. 2023. Belconnen District Strategy. Accessed from: https://www.planning.act.gov.au/data/assets/pdf_file/0010/2324683/district-strategies-2023-volume-2-district-strategies-belconnen.pdf

²⁵ ACT Government. 2023. Gungahlin District Strategy. Accessed from: https://www.planning.act.gov.au/data/assets/pdf_file/0003/2324685/district-strategies-2023-volume-2-district-strategies-gungahlin.pdf

²⁶ ACT Government. 2023. Molonglo Valley District Strategy. Accessed from: https://www.planning.act.gov.au/data/assets/pdf_file/0006/2324688/district-strategies-2023-volume-2-district-strategies-molonglo-valley.pdf

documentation was provided which exclusively represents the North region. The North and City region is highly urbanised and has undergone significant developments and population growth. As the economic, civic and cultural centre of Canberra, it provides a wide range of facilities and assets. This region provides significant opportunity for partnerships for Northside Hospital with large and influential organisations such as Australian National University and Commonwealth Scientific and Industrial Research Organisation, amongst others²⁷.

1.5 Guiding principles

The emphasis of the overall CSP will be on patient and family centred care, promote hospital avoidance where clinically appropriate, increasing ambulatory care and access to services within the community and improving system-wide integration. Hospital services will need to grow to address the very significant population growth and ageing of the population anticipated for the northside of ACT, and to provide accessible, timely and safe healthcare.

Service planning principles determine and guide the development of CSPs and provide a framework to achieve the vision and objectives of CHS. The following principles were endorsed:

- **Person-Centred and Inclusive Services:** Ensure all services prioritise consumer and carer consultation to promote shared decision-making, equity, and ease of access, with a focus on culturally safe and inclusive care for all populations.
- **Sustainable and Efficient Service Delivery:** Plan and deliver services informed by community need, making the best use of available resources to ensure long-term sustainability.
- **Evidence-Based, Timely, and Equitable Access:** Deliver the right service, at the right time, in the right place, by the right team guided by evidence and aimed at improving health outcomes, especially for priority populations.
- **High-Quality and Safe Care:** Provide care that meets the highest standards of safety, quality, and efficiency, ensuring a positive experience for both consumers and providers, while continually improving effectiveness.
- **Workforce Development and Innovation:** Foster a culture that attracts, develops, and retains skilled healthcare professionals through a supportive and respectful work environment, with a commitment to research, innovation, and continuous improvement in health outcomes.

²⁷ ACT Government. 2023. Inner North and City District Strategy. Accessed from: https://www.planning.act.gov.au/data/assets/pdf_file/0004/2324686/district-strategies-2023-volume-2-district-strategies-inner-north-and-city.pdf

1.6 Consultation Process

The development of CSP involved an extensive consultation process involving over 300 CHS, NCH and TCH executive, clinical, non-clinical and operational stakeholders as well as service partners across 50 individual interviews, focus groups and staff sessions. The CSP also harnesses the comprehensive consumer engagement undertaken by ACTHD²⁸ to inform early planning for the new Northside Hospital Project.

Opportunities

- Building the role of NCH/Northside Hospital** as part of CHS, including clinical networks.
- Focusing on NCH speciality areas** to support CHS in Territory-wide service delivery.
- Streamlining the patient journey** through increased collaboration.
- Strengthening admission criteria.**
- Integrating the transport network** for inter-hospital transfers.
- Increasing outpatient services** such as Rapid Access Clinics to avoid admission.
- Strengthening partnerships** with university partners for research and workforce development.
- Investing in digital pathways** to support pre-admission and post-acute care.

Challenges

- Increasing demand** across majority of services.
- Increasing presentations of paediatric people** attending the ED.
- Current transfer process of patients** between NCH and TCH and the influence of ACTAS on patient flow.
- Perceived disconnect with TCH services.**
- Addressing the needs of patient cohorts with varying complexity** across the hospital.
- Increasing volume of patients waiting in acute beds** for UCH or RACF placement.
- Workforce challenges** across medical, nursing and allied health.
- Limited research opportunities.**

²⁸ ACT Government. 2023. Phase 2 - Northside hospital consultation report - Designing ACT health services for a growing population. Accessed from: https://yoursayconversations.act.gov.au/download_file/view/9781/2488

2. Key Drivers for Change

Various factors influence the delivery and access of health services, ranging from population growth, health status of the community, new service delivery models and broader technological advances and opportunities. The following represent high-level themes driving the need for change for North Canberra Hospital and include:

- Projected population growth in the Northside.
- Integration of NCH into CHS from the previously being delivered as a part of a publicly contracted service.
- Changing models of care and service delivery, with care increasingly moving to outpatient and community settings.
- Aging infrastructure of NCH and lack of master-planning across the hospital campus.
- Workforce and resourcing challenges across medical, nursing and allied health disciplines.
- Community expectations for seamless care delivery and access to high-quality and safe service.

It is evident that even with the significant health service operational changes, hospital avoidance programs and non-infrastructure solutions that are earmarked to be implemented given the integration of NCH into CHS, the current and projected demand for hospital health care remains substantial. Continuing on this pathway is unsustainable and there is a need for system transformation to ensure the right care is provided at the right time in the right place.

The proposed future approach to change will focus on developing virtual care and ambulatory care, developing and updating infrastructure and supporting new and innovative models of care, shifting care into the community accompanied by a modest increase in inpatient beds, to support the projected future population of the northside regions. There is a requirement to address existing operational issues, including fragmented patient flow and bed management, limited non-admitted outpatient capacity and ambiguous admission criteria, in the short to medium term.

2.1. Unsustainable demand for services

The local community requires the provision of local, comprehensive healthcare services, consistent with Role Delineation Level 4 to be provided at NCH. From 2018/19 to 2022/23, there has been a significant growth in demand for health services at NCH. These trends are expected to continue and extrapolated forward will be unsustainable with the current infrastructure. Current trends between 2018/19 and 2022/23 for NCH include:

- 1.4% reduction in adult acute medical and surgical overnight separations and 20.7% increase in adult acute overnight bed days including a 22.5% increase in the average length of stay from 3.8 days to 4.6 days.²⁹
- 0.7% increase in maternity separations and 0.2% reduction in maternity bed days.³⁰
- 14.6% increase in mental health overnight separations and 0.7% decrease in mental health overnight bed days including a reduced ALOS from 22.6 days to 20.0 days.³¹

²⁹ ACTHD, 2024.2022/23 ABF Admitted Patient Extract. Includes NCH, acute care type. Excludes SRGs: chemotherapy, renal dialysis, unqualified neonates, care types: mental health, sub-acute and all others, and 0 to 15 years. Note: excludes Antenatal Admission and Postnatal Admission ESRGs due to coding change in 2022/23 which saw an over 100% increase in admitted antenatal and postnatal activity at both TCH and NCH.

³⁰ ACTHD, 2024.2022/23 ABF Admitted Patient Extract. Includes NCH, acute care type, Obstetrics SRG, all ages. Excludes SRGs: chemotherapy, renal dialysis, unqualified neonates and all other SRGs, care types: mental health, sub-acute and all others. Note: excludes Antenatal Admission and Postnatal Admission ESRGs due to coding change in 2022/23 which saw an over 100% increase in admitted antenatal and postnatal activity at both TCH and NCH.

³¹ ACTHD, 2024.2022/23 ABF Admitted Patient Extract. Includes NCH, mental health care type. Excludes SRGs: chemotherapy, renal dialysis, unqualified neonates, care types: acute, sub-acute and all others, and 0 to 15 years.

- 31.6% increase in adult sub-acute overnight separations and 71.3% increase in sub-acute overnight bed days, influenced by Maintenance/Non-Acute activity.³²
- Sub-Acute ALOS increasing from 11.2 days to 26.3 days.
- For CH, there was a 14.8% increase in overnight separations and 2.8% increase in overnight bed days.³³
- For emergency department activity, given the COVID pandemic influencing how people accessed services between 2019/20 and 2021/22, a longer trend analysis was utilised for NCH, which had a 1.87% annual increase in emergency department (ED) presentations from 2018/19 to 2023/24.³⁴

2.2. Population Growth

A key driver of increasing demand for health services is population growth and ageing. The population of the ACT overall is projected to grow by 17.8% from 457,565 people in 2022 to 538,793 people by 2031. By 2041, there is a projected 35.5% growth estimated for ACT to 619,876 people.

The majority of this growth is attributed to population growth across all ages in the northside of the Territory. By 2031, the Northside region is estimated to have a population of 343,636 people compared to 270,506 people in 2022. By 2041, an additional 150,203 people are projected to reside in the ACT North, bringing to total population to 420,709 people, representing a 55.5% increase from 2022.

As the Northside region also represents the natural catchment for NCH, with the majority of NCH activity being for Northside residents, the substantial population projected increase across 2031 and 2041 will likely strain NCH emergency and acute inpatient services, if investment is not made now to develop capacity within the health system to respond to this anticipated demand.

2.3. Integration of NCH into CHS

In July 2023, the integration of NCH into CHS was initiated, where previously services were delivered within a contracted agreement between the ACTHD and Calvary Health Care. With the creation of an integrated single network of public hospital and health services under the management of ACT Health, there is opportunity to reassess the distribution of services across the ACT.

It is well acknowledged that there are opportunities that can come from integrating NCH into the CHS, ranging from role clarity, improved networking of services, coordinated bed and patient transfer management, shared pathways, guidelines, and care standards.

This opportunity and key change driver for the ACT public health system enables CHS to provide a network of clinical services across the ACT to support access to high quality care for all residents. The CSP provides the opportunity to consider the service configurations, clinical networks and optimal care delivery settings best placed to deliver the right care at the right time and right place.

³² ACTHD, 2024.2022/23 ABF Admitted Patient Extract. Includes NCH, sub-acute health care type. Excludes SRGs: chemotherapy, renal dialysis, unqualified neonates, care types: acute, mental health and all others, and 0 to 15 years.

³³ ACTHD, 2024.2022/23 ABF Admitted Patient Extract. Includes NCH_Clarie Holland House, sub-acute health care type. Excludes SRGs: chemotherapy, renal dialysis, unqualified neonates, care types: acute, mental health and all others, and 0 to 15 years.

³⁴ CHS, 2024. North Canberra Hospital, Performance Profile, Series 1: 2017/18 - 2023/24. Includes NCH and emergency department patient care, all ages. Note: Series 1 has an 85% data quality assumption.

2.4. Delivering Care Outside the Hospital

There is system-wide benefit in reducing avoidable hospital and emergency department presentations through systematic approaches to better supporting people, especially priority populations in the community. Hospital avoidance, hospital substitution programs and new models of care are being rolled out at scale, particularly to target and support vulnerable communities and those people with chronic illnesses who are the most frequent re-users of hospital services. Models of care that shift care from within the hospital to outside of it and include core components such as community-based health care, virtual care, health literacy peer support, community development and self-management are key strategies for managing future demand. The models will need to be supported by strengthened partnerships, digital enablement and funding models involving primary care and social care sectors. This strengthens the ability of CHS to purposefully shift care into the community and into people's homes.

The CSP will consider the reconfiguration of hospital capacity and infrastructure required with new models of care by exploring and enabling additional HiTH, community-based care and virtual care capacity, thus moving the focus of care from the admitted hospital environment to ambulatory and community settings over time.

2.5. Changing Models of Care and Innovation in Service Delivery

Furthermore, systemic shifts in the care paradigm are occurring at a number of other levels:

- There is **increasing investment in digital and smart technologies** in health, with strong investment in core analytics, customer experience and virtual healthcare. Virtual healthcare includes using technology to more accurately diagnose, treat, deliver, schedule, monitor and communicate about care. These disruptive technologies are currently transforming the entire care continuum from general practice and emergency care, admission and discharge, chronic disease management, patient monitoring and adherence to treatments, interpreting and improving clinician engagement.
- **Robotics** has numerous future applications in healthcare. CHS is exploring the way robotics can significantly change the way health care is practised, particularly in the fields of surgery and pharmacy. Robotics also currently improves drug preparation, sterilises medical equipment, and allows our human resources to function in higher-value areas. Similarly digital reality or virtual reality similarly has applications across patient and clinician education, treatments, peri-operative planning and pain management.
- The **shift to ambulatory models of care** will occur as care and procedures are increasingly being undertaken on an outpatient basis.
- **Medical services are increasingly being provided on a day only basis.** There is likely to be more availability of procedures and diagnostics in the emergency, cardiology and respiratory departments, with greater capacity for monitoring organ function and new approaches for time-critical illnesses such as stroke and heart disease. Flexible spaces for procedures and novel models of care will be required while acknowledging that patient cohorts are becoming increasingly more complex, with multiple co-morbidities and complex health and social needs.

- Surgery will continue to focus on **minimally invasive procedures and interventions**, resulting in reduced hospital stay and improved outcomes. Hybrid and robotic operating theatres will continue to enable greater integration of technology including interventional radiology services to both guide and direct surgical interventions. There is evidence supporting the utilisation of robotic surgery in urological, gynaecological and colorectal surgery and improved quality of life (QOL)³⁵, further supporting the need to incorporate it as part of routine surgical services delivery.
- Expensive and **aggressive drug regimens and novel pharmaceutical treatments** are likely to be even more frequently used for respiratory, cardiac, cancer, immunology and other systemic conditions.
- Medical Imaging will have an **increasing diagnostic and therapeutic role** (intervention) with some of these services being delivered using AI and robotic technologies. There is likely to be an increase in interventional radiological procedures as well as increased utilisation of imaging across all clinical streams particularly to support patient monitoring and precision medicine.
- Increasingly **care is being personalised with precision medicine** facilitating interventions that can be finely tuned to each individual. This will be further developed through faster diagnostics, genetic profiling, gene therapies, genomics, advanced computing, greater connectivity and artificial intelligence (AI). By 2036, it is likely that medicine will transition from universal standard care to universal precision care, promising customised care for each patient, individual risk profiling, earlier intervention and disease preventions, as well as personally tailored maximally cost-effective treatments. At a population level, precision medicine will mean that prevention can be more easily targeted to at-risk groups resulting in longer survival rates.³⁶

2.6. Aging infrastructure

Many areas of NCH are space constrained, with a lack of clinical consultation, diagnosis, treatment, interview, storage, patient amenity and waiting areas. Stakeholder consultation revealed that the lack of space has significantly impacted on the ability to deliver new models of care as well as deliver the required and expand non-admitted patient services. Overall capital investment has been inadequate to optimise core clinical service functionality for contemporary care and appropriate patient flow.

Furthermore, the limited overall masterplanning at NCH has been noted with minimal co-location of inpatient and non-admitted services and a sprawled approach to infrastructure development over time. For example, non-admitted services are located in separate buildings, far from other clinical services, which requires clinicians, patients and their families to navigate the long distance and physical layout between services. It was also noted that due to limited spaces for teaching, education and non-admitted service delivery, the hospital has experienced training accreditation challenges.

2.7. Workforce Enabling Future Service Delivery

The delivery of healthcare across the ACT is facing significant workforce challenges, including shortages of skilled healthcare professionals, and difficulties in attracting and retaining staff due to competition with other regions and sectors, particularly the private health sector. These challenges are compounded by an aging workforce and the increasing demand for services driven by the ACT's growing and aging population. Additionally, the need for specialised skills across medical, surgical

³⁵ Li, A., Stanislaus, C. T., Steffens, D., McBride, K. E., Leslie, S., Thanigasalam, R., & Cunich, M. 2024. Prospective cohort study investigating quality of life outcomes following multi-speciality robotic-assisted surgery. *Journal of Minimal Access Surgery*, 20(1), 37–46. Accessed from https://doi.org/10.4103/jmas.jmas_253_22

³⁶ Boccia, S., Ádány, R., Villari, P., Cornel, M. C., De Vito, Corrado., & Pastorino, Roberta. (Eds.). 2021. *Personalised Health Care: Fostering Precision Medicine Advancements for Gaining Population Health Impact* (1st ed. 2021.). Springer International Publishing. Accessed from <https://doi.org/10.1007/978-3-030-52399-2>

and clinical support (radiology, pharmacy and pathology) areas further strains the workforce. These factors contribute to pressure on service delivery, impacting access to care, wait times, and the sustainability of healthcare services within the region.

Other key enablers for workforce development are research, education and training. Expanding the capacity of the health service to participate and undertake research while embedding education and training, which is vital to ongoing education and development of the clinical workforce across medical, nursing and allied health disciplines. Consultation revealed the importance of research and education and training as key strategies to address current workforce challenge and strengthen efforts to attract and retain skilled and high-talent people.

2.8. Consumer and Community Empowerment

A fundamental principle underlying system transformation in health care is respect for patient decisions, values and preferences. Patients are increasingly expecting transparency, access and more tailored and personalised care. Community engagement involves patients and consumers being active caretakers of their own health. Community participation is ultimately concerned with 'working with' rather than 'doing to' people. Integral to people-centred engagement is supporting health literacy. CHS will continue to embed people centred care as 'core business' across all parts of the organisational functioning as well as enable consumers and patients to become involved in the Northside Hospital Project redevelopment process. This will leverage the previous consumer engagement approach utilised for the recent TCH clinical services expansion project. Consumers will also be involved in the co-design of the Future Service Framework process that will be following the CSP development to explore and define new models of care across various clinical specialities/services to inform the Northside Hospital Project.

3. Strategies to Address Demand

This CSP, aligned with ACT government priorities and the CHS Strategic Plan provides the opportunity to transform a key part of CHS to provide more value-based care in future-oriented, resilient facilities that are linked and integrated with primary and community-based services³⁷. NCH infrastructure is inadequate for both the current and forecasted hospital demand to provide high quality care, innovation and to support new models of care.

3.1. Non-Asset, Efficiency and Effectiveness Strategies

Non-asset-based improvements, focusing on optimising resource use and clinical outcomes, are essential given the currently increasing and forecasted patient demand, and budgetary constraints. It is important to note that non-asset solutions are not without investment, as these often rely on increased workforce requirements, physical infrastructure in other settings such as non-admitted spaces, or expanded digital infrastructure to implement.

Process Standardisation

To address current trends, NCH will be required to streamline patient flow, reduce waiting times for surgical and non-admitted services, and eliminating inefficiencies in clinical service delivery and associated processes. Process standardisation has also shown benefits in improving care efficiency while maintaining quality outcomes. This can include clinical redesign of existing services to maximise existing resources and patient care pathways.³⁸

Workforce management is crucial including utilising data analytics to better manage resource allocation across the CHS. This will enable the required composition of services being delivered from NCH and TCH respectively as well as minimise reliance on contracted services to the private health sector. Clinical networks across CHS that utilise the capacity and capability of services across NCH, TCH and UCH will allow for the finite specialist workforce within the public system to deliver care from the right place and the right time.

These strategies underscore a holistic approach to hospital management, emphasising adaptability, strategic alignment, and workforce engagement to improve both clinical and operational outcomes. For NCH, addressing its immediate operational efficiencies are critical to change the ongoing trends particularly related to the elevated length of stay observed which will have influenced base case forecasted demand. The inclusion of scenario models that account for reduced length of stay, shifting of inpatient activity to other care settings and changing patient flows to reflect the changing state of NCH service delivery will be explored further.

Predictive Analytics

The use of data, predictive analytics and scenario planning has become more prominent and needs to continue throughout the redevelopment process. The implementation of the DHR in 2022 will allow CHS to collect, extract and interpret data in new ways to inform service design, demand forecasting and resource allocation. The approach of using real time data informed by clinical stakeholders and the patient experience will enable ongoing efficiency as well as help CHS to anticipate and respond to patient care needs effectively.

³⁷ ACT Government. 2023. Value Base Health Care – ACT Health Forum #1 Report. Accessed from: https://www.act.gov.au/data/assets/pdf_file/0007/2405923/ACT-Health-Forum-Report-November-2023.pdf

³⁸ Walter, JK., Sharma, A. and Harrison, R. 2023. Efficiency Improvement Strategies for Public Health Systems: Developing and Evaluating a Taxonomy in the Australian Healthcare System. *Healthcare* 2023, 11(15), pp. 2177. Accessed from: <https://www.mdpi.com/2227-9032/11/15/2177>

Virtual Hospital and Care Delivery

Another non-asset solution, though required well-consider infrastructure and workforce consideration, includes exploration of a virtual hospital. It enhances accessibility by providing remote care, reducing the need for physical visits, and thus can lower operational costs through considered reduction in physical bed spaces. It is well established that virtual care harnesses both physical and human resources to provide care more efficiently and has become an alternative mode of care delivery. This is becoming imperative as health systems strive to meet the needs of large, diverse patient populations and is true for NCH with its diverse population and projected population growth over the next 10 to 20 years.³⁹

This and other digital service delivery model can support patient care through continuous monitoring and telehealth consultations as well as alleviate the burden on the hospital to relieve resources for critical in-person care. By leveraging digital health technologies, workflows can be streamlined, patient engagement enhanced, and resource utilisation optimised, leading to a more sustainable and patient-centered healthcare system. CHS will continue to explore the required digital models throughout the planning for the new Northside Hospital aligned to the Future Service Framework process, where new and innovative models of care across various specialities will be explored.

Contemporary Models of Care

Models of care focused on delivering healthcare in the home are revolutionising the way services are provided, offering a flexible, patient-centered approach that avoids the need for extensive infrastructure investment. These non-asset solutions leverage existing technology, care teams, and patients' homes to deliver high-quality care directly where people feel most comfortable. These models improve accessibility and outcomes for chronic disease management to post-acute care. At this time, CHS is developing strategic Future Service Frameworks for selected clinical services. It is recommended that detailed models of care with a focus on care delivered in the home. Upon development of these models, tailored implementation strategies supported by implementation science will lead to successful transition toward these contemporary healthcare delivery models.

3.2. Latent Demand Considerations

Latent demand within a health system refers to the unmet needs of a population that haven't been addressed due to limited access to services, long waiting times, or accessing care through private health care providers. So, when a new hospital is commissioned, there is the real potential for this latent demand to emerge. A key consideration is a surge in patient activity by attracting patients who previously could not access care or by those who would have otherwise sought care in the private health system. It is expected that there will be a redistribution of activity from the private sector and to some extent, TCH.

Operational challenges can occur in trying to manage higher than anticipated patient volumes which can then impact scheduling, patient flow, and bed management. This can also place further pressure on the CHS operations and fiscal position by having to manage the increased demand with increased workforce or extending operating hours of particular services such as non-admitted clinics and operating theatres.

Further, the community will likely have high expectations from the new Northside Hospital and if it is unable to meet these expectations due to latent demand, it can lead to dissatisfaction, negative perceptions and have a reputational risk for CHS.

³⁹ Hole, C., Munn, L. and Swick, M. 2021. The Virtual Hospital. JONA: The Journal of Nursing Administration, 51(10), pp. 500-506. Accessed from: doi: 10.1097/NNA.0000000000001054.

Responding to changes in patient flow activity requires careful planning and resource management to ensure that the new hospital can provide high-quality care without being overwhelmed. This may include a phased approach to commissioning services, increased staffing during the go-live period, and extensive consultation with consumers and government.

4. Canberra Health Service Context

CHS delivers services across the ACT providing health care to residents of the ACT and the surrounding Southern NSW region. It is recognised as ACT's largest public health care provider. Figure 3 shows the location of public hospitals, community-based services and walk-in centres across the Territory.

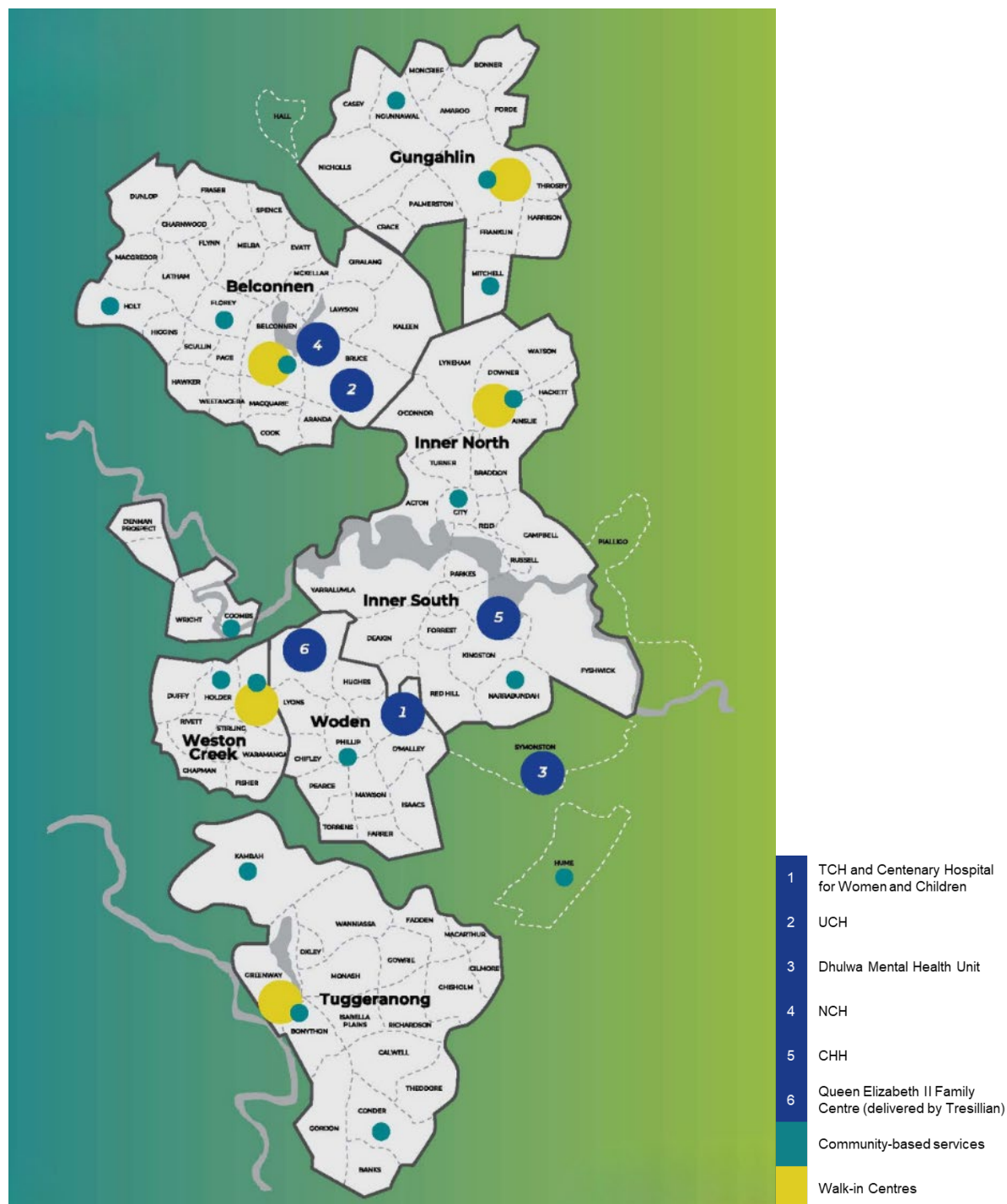


Figure 3: Map of ACT Government funded services. Source: ACT Government, 2022.

The table below represents the facilities and services delivered by CHS as a single and integrated public health system.^{40 41}

Service	Description
TCH and Centenary Hospital for Women and Children	TCH is a tertiary teaching hospital located in Garran and has 670 beds. TCH provides trauma services and most major medical and surgical sub-specialty services. Services provided include medical, surgical, emergency, maternity, paediatrics, specialist outpatient clinics, mental health, critical care, allied health, sexual health, alcohol and drug treatment and other clinical support services.
NCH and CHH	NCH is a 250-bed general and teaching hospital that provides emergency, acute care, elective surgery and generalist inpatient hospital services, as well as maternity and special care nursery, intensive care and coronary care services, medical imaging and pathology and select outpatient services. CHH is a 27-bed hospice providing specialist palliative care through inpatient services, outpatient clinics, community based and specialist outreach services.
University of Canberra Hospital (UCH)	UCH is located in Bruce and has 84 inpatient beds and 75-day places. Services provided include inpatient and day rehabilitation services and sub-acute mental health. The facility also includes the Clinical Education and Research Centre.
Mental Health Services	The Mental Health Service delivers over 30 distinct public mental health services within the ACT. These include inpatient, and community based and provide services to people presenting with different levels of acute mental illness. Adult, adolescent and older persons inpatient units are located at TCH, NCH and UCH, the Dhulwa Mental Health Unit at Symonston, the Gawanggal Mental Health Unit at Bruce and the Eating Disorders Residential Centre at Coombs ⁴² . Services that exist within the community setting include early detection, intervention, and hospital diversion. Adult Community Recovery Service teams (CRS), Child and Adolescent Mental Health Services (CAMHS) and Older Persons Mental Health Services (OPMHS) provide community-based treatment and support services together with primary healthcare networks to consumers and their families. ⁴³
Walk-in Centres	Nurse led Walk-in Centres are located in Belconnen, Dickson, Gungahlin, Tuggeranong and Weston Creek. Services provided include free treatment for minor injuries and illnesses, health advice and information.
Community Health Centres	Community Health Centres provide general and specialist health services and are located in Belconnen, Canberra City, Dickson, Gungahlin, Kambah, Phillip, Weston and Tuggeranong. Services provided include rehabilitation, aged care services, women, youth and children's services, mental health, dental services, allied health and nursing services.
Maternal and Child Health Services	Maternal and Child Health services are located in ACT Government sites at Lanyon, Tuggeranong, Phillip, Narrabundah, Belconnen, Florey, Kambah, West Belconnen, City, Dickson, Gungahlin and Ngunnawal. Services provided include provision of health information and advice on baby and child health and development, breastfeeding, nutrition and feeding, sleep issues, parenting, child safety, behavioural issues and perinatal mental health.
Community Paediatric and Child Health Service	The Community Paediatric and Child Health Service is delivered to children aged between 0 to 16 and is located in Holder. Services provided include assessment, treatment and advice for developmental concerns or disability.
Justice Health Services	Justice Health Services are delivered at the Alexander Maconochie Centre in Hume and Bimberi Youth Justice Centre in Mitchell. Services provided include medical, dental and mental health care for people in custody, including youth detention.
Queen Elizabeth II Family Centre	Queen Elizabeth II Family Centre is located in Curtin, has approximately 13 beds and is delivered by Tresillian with governance residing with ACTHD. Services provided include a residential program for families in postnatal and early childhood experiencing health and behavioural difficulties.

Table 2: Canberra Health Services – Description of Services. Source: ACT Government, 2022 ACT Health Services Plan 2022-2030. Accessed August 2024.

⁴⁰ Canberra Health Services. 2024. Canberra Health Services Strategic Plan 2024 – 2029. Accessed from:

https://www.canberrahealthservices.act.gov.au/data/assets/file/0005/1933178/CHS_Strategic-Plan-2024-2029_DIGITAL-FA.pdf

⁴¹ ACT Government. 2022. ACT Health Services Plan 2022-2030. Accessed from:

https://www.act.gov.au/data/assets/pdf_file/0018/2250441/ACT-Health-Services-Plan_2022-to-2030.pdf

⁴² Canberra Health Services. 2024. Model of Care – Eating Disorders Residential Treatment Centre. Accessed from:

https://www.canberrahealthservices.act.gov.au/data/assets/pdf_file/0010/2515870/Eating-Disorders-Residential-Treatment-Centre-Model-of-Care-V2.1_Signed.pdf

⁴³ Canberra Health Services. 2022. Model of Care Adult Acute Mental Health Services Inpatient Units Model of Care. Accessed from:

https://www.canberrahealthservices.act.gov.au/data/assets/pdf_file/0004/2430967/Adult-Acute-Mental-Health-Services-Model-of-Care.pdf

Appendix 1 provides the current role delineation level (RDL) for services provided at TCH, UCH and NCH.

ACTHD utilises the NSW Health Guide to the Role Delineation of Clinical Services to describe services across the three major hospitals within the Territory.⁴⁴ The purpose of role delineation is to provide a framework that describes the minimum support services, workforce and other requirements for clinical services to be delivered safely. It delineates the level of clinical services, not hospitals or health facilities as a whole, to describe the respective complexity of services delivered at each respective facility.⁴⁵

5. Private Health Service Providers

ACT has a comprehensive private hospital and health service sector, which the ACTHD contract services from in order to manage demand within the public sector. The figure below represents the approximate locations of the private hospitals and procedural centres within ACT, outlined in Table 2. The list of specialities provided at each hospital and centre, and the indicative number of practitioners identified is in Appendix 2.

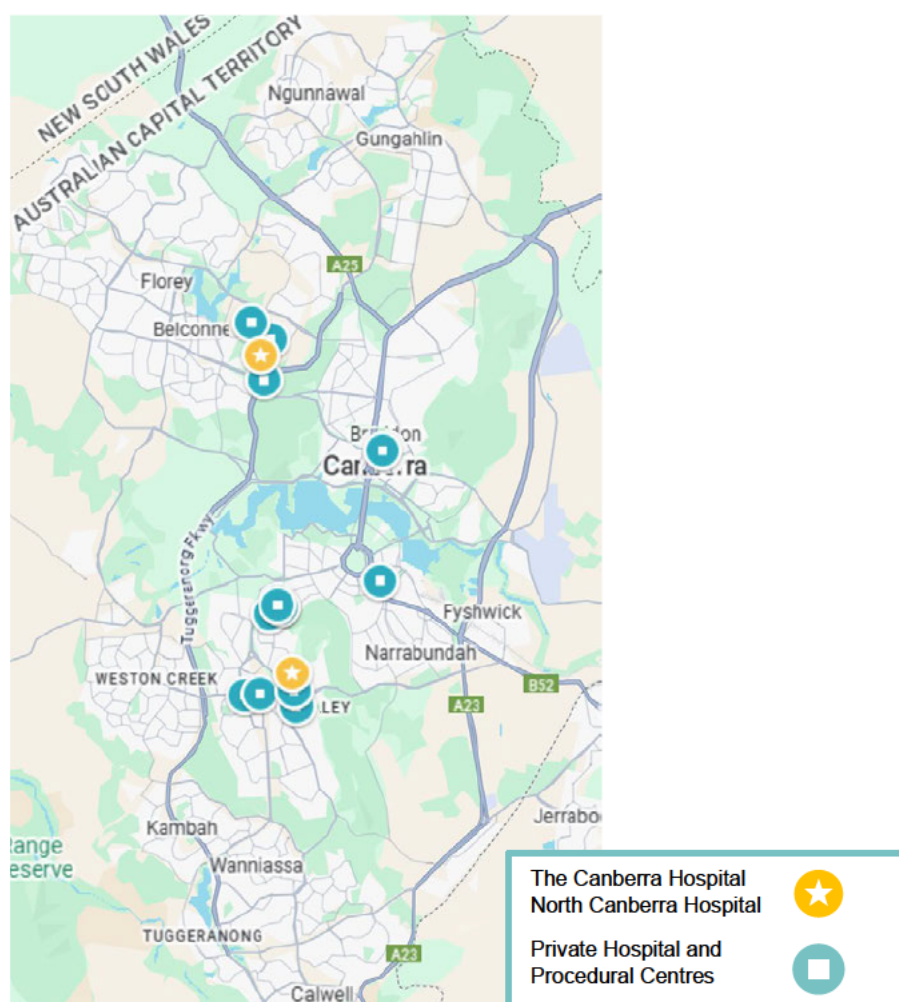


Figure 4: Map of Private Hospitals and Procedural Centres. Sources: healthshare.com.au, 2024 – accessed from: <https://www.healthshare.com.au/hospitals/hospitals-in-act/>; Google Maps, 2024.

⁴⁴ ACT Government. 2022. ACT Health Services Plan 2022-2030. Accessed from: https://www.act.gov.au/data/assets/pdf_file/0018/2250441/ACT-Health-Services-Plan_2022-to-2030.pdf

⁴⁵ NSW Ministry of Health. 2024. NSW Health Guide to the Role Delineation of Clinical Services. Accessed from: <https://www.health.nsw.gov.au/services/Publications/role-delineation-of-clinical-services.pdf>

Region	Name	Location
Northside	Calvary Bruce Private Hospital	Bruce
	Canberra Surgicentre	Braddon
	Icon Cancer Centre Canberra	Bruce
ACT South	ACT Endoscopy	Deakin
	Barton Private Hospital	Barton
	Brindabella Endoscopy Centre	Garran
	Calvary John James Hospital	Deakin
	Canberra Imaging Group ⁴⁶ (Flagship in Deakin)	Deakin
	Canberra Microsurgery	Phillip
	Canberra Private Hospital	Deakin
	Canberra Region Neurology and Pain Centre ⁴⁷	Phillip
	Genea Canberra	Deakin
	Mugga Wara Endoscopy Centre ⁴⁸	Garran
	National Capital Private Hospital	Garran

Table 3: Private Hospital and Health Service Providers within ACT. Source: [healthshare.com.au](https://www.healthshare.com.au), 2024. Accessed from: <https://www.healthshare.com.au/hospitals/hospitals-in-act/>. Excludes private medical imaging services that deliver diagnostic services only.

As observed, private hospital and procedural services are heavily concentrated around or in close proximity to TCH and NCH. The majority of private services are located in the South Canberra region, despite the majority of the population residing in the ACT North region with the region projected to increase by 27% to 343,636 people by 2031 and by 55.5% to 420,709 people by 2041.

This has less of a challenge for physically accessing services, given that the private sector delivers specialist services that people are willing to travel for and the geographic proximity of the Territory. However, access is a challenge given that there are out of pocket expenses associated with accessing private health services including private allied health and diagnostic services and the recent cost of living crisis further exacerbates this. It has been documented that services and practitioners are free to set their fees if Medicare fees are set at low levels, further impacting the equity of access issue. This is further compounded by workforce shortages, higher cost of delivering care in regional centres and specialists charging more than three times the Medicare Benefits Scheme (MBS) rate for common procedures.⁴⁹

For CHS, engaging and contracting services with the private sector enables patients to receive the care and services they require, however this further impacts on operational sustainability, has fiscal implications and contributes to the existing fragmented and uncoordinated care pathways that have been outlined throughout stakeholder consultation.

⁴⁶ Canberra Imaging Group has centres with ACT at Belconnen, Bruce, Deakin, Dickson, Garran, Gungahlin and Wanniasa. It also has established centres at Goulburn and Queanbeyan, within NSW.

⁴⁷ Also has a centre at the Ives Complex in Bruce

⁴⁸ Located within National Capital Private Hospital

⁴⁹ Angeles, MR., Crosland, P. and Hensher, M. 2023. Challenges for Medicare and universal health care in Australia since 2000. Medical Journal of Australia, 218(7). Accessed from: <https://www.mja.com.au/journal/2023/218/7/challenges-medicare-and-universal-health-care-australia-2000>

6. North Canberra Hospital Context



Figure 5: North Canberra Hospital

NCH is a 250-bed public hospital located in Bruce. The NCH was previously referred to as 'Calvary Public Hospital Bruce' and in July 2023, Calvary Public Hospital Bruce transitioned across to CHS and is now known as NCH.

Services at NCH are predominately at Role Delineation Level 4 and include emergency medical, surgical, maternity and sub-acute services. The following services are currently provided by NCH:

- Emergency Department.
- Critical Care including Intensive Care and Coronary Care.
- Medical Services including General Medicine, Cardiology, Neurology, Geriatrics, Respiratory and Endocrinology.
- Surgical Services including General Surgery, Orthopaedics, Breast Surgery, Gynaecology, Urology and Ophthalmology.
- Maternity Services including Special Care Nursery.
- Palliative Care at CHH.
- Mental Health including Adult and Older Persons inpatient units.
- Medical Imaging including X-ray, Ultrasound, CT and MRI (limited contracted service).
- Ambulatory Care and Outpatient Services including Care Closer to Home Services.
- Allied Health including Physiotherapy, Occupational Therapy, Dietetics, Social Work, Psychology, Speech Pathology, Aboriginal Liaison and Pastoral and Spiritual Care.
- Pharmacy.

7. Catchment Profile

At present, the primary catchment for the Northside Hospital is the Belconnen, Gungahlin, Molonglo and North Canberra regions⁵⁰. It is acknowledged that residents from outside the Territory, in particular from Southern NSW comprising of Queanbeyan, Young – Yass, Goulburn – Mulwaree, South Coast and Snowy Mountains regions, currently access NCH services.

7.1 Population Profile

Between 2016 and 2021, the population for ACT has increased by 14.4% with those aged over 65 years having the highest growth rate compared with other ages, demonstrating the aging of the population overall with 24.5% growth. The population aged between 5 and 14 years increased by 18% combined, over the five-year period.

Age	Australian Capital Territory, 2016	Australian Capital Territory, 2021	Variance	Growth 2016-2021
0-4 years	26,796	26,680	-116	-0.4%
5-9 years	25,449	29,162	3,713	14.6%
10-14 years	22,233	27,097	4,864	21.9%
15-19 years	24,506	26,348	1,842	7.5%
20-24 years	31,430	34,261	2,831	9.0%
25-29 years	32,485	39,282	6,797	20.9%
30-34 years	33,630	38,468	4,838	14.4%
35-39 years	30,188	37,236	7,048	23.3%
40-44 years	28,213	32,148	3,935	13.9%
45-49 years	26,554	29,284	2,730	10.3%
50-54 years	24,433	26,925	2,492	10.2%
55-59 years	22,359	23,926	1,567	7.0%
60-64 years	19,147	21,481	2,334	12.2%
65-69 years	17,287	18,513	1,226	7.1%
70-74 years	12,167	17,162	4,995	41.1%
75-79 years	8,522	11,749	3,227	37.9%
80-84 years	5,837	7,598	1,761	30.2%
85 years and over	6,159	7,181	1,022	16.6%
Total	397,395	454,501	57,106	14.4%

Table 4: Current Population for ACT, 2022 to 2041. Source: ABS Census, 2021. Accessed August 2024.

The overall ACT population is projected to significantly increase with a total population estimate of 619,876 people by 2041, equating to a projected increase of 35.5%, an additional 162,311 people⁵¹.

In 2022, the population of the Northside catchment (ACT North) is 270,506 people, accounting for 59.1% of total number of people in the ACT. By 2031, an additional 73,130 people are projected to be residing in the Northside catchment. By 2041, the projected increase will total 150,203 people, representing a 55.5% increase from 2022.

⁵⁰ Note SA3 groupings consistent with the ABS groupings and population projections, have been used. Refer to Appendix 2 for a description on the SA regions and the makeup of the regions identified as the primary catchment in this plan.

⁵¹ ACT Government. Latest ACT Population Projections. Accessed from: <https://catalogue.data.infrastructure.gov.au/dataset/rdh-latest-act-population-projections>

All regions within the Northside catchment are projected to increase considerably by 2031 and 2041, compared to the Southside region of the ACT. The largest projected increase is observed in Molonglo with this region projecting an increase of 21,020 people by 2031 and 55,492 by 2041.

Region	2021/22	2023/24	2025/26	2030/31	2035/36	2040/41	Growth 2022 to 2031		Growth 2022 to 2041	
							No.	%	No.	%
Belconnen	105,976	108,179	111,884	121,436	129,266	138,195	15,460	14.6%	32,219	30.4%
Gungahlin	90,383	96,418	100,954	106,723	111,214	116,451	16,340	18.1%	26,068	28.8%
Molonglo	12,102	14,460	18,287	33,122	51,692	67,594	21,020	173.7%	55,492	458.5%
North Canberra	62,045	66,089	70,811	82,355	90,511	98,469	20,310	32.7%	36,424	58.7%
ACT North Total	270,506	285,146	301,936	343,636	382,683	420,709	73,130	27.0%	150,203	55.5%
ACT South Total	187,059	189,034	191,306	195,157	196,548	199,167	8,098	4.3%	12,108	6.5%
ACT Total	457,565	474,180	493,242	538,793	579,231	619,876	81,228	17.8%	162,311	35.5%

Table 5: Population Projections by Northside regions, 2022 to 2041. Source: ACT Government, 2023 Latest ACT Population Projections. Accessed August 2024.

Overall across the ACT, there will be an additional 15,485 children (aged 0-15 years) by 2031 and an additional 30,157 children by 2041, representing a 33.7% increase with 63.6% projected to be living across the Northside regions.

For those aged over 75 years, there is a projected increase of 34.4% representing 9,697 people by 2031 and a 56.0% increase (15,769 people) by 2041. It is estimated that by 2041, 58.9% will reside in the Northside of the ACT, compared to 41.1% in the ACT South areas.

	Age Groups	2021/22	2023/24	2025/26	2030/31	2035/36	2040/41	Growth 2022 to 2031		Growth 2022 to 2041	
								No.	%	No.	%
ACT North	0 - 15	53,581	56,732	59,674	66,790	73,936	80,740	13,209	24.7%	27,159	50.7%
	16 - 49	147,969	154,220	162,569	183,147	201,417	219,441	35,178	23.8%	71,472	48.3%
	50 - 64	38,184	41,029	44,019	51,783	59,043	65,893	13,599	35.6%	27,709	72.6%
	65 - 74	17,642	18,341	19,197	21,891	25,253	28,772	4,249	24.1%	11,130	63.1%
	75+	13,130	14,824	16,477	20,025	23,034	25,863	6,895	52.5%	12,733	97.0%
	Total	270,506	285,146	301,936	343,636	382,683	420,709	73,130	27.0%	150,203	55.5%
ACT South	0 - 15	35,981	36,815	37,430	38,257	38,552	38,979	2,276	6.3%	2,998	8.3%
	16 - 49	83,551	84,879	86,736	89,596	90,418	92,120	6,045	7.2%	8,569	10.3%
	50 - 64	34,722	33,823	32,900	32,339	32,673	33,531	-2,383	-6.9%	-1,191	-3.4%
	65 - 74	17,764	17,486	17,480	17,122	16,633	16,460	-642	-3.6%	-1,304	-7.3%
	75+	15,041	16,031	16,760	17,843	18,272	18,077	2,802	18.6%	3,036	20.2%
	Total	187,059	189,034	191,306	195,157	196,548	199,167	8,098	4.3%	12,108	6.5%
ACT	0 - 15	89,562	93,547	97,104	105,047	112,488	119,719	15,485	17.3%	30,157	33.7%
	16 - 49	231,520	239,099	249,305	272,743	291,835	311,561	41,223	17.8%	80,041	34.6%
	50 - 64	72,906	74,852	76,919	84,122	91,716	99,424	11,216	15.4%	26,518	36.4%
	65 - 74	35,406	35,827	36,677	39,013	41,886	45,232	3,607	10.2%	9,826	27.8%
	75+	28,171	30,855	33,237	37,868	41,306	43,940	9,697	34.4%	15,769	56.0%
	Total	457,565	474,180	493,242	538,793	579,231	619,876	81,228	17.8%	162,311	35.5%

Table 6: Population Projections by Age Cohorts, 2022 to 2041. Source: ACT Government, 2023 Latest ACT Population Projections. Accessed August 2024.

Residents from outside the ACT, predominately from the Southern NSW regions, access health services at NCH, acting as a secondary catchment. In 2021, the region had 238,781 people and is projected to grow to 257,849, representing an 8.0% growth. The population aged 75 and over is projected to grow by 54.4% by 2031.

By 2041, the Southern NSW region is projected to grow by 16.9%, representing 279,181 people. The trend of the elderly population remains highest at 100.8%, doubling by 2041 to account for 44,052 people by 2041. In 2023, 11.0% of care at NCH was provided to residents of Southern NSW. Of total NCH activity across all care types, 17.8% for 65 to 74 years and 19.7% for 75+ thus the increasing aging population at Southern NSW especially for those aged over 75 will need to be considered.

	2021/22	2023/24	2025/26	2030/31	2035/36	2040/41	Growth 2021-2031	Growth 2021-2041
0-14	41,237	41,849	42,106	42,428	43,076	43,979	2.9%	6.7%
15-49	92,549	91,326	93,229	98,087	101,021	102,983	6.0%	11.3%
50-64	51,795	50,412	49,848	49,082	50,474	53,269	-5.2%	2.8%
65-74	31,263	31,660	32,772	34,392	34,673	34,897	10.0%	11.6%
75+	21,937	25,470	27,920	33,860	39,690	44,052	54.4%	100.8%
Southern NSW Total	238,781	240,718	245,875	257,849	268,935	279,181	8.0%	16.9%

Table 7: Population Projections for Southern NSW by Age, 2021-2041. Source: ABS, 2021; NSW Department of Planning, Housing and Infrastructure, 2024. Accessed August 2024.

7.2 Socio-Economic and Health Status

Socio-Economic Status

The evidence is clear that people with lower socioeconomic indicators including education attainment, household income, workforce participation, occupation and housing have poorer health outcomes.^{52 53 54}

Overall, data on the socioeconomic status of the Northside region indicates a high level of economic advantage based on employment rates, educational attainment and income. The rates for Northside are comparable to the broader ACT region, with a slightly higher advantage across educational attainment and employment. Appendix 3 provides a detailed table of demographic and socio-economic indicators across the Northside primary catchment and ACT.

The Northside region of the ACT demonstrates a diverse and varied socioeconomic profile, reflecting both strengths and challenges compared to the broader ACT area. Population data indicates a slightly higher proportion of young families and working-age adults, suggesting a dynamic community with a robust labour force. However, housing affordability remains a concern, with 40% of Northside households paying off mortgages and a higher proportion of Northside households renting and earning less than \$650 per week. Educational attainment in the Northside region aligns closely with ACT averages, though certain areas see lower rates of postgraduate qualifications, which may influence employment opportunities.

The region's cultural diversity is notable, with 27% of Northside residents born outside Australia compared to 23% for all ACT, and 29% of Northside residents speak a language other than English at home, compared to 25% for the ACT.

Northside residents face challenges, particularly with higher reported rates of chronic conditions such as asthma and diabetes, which could impact long-term community well-being. In 2021, the ABS provided an opportunity for respondents to report on long-term health conditions. Of total responses from Northside residents, 41% indicated a person had one or more health conditions, with asthma, cancer, diabetes, heart disease and mental health conditions being consistently reported slightly above the ACT average

7.3 Health Status

ABS Census data for 2021 reported⁵⁵ that people in the Northside region (Belconnen, Gungahlin, Molonglo and North Canberra) report having a higher proportion of the following long-term health conditions, when compared to ACT overall:

⁵² Frasquilho et al. 2016. Mental health outcomes in times of economic recession: a systematic literature review. BMC Public Health. Accessed from: DOI 10.1186/s12889-016-2720-y

⁵³ De Jager, E., Gunnarsson, R. and Ho, YH. 2022. Disparities in surgical outcomes for low socioeconomic status patients in Australia. ANZ Journal of Surgery, 92(5), 1026-1032. Accessed from: doi: 10.1111/ans.17675

⁵⁴ Finegan et al. 2018. Associations between socioeconomic status and psychological therapy outcomes: A systematic review and meta-analysis. Depression and Anxiety, 35(6), 560-573. Accessed from: DOI: 10.1002/da.22765

⁵⁵ Respondents had the option to record multiple long-term health conditions therefore the sum of total responses count will not equal the total person count. Source: ABS, 2021.

- Mental health conditions including depression and anxiety
- Arthritis
- Diabetes
- Heart disease

	Belconnen	Gungahlin	Molonglo	North Canberra	Northside		ACT		Comparison
	No.	No.	No.	No.	No.	%	No.	%	
Mental health conditions (including depression or anxiety)	11,597	7,196	930	7,213	26,936	12.1	45,517	10.0	Á
Asthma	10,380	6,943	801	205	18,329	8.2	40,839	9.0	â
Arthritis	9,122	4,467	388	3,755	17,732	8.0	35,106	7.2	á
Diabetes (excluding gestational diabetes)	4,545	3,045	293	1,497	9,380	4.2	17,501	3.9	á
Heart disease (including heart attack or angina)	3,686	1,692	127	1,464	6,969	3.1	14,098	3.1	-
Cancer (including remission)	3,140	1,409	116	1,375	6,040	2.7	12,182	2.7	-
Lung condition (including COPD or emphysema) (b)	1,626	690	46	684	3,046	1.4	5,998	1.3	-
Kidney disease	1,110	557	58	415	2,140	1.0	4,194	0.9	-
Stroke	842	399	24	391	1,656	0.7	3,237	0.7	-
Dementia (including Alzheimer's)	601	165	11	424	1,201	0.5	2,634	0.6	-
Any other long-term health condition(s)(c)	10,938	7,097	842	5,725	24,602	11.1	44,128	9.7	á
No long-term health condition(s)	62,906	59,575	8,242	37,144	167,867	75.5	277,197	61.0	á

Table 8: Long Term Health Conditions by Residents for the Belconnen, Gungahlin, Molonglo, North Canberra regions, Northside primary catchment and ACT. Source: ABS Census, 2021. Accessed August 2024.

Recognising that the highly-reported health conditions above are associated with chronic disease and ongoing management necessitating long-term and continuous care, this places a heavy burden on healthcare systems. Planning needs to take into consideration the growing prevalence of chronic illnesses observed in line with growing populations in order to guarantee that service models, infrastructure, workforces, and resources are distributed appropriately. Specifically, acknowledging that good chronic disease management supported by primary practice can reduce presentations and admissions to the hospital. Models of care focused on integrated tertiary and primary care approaches will further support current and future demand management.

7.4 Culturally and Linguistically Diverse Communities

The cultural diversity across the Northside catchment is notable, with 27% of Northside residents born outside Australia compared to 23% for all ACT, and 29% of Northside residents speak a language other than English at home, compared to 25% for the ACT.

7.5 First Nations Communities

Across the Northside catchment, 4,611 First Nations people resided, accounting for 1.7% of the total current Northside population. Of the Northside First Nations population, 47.9% reside within Belconnen.

For the Northside Aboriginal and Torres Strait Islander community, the median age is younger at 24 years compared to 32 years for non-Indigenous communities. With only 14% earning more than \$2,000 per week compared to 21% of all Northside people, this economic disparity can further exacerbate already present health inequity particularly related to access to non-public health services.

Over half of the community reported having a long-term health condition, with mental health, asthma, arthritis, diabetes and heart disease being highly reported.

8. Canberra Health Services Current Activity

Overall, in 2022/23, across the three hospitals within CHS including CHH, there was a total of 100,207 inpatient separations⁵⁶ and 423,941 bed days. This represented a 6.0% growth in separations and 17.1% growth in bed days compared to 2018/19, demonstrating an increase in health service utilisation for ACT hospitals.

It is important to note that UCH is a sub-acute facility, providing inpatient and day rehabilitation and sub-acute mental health services which lead to longer lengths of stay. This also applies to CHH, which delivers inpatient palliative care in the sub-acute setting. Thus, both facilities are characterised by smaller separations and large bed day volume proportions when compared to TCH and NCH.

Hospital/Facility	Values	2018-19	2019-20	2020-21	2021-22	2022-23	Variance	Growth 2019-2023
TCH	Seps	64,081	63,045	68,369	66,665	67,658	3,577	5.6%
	Bed days	251,960	250,284	256,964	257,993	271,019	19,059	7.6%
NCH	Seps	28,232	28,011	33,423	25,986	30,588	2,356	8.3%
	Bed days	81,002	84,218	91,575	84,674	95,969	14,967	18.5%
UCH	Seps	1,836	2,148	1,667	1,522	1,501	-335	-18.2%
	Bed days	23,237	36,792	38,097	43,632	50,970	27,733	119.3%
CHH	Seps	401	388	357	342	460	59	14.7%
	Bed days	5,852	6,204	5,651	5,150	5,983	131	2.2%
Total Separations		94,550	93,592	103,816	94,515	100,207	5,657	6.0%
Total Bed days		362,051	377,498	392,287	391,449	423,941	61,890	17.1%

Table 9: Separations and Bed days by ACT Public Hospitals and CHH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Excludes Unqualified Neonates, Chemotherapy and Renal Dialysis SRGs and Organ Procurement and Unknown Care Types, Antenatal and Postnatal Admissions SRGs.

	Values	2018-19	2019-20	2020-21	2021-22	2022-23	Variance	Growth 2019-2023
Acute Hospitals	Seps	92,313	91,056	101,792	92,651	98,246	5,933	6.4%
	Bed days	332,962	334,502	348,539	342,667	366,988	34,026	10.2%
Sub-Acute Hospitals	Seps	2,237	2,536	2,024	1,864	1,961	-276	-12.3%
	Bed days	29,089	42,996	43,748	48,782	56,953	27,864	95.8%
Total Separations	Seps	94,550	93,592	103,816	94,515	100,207	5,657	6.0%
Total Bed days	Bed days	362,051	377,498	392,287	391,449	423,941	61,890	17.1%

Table 10: Separations and Bed days by Acute and Sub-Acute Activity across CHS Hospitals, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Includes TCH, NCH, UCH and CHH. Excludes Unqualified Neonates, Chemotherapy and Renal Dialysis SRGs and Organ Procurement and Unknown Care Types

In 2022/23, acute separations accounted for 94.1% of total separations with 50.0% of inpatient acute separations being overnight with 44.1% of total activity same day. Between 2018/19 and 2022/23, acute overnight activity remained consistent with a 0.6% change while same day activity increased by 12.3%. Sub-acute separations accounted for 5.9% of total CHS separations and 25.4% of total CHS bed days, indicative of the higher ALOS associated with sub-acute care. Appendix 4 presents a detailed table of separations and bed days by hospital, stay type and care type.

⁵⁶ In 2022/23, there was a substantial increase in antenatal admissions for both TCH and NCH, with 4,302 same days separations reported compared to 740 in 2021/22. Postnatal admission separations exhibited similar trend with 248 separations in 2022/23 for NCH and TCH compared to 76 separations in 2021/22. Where acute separations are reported, antenatal and postnatal ESRR activity was omitted due to the unrealistic skew of the activity trend between 2018/19 and 2022/23.

Hospital/ Facility	Stay Type	2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth 2019-2023
TCH	Overnight	39,344	38,501	40,114	37,617	40,650	1,306	3.3%
	Same Day	24,737	24,544	28,255	29,048	27,008	2,271	9.2%
	TCH Total	64,081	63,045	68,369	66,665	67,658	3,577	5.6%
NCH	Overnight	14,343	14,079	15,782	13,668	14,488	145	1.0%
	Same Day	13,889	13,932	17,641	12,318	16,100	2,211	15.9%
	NCH Total	28,232	28,011	33,423	25,986	30,588	2,356	8.3%
UCH	Overnight	905	1,362	1,202	1,225	1,267	362	40.0%
	Same Day	931	786	465	297	234	-697	-74.9%
	UCH Total	1,836	2,148	1,667	1,522	1,501	-335	-18.2%
CHH	Overnight	388	375	343	333	442	54	13.9%
	Same Day	13	13	14	9	18	5	38.5%
	CHH Total	401	388	357	342	460	59	14.7%
Total Overnight Separations		54,980	54,317	57,441	52,843	56,847	1,867	3.4%
Total Same Day Separations		39,570	39,275	46,375	41,672	43,360	3,790	9.6%
Total Separations		94,550	93,592	103,816	94,515	100,207	5,657	6.0%

Table 11: Separations by Stay Type and ACT Public Hospitals and CHH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Excludes Unqualified Neonates, Chemotherapy and Renal Dialysis SRGs and Organ Procurement and Unknown Care Types, Antenatal and Postnatal Admissions SRGs.

Over the past five years, ALOS has remained relatively stable at TCH, while an increasing trend has been observed for NCH. This could be related as outlined during stakeholder consultation that NCH has been caring for an increasing volume of long-stay patients, who are awaiting nursing home placement or transition to UCH for ongoing sub-acute care. Further analysis revealed that in 2022/23, 1,248 separations incurred a length of stay greater than 15 days, accounting for 29,315 bed days. This represented 35% of total bed days for NCH in 2022/23.

As previously noted, the sub-acute care delivery undertaken at UCH and CHH is representative of their respective long ALOS. However, it is noted that the decrease in ALOS at CHH may be associated with increasing community based palliative care service delivery and the desire for patients to remain at home longer while under the care of the palliative care team, which was noted during consultation.

Hospital/Facility		2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth
TCH	Seps	40,140	39,298	40,848	38,305	41,622	1,482	3.7%
	Bed days	229,171	227,608	230,620	231,279	246,842	17,671	7.7%
	ALOS	5.7	5.8	5.6	6.0	5.9	0.2	3.9%
NCH	Seps	14,677	14,361	16,138	13,983	15,013	336	2.3%
	Bed days	67,748	70,895	74,678	72,991	80,930	13,182	19.5%
	ALOS	4.6	4.9	4.6	5.2	5.4	0.8	16.8%
UCH	Seps	905	1,362	1,202	1,225	1,267	362	40.0%
	Bed days	22,306	36,006	37,632	43,335	50,736	28,430	127.5%
	ALOS	24.6	26.4	31.3	35.4	40.0	15.4	62.5%
CHH	Seps	388	375	343	333	442	54	13.9%
	Bed days	5,839	6,191	5,637	5,141	5,965	126	2.2%
	ALOS	15.0	16.5	16.4	15.4	13.5	-1.6	-10.3%
Total Separations		56,110	55,396	58,531	53,846	58,344	2,234	4.0%
Total Bed days		325,064	340,700	348,567	352,746	384,473	59,409	18.3%

Table 12: Overnight Only Separations, Bed days and ALOS by ACT Public Hospitals and CHH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Excludes Unqualified Neonates, Chemotherapy and Renal Dialysis SRGs and Organ Procurement and Unknown Care Types, Antenatal and Postnatal Admissions SRGs

Analysis of where residents access services across TCH and NCH indicates local access is occurring within the ACT. In 2022/23, 45% of TCH activity was from ACT South residents, reflecting the tertiary nature of this hospital for the ACT. And, 74% of NCH activity was from ACT North residents consistent with the role of the facility. Acknowledging the historical activity flows of residents from Southern NSW due to the proximity of town centres such as Queanbeyan and Yass, 19% of care at TCH and 13% of care at NCH was delivered to residents from NSW.

Hospital/ Facility	Area of Residence	2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth 2019-2023	2022/23 Proportion
TCH	ACT North	18,275	18,003	19,800	19,706	18,739	464	2.5%	27.7%
	ACT South	29,239	28,995	30,802	30,751	30,876	1,637	5.6%	45.6%
	Southern NSW	13,650	13,326	14,915	13,930	13,203	-447	-3.3%	19.5%
	Interstate Other	1,175	1,199	1,171	831	3,113	1,938	164.9%	4.6%
	NSW Other	1,742	1,522	1,681	1,447	1,727	-15	-0.9%	2.6%
	Total	64,081	63,045	68,369	66,665	67,658	3,577	5.6%	100.0%
NCH	ACT North	21,017	20,927	24,902	18,704	22,475	1,458	6.9%	73.5%
	ACT South	3,325	3,215	3,914	3,523	3,931	606	18.2%	12.9%
	Southern NSW	3,114	3,126	3,681	3,298	3,420	306	9.8%	11.2%
	Interstate Other	403	423	560	188	347	-56	-13.9%	1.1%
	NSW Other	373	320	366	273	415	42	11.3%	1.4%
	Total	28,232	28,011	33,423	25,986	30,588	2,356	8.3%	100.0%
UCH	ACT North	769	834	834	577	559	-210	-27.3%	37.2%
	ACT South	781	978	639	635	653	-128	-16.4%	43.5%
	Southern NSW	258	302	169	261	271	13	5.0%	18.1%
	Interstate Other	15	20	22	39	11	-4	-26.7%	0.7%
	NSW Other	13	14	3	10	7	-6	-46.2%	0.5%
	Total	1,836	2,148	1,667	1,522	1,501	-335	-18.2%	100.0%
CHH	ACT North	172	173	137	152	195	23	13.4%	42.4%
	ACT South	187	182	191	155	218	31	16.6%	47.4%
	Southern NSW	40	31	25	34	42	2	5.0%	9.1%
	Interstate Other	1	1	1	1	1	0	0.0%	0.2%
	NSW Other	1	1	3		4	3	300.0%	0.9%
	Total	401	388	357	342	460	59	14.7%	100.0%

Table 13: Separations by Area of Residence and ACT Public Hospitals and CHH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Excludes Unqualified Neonates, Chemotherapy and Renal Dialysis SRGs and Organ Procurement and Unknown Care Types

Table 14 shows the ACT North Resident patient flow across CHS. For TCH, there has been a 1.9% annual growth for paediatric patients between 2018/19 and 2022/23. While NCH also saw an increase in ACT North paediatric patients from 2018/19. Noting there are no paediatric inpatient services at NCH, it can be assumed that this cohort was predominately cared for within the ED Short Stay Unit with NCH ED, while likely awaiting treatment and/or transfer to TCH for further inpatient care. Consistent with the notion that older people utilise health services more, and tend to have complex care needs, there was growth in activity for this cohort of ACT North residents at both TCH and NCH.

The declining trend of ACT North Residents at UCH is consistent with clinical consultation that indicated difficulties in accessing placement at UCH meaning non-acute patients are awaiting transfer within the acute beds.

Hospital/ Facility	Age	2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth 2019-2023	CAGR 2019-2023
TCH	0-15	3,557	3,372	3,664	3,442	3,842	285	8.0%	1.9%
	16-49	8,420	8,170	8,888	9,092	8,284	-136	-1.6%	-0.4%
	50-64	2,709	2,826	3,097	3,219	2,611	-98	-3.6%	-0.9%
	65-74	1,629	1,767	1,974	1,835	1,749	120	7.4%	1.8%
	75+	1,960	1,868	2,177	2,118	2,252	292	14.9%	3.5%
	Total	18,275	18,003	19,800	19,706	18,738	463	2.5%	0.6%
NCH	0-15	734	814	1,126	810	1,019	285	38.8%	8.5%
	16-49	8,783	9,010	10,958	7,860	9,504	721	8.2%	2.0%
	50-64	3,546	3,471	4,238	3,239	3,885	339	9.6%	2.3%
	65-74	3,119	3,001	3,421	2,639	2,974	-145	-4.6%	-1.2%
	75+	4,834	4,629	5,159	4,156	5,093	259	5.4%	1.3%
	Total	21,016	20,925	24,902	18,704	22,475	1,459	6.9%	1.7%
UCH	16-49	210	191	142	142	119	-91	-43.3%	-13.2%
	50-64	64	114	250	115	117	53	82.8%	16.3%
	65-74	205	154	112	58	86	-119	-58.0%	-19.5%
	75+	290	375	330	262	237	-53	-18.3%	-4.9%
	Total	769	834	834	577	559	-210	-27.3%	-7.7%
CHH	16-49	9	16	4	10	11	2	22.2%	5.1%
	50-64	43	43	26	24	23	-20	-46.5%	-14.5%
	65-74	32	36	39	57	47	15	46.9%	10.1%
	75+	88	78	68	61	114	26	29.5%	6.7%
	Total	172	173	137	152	195	23	13.4%	3.2%

Table 14: Separations for ACT North Resident by age group at ACT Public Hospitals, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Excludes Unqualified Neonates, Chemotherapy and Renal Dialysis SRGs and Organ Procurement and Unknown Care Types

In the ACT, TCH and NCH also provide emergency department services to residents across ACT and the surrounding regions. In 2022/23, TCH accounted for 61% of all ED presentations, representative of its tertiary role and being the Territory's trauma centre and NCH accounted for the remaining 39% of total ED presentations. Over the past five years, ED presentations across CHS have shown a declining trend, reflecting the impact of the COVID pandemic and expansion of walk-in services with the declining trend attributed to presentations for triage categories 3 and 4.

Table 15 shows that while there has been a declining trend among most age groups, there is an increasing trend for people aged 50 to 64 years and over 75 years presenting to either TCH or NCH. This is consistent with the aging of the population observed.

Hospital/ Facility	Age Group	2018/19	2019/20	2020/21	2021/22	2022/23	Proportion 2022/23	Variance	Growth
TCH	0-15	23,226	20,460	21,865	19,974	22,522	25%	-704	-3.0%
	16-49	38,600	37,428	40,622	38,017	36,423	41%	-2,177	-5.6%
	50-64	11,792	11,954	12,848	12,164	12,239	14%	447	3.8%
	65-74	7,284	7,470	7,833	7,138	7,201	8%	-83	-1.1%
	75+	9,917	10,074	10,255	9,646	10,864	12%	947	9.5%
	(blank)	-	-	-	-	1	0%	1	-
NCH	TCH Total	90,819	87,386	93,423	86,939	89,250	100%	-1,569	-1.7%
	0-15	10,923	8,784	9,798	8,716	9,576	17%	-1,347	-12.3%
	16-49	29,095	27,373	31,184	29,852	27,714	49%	-1,381	-4.7%
	50-64	7,439	7,001	8,101	7,530	7,544	13%	105	1.4%
	65-74	4,789	4,373	4,849	4,444	4,511	8%	-278	-5.8%
	75+	6,279	6,104	6,360	6,218	7,074	13%	795	12.7%
NCH Total		58,525	53,635	60,292	56,760	56,419	100%	-2,106	-3.6%
Total ED Presentations		149,344	141,021	153,715	143,699	145,669	-	-3,675	-2.5%

Table 15: ED Presentations by Age, TCH and NCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Excludes unknown visit types.

It is acknowledged that Canberra Health Services delivers a range of non-admitted and community-based services to complement the care delivered within the inpatient setting. Historically, non-admitted patient data has been difficult to utilise in planning, given inherent data variability across services. The implementation of the ACT myDigital Health Record (DHR) and significant work to better understand non-admitted patient data enables health services to plan for these integral services into the future.

Across CHS, there has been an increase in non-admitted patient activity, due to changing models of care that have seen care delivered outside of the admitted patient (inpatient) setting and increase in community-based models, enabling patients to receive care in their homes.

Clinical Unit	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	Variance	Growth
Geriatric & Rehabilitation	26,829	13,263	14,828	32,812	23,709	28,771	1,942	7%
Medical	340,297	387,102	402,496	507,568	892,719	395,149	54,852	16%
Surgical	116,159	126,364	110,687	116,142	100,899	114,916	-1,243	-1%
Mental Health	33,296	41,008	46,357	47,291	41,924	70,699	37,403	112%
Total Non-Admitted Patient OOS	516,581	567,737	574,368	703,813	1,059,251	609,535	92,954	18%

Table 16: Non-Admitted Patient Occasions of Service (OOS), Canberra Health Services, 2018/19-2023/24. Source: Canberra Health Performance Profile Series 1, 2024. Includes COVID-related OOS in 2021/22 and 2022/23. An 85% data quality and completeness confidence indicator has been applied.

It is recognised that activity is driven by population growth, the figure below shows that for NCH, this case remains true. When aligning the actual and base case projected activity for NCH, the trend is aligned to the Northside population projection trend. Further, it is well understood that the aging population is contributing to this trend, which is expected to be 52.5% by 2031 and 97.0% by 2041, driving future demand for additional bed capacity.

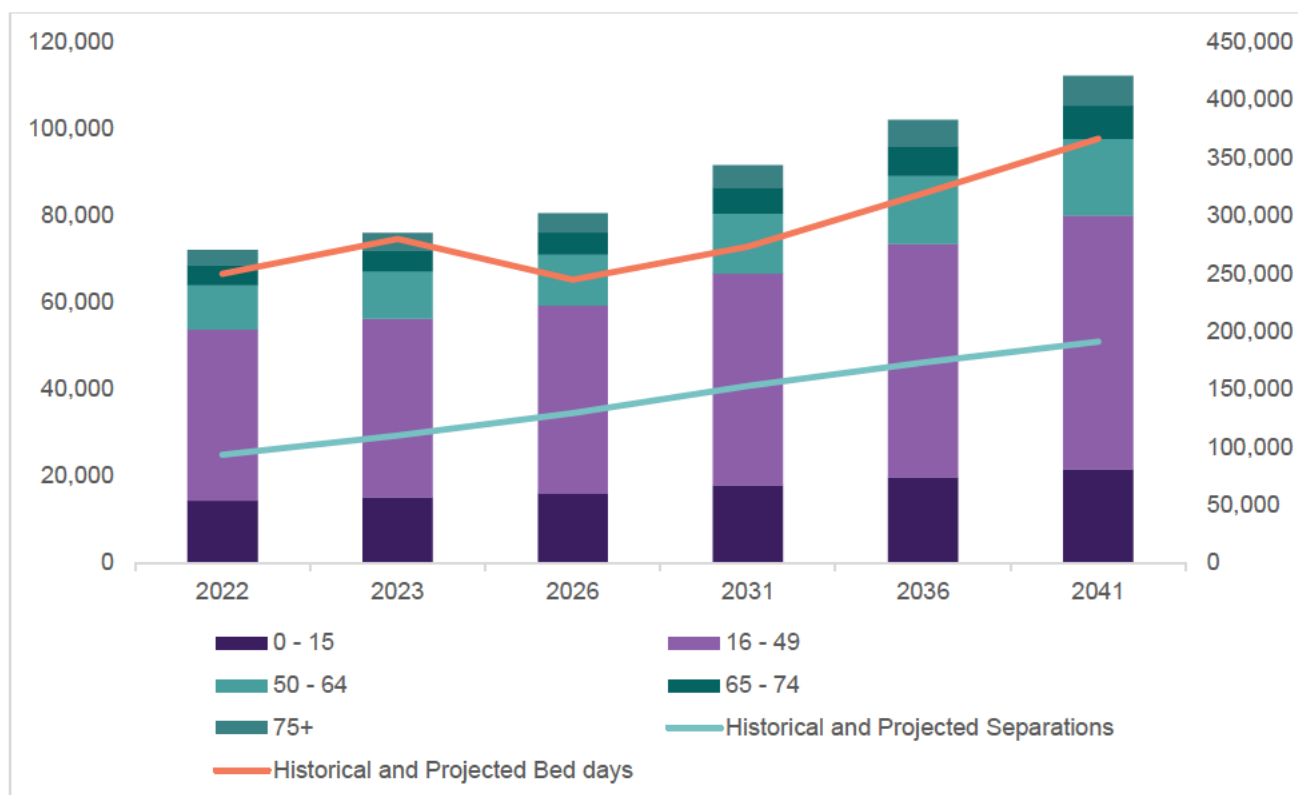


Figure 6: NCH Acute Historical and Projected Activity and ACT North Population. Source: 2022/23 ABF Admitted Patient (AP) ACTHD Data Extract, 2024; 2021/22 HPA AP Projections, provided by ACTHD, 2024; ACT Government, 2023 Latest ACT Population Projections

9. Current Profile and Activity for NCH

NCH delivers acute inpatient, outpatient and community-based services with core and clinical services predominately at Role Delineation Level (RDL) 4 (Appendix 1). This is aligned with its role as a District Hospital.

The delivery of these services is achieved by:

- Core services including Anaesthesia, Operating Theatres, Intensive Care, Radiology, Pathology and Pharmacy.
- Emergency Services.
- Acute services provided by Staff Specialist, Visting Medical Officers (VMOs), Advanced Trainees and/or Trainees.
- General and some speciality medical services including Cardiology, Endocrinology, Gastroenterology, Geriatric Medicine, Neurology and Respiratory Medicine. Other medical sub-specialities are supported by services at TCH in a networked arrangement.
- General Surgery and some speciality surgical services including Breast Surgery, Gynaecology, Orthopaedic Surgery, Ophthalmology and Urology.
- Maternity services with Obstetrics include antenatal and postnatal support, and Special Care Nursery available on-site. Neonates requiring neonatal intensive care are transferred to TCH and/or a NSW-based Neonatal Intensive Care Unit.
- Specialist Palliative Care services through the CHH, which is located offsite, which delivers Territory-wide medical, nursing and allied health inpatient, outpatient and community-based care, as well as a consult-liaison service to NCH.
- Mental Health inpatient services for acute adult and older person mental health care with access to Community Mental Health and Alcohol and Other Drug services, delivered off-site through the CHS Mental Health, Justice Health, Alcohol and Drug Services (MHJHADS).
- Access to specialist Clinical Nurse Educators, Clinical Nurse Consultants, and/or Nurse Practitioners on-site for emergency medical, surgical, maternity, mental health and selected ambulatory services. Sub-specialty expertise is accessed through TCH.
- Allied Health clinicians in Physiotherapy, Occupational Therapy, Dietetics, Social Work, Psychology, Aboriginal Liaison, Speech Pathology and Pastoral and Spiritual Care within both inpatient and outpatient settings.
- Medical, nursing and allied health education and workforce development.

NCH delivers the majority of its acute medical services within a General Medicine Model, supported by discipline-specific consultants on a roster including after-hours support. Cardiology and Neurology services are delivered within a sub-speciality model including inpatient, selected procedural and outpatient services. Consultation revealed that while outpatient services are established for cardiology and neurology, other sub-speciality clinics are to be developed in the future.

Acknowledging the proportion of older patients treated at NCH, there is a need to increase geriatric services with a Geriatric Management Taskforce having been established to address this patient cohort including those who present with complex cognitive impairment. It was reflected that the current infrastructure exacerbates the challenges of managing patients with severe cognitive impairment.

NCH also delivers a range of surgical services aligned to RDL Level 4. The current casemix is on primarily planned low-complexity procedures with selected emergency cases. Consultation revealed that undertaking emergency and higher-acuity cases can be challenging due to the NCH lacking the required workforce and resources to support them. These cases are commonly transferred to TCH, which faces constraints due to delivering a higher proportion of surgical activity for the ACT.

Specifically, NCH delivers Breast Surgery services for all residents within the ACT including surgery for benign and cancerous conditions. Gynaecological oncology surgical services have also recently commenced at NCH.

There are no dedicated areas for sub-acute activity such as rehabilitation, maintenance and geriatric evaluation and management (GEM). The care of these patients occurs across the medical and surgical wards, which can impact patient flow processes and length of stay.

While some paediatric activity may be observed, there are no dedicated acute paediatric inpatient beds or services. Paediatric patients that require admission are commonly transferred to TCH or if this occurs at NCH, it is within an adult ward.

The following sections will provide a high-level commentary and data analysis of the service areas at NCH including preliminary consultation findings undertaken with staff at NCH, TCH and CHS.

9.1 Emergency Department

The Emergency Department (ED) at NCH, is classified as a RDL 4 service, providing 24-hour emergency care to adult and paediatric patients who require immediate medical attention for severe injury or illness. It operates within a senior medical and nursing model, with support from allied health and mental health clinical teams.

The ED has 23 ED acute care spaces for adults and paediatric presentations. While the ED does receive paediatric patients, there are no dedicated spaces currently. There is a 15-space Fast Track area to treat ambulant, non-complex adult and paediatric presentations likely to be discharged within 2 hours. The unit also has a 15-bed ED Short Stay Unit for presentations requiring observation and to be discharged within 24 hours, 1 isolation room and 2 resuscitation bays.

Treatment Spaces	
ED – Acute Care Spaces	23
ED – Resuscitation Bays	2
ED Fast Track	15
ED Other Rooms (Isolation, mental health assessment, procedure room)	4
ED Short Stay Unit ⁵⁷	15
Total ED Treatment Spaces	59

Table 17: Current Built Total ED Treatment Spaces. Source: NCH, 2024.

The data analysis in this section's tables has utilised the current approved ED ABF data extract, issued by ACTHD. Consultation revealed that the data trend below does not reflect the actual observed trend, especially with significantly increased activity in 2023/24. A review of 2023/24 emergency data from CHS⁵⁸ indicated a substantial increase in ED presentations overall, with a considerable increase in ED presentations that result in admissions. Other factors that can contribute to this spike in activity include limited bulk-billing general practices across the ACT, seasonal outbreaks and increased presentations for lower acuity due to challenges accessing primary care.⁵⁹

⁵⁷ EDSSU activity is captured as part of the ABF Admitted Patient Extract

⁵⁸ The 2023/24 CHS hospital services activity data has not been approved for release, publication and/or broader circulation, as it is undergoing further verification. Data issued by CHS was provided to enable this analysis.

⁵⁹ AIHW. 2024. Emergency department care. Accessed from: <https://www.aihw.gov.au/reports-data/myhospitals/sectors/emergency-department-care>

In 2022/23, 17% of all ED presentations at NCH were for those aged 0 to 15. Those over 65 years accounted for 21% of total ED activity. The overall trend is variable, which is likely influenced by the COVID-19 pandemic, with an increasing trend remaining for those aged 50 to 64 years and over 75 years of age. In 2022/23, of all adult ED presentations, 33.7% were admitted to either the ED short stay unit, Hospital in The Home (HiTH) or an inpatient ward. Differentiation of admission by location was not available at this time. The paediatric admission rate was 1.5% reflective of the limited paediatric inpatient capacity

Between 2018/19 and 2022/23, NCH ED growth rate changed. This trend observed shows a level of variability over the past which includes the influx of the activity observed during 2020/21 and 2021/22 from the COVID pandemic and the introduction of ED avoidance strategies such as the Walk-in Centres, established in 2020 and other community-based models, particularly for mental health services across 2022. ED presentations are likely to increase in future years in line with the projected population growth anticipated in the ACT North regions and this has been explored as part of scenario modelling.

Age Group	2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth 2019-2023	Rate per 1000 population 2022/23
0-15	10,923	8,784	9,798	8,716	9,581	-1,342	-12.3%	178.8
16-49	29,095	27,373	31,184	29,852	27,722	-1,373	-4.7%	187.4
50-64	7,439	7,001	8,102	7,530	7,546	107	1.4%	197.6
65-74	4,789	4,373	4,849	4,445	4,514	-275	-5.7%	255.9
75+	6,279	6,104	6,360	6,218	7,074	795	12.7%	538.8
Total ED Presentations	58,525	53,635	60,293	56,761	56,437	-2,088	-3.6%	208.6

Table 18: Current ED Presentations by Age Group for NCH. Source: ACTHD Data Extract, 2024.

In 2022/23, 49% of the total activity was categorised as Triage Category 3, indicative of urgent presentations to the ED. Urgent and non-urgent presentations could be treated in other settings such as Walk-in Centres or managed as part of hospital avoidance programs to minimise the need for admission. Other trends have been observed, as noted through consultation including limited access to bulk-billing services within the community and people delaying access to care, which can be leading to people presenting to the ED with exacerbated conditions requiring emergency treatment and care.

Triage Category	2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth 2021-2041	Proportion of Total 2022/23
1 - Resuscitation: Immediate (within seconds)	183	299	276	226	296	113	61.7%	0.5%
2 - Emergency: Within 10 minutes	5,278	5,971	6,862	6,352	6,832	1,554	29.4%	12.1%
3 - Urgent: Within 30 minutes	29,124	27,138	28,928	28,026	27,771	-1,353	-4.6%	49.2%
4 - Semi-urgent: Within 60 minutes	20,605	17,552	21,026	19,403	18,883	-1,722	-8.4%	33.5%
5 - Non-urgent: Within 120 minutes	3,335	2,675	3,201	2,754	2,655	-680	-20.4%	4.7%
Total ED Presentations	58,525	53,635	60,293	56,761	56,437	-2,088	-3.6%	100.0%

Table 19: Current ED Presentations by Triage Category for NCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024.

Most ED presentations for NCH are from within the ACT North regions of Belconnen, Gungahlin, Molonglo Valley and North Canberra, accounting for 85% of total NCH ED presentations in 2022/23. Of the 5% of activity from Southern NSW residents in 2022/23, the majority are from Young-Yass (1,576), Queanbeyan (806), South Coast (158), Goulburn (105) and Snowy Mountains (48) regions.

While there was a 6.7% growth in ED presentation from ACT North residents to the TCH ED between 2018/19 and 2022/23, clinical consultation revealed that residents in the northern region have been choosing to by-pass NCH and access ED services at TCH. This places unnecessary pressure on TCH to manage patients who could be safely cared for locally at NCH both in the ED and subsequent admissions.

Furthermore, of the total ACT North resident demand, 17,360 were for paediatric ED presentations with 50.3% attending TCH. For ACT North adult ED presentations, 29.6% presented at TCH.

Given that paediatric service capability and capacity are limited at NCH, it seems likely that parents are by-passing NCH to have their children seen at TCH. Consultation with clinical stakeholders indicated that when paediatric patients present to NCH ED and require an admission, they have to be transferred via ACT Ambulance Service (ACTAS) to the TCH paediatric ward. This has led to fragmented patient care journeys and creates delays in efficient bed management across the Territory.

It seems inevitable that the population in the ACT North regions continues to grow. There will be a requirement for adequate paediatric cover to better manage and care for paediatric ED presentations, as well as potential clinically-appropriate paediatric admissions.

Hospital	Area of Residence	2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth 2021-2023	Proportion of Total 2022/23
TCH	ACT North	23,809	23,535	25,760	24,423	25,403	1,594	6.7%	28.5%
	ACT South	53,047	50,542	53,831	50,097	49,993	-3,054	-5.8%	56.0%
	Interstate Other	1,883	1,806	1,370	1,327	1,680	-203	-10.8%	1.9%
	NSW Other	2,214	1,997	1,999	1,646	2,230	16	0.7%	2.5%
	Overseas	-	-	-	-	125	125	-1	0.1%
	Southern NSW	9,866	9,506	10,463	9,446	9,839	-27	-0.3%	11.0%
Total TCH ED Presentations		90,819	87,386	93,423	86,939	89,270	-1,549	-1.7%	100.0%
NCH	ACT North	51,247	46,739	52,740	50,033	48,249	-2,998	-5.9%	85.5%
	ACT South	2,414	2,393	2,733	2,507	3,474	1,060	43.9%	6.2%
	Interstate Other	1,075	985	878	766	854	-221	-20.6%	1.5%
	NSW Other	1,055	915	1,026	827	1,080	25	2.4%	1.9%
	Overseas	-	-	-	-	86	86	-	0.2%
	Southern NSW	2,734	2,603	2,916	2,628	2,694	-40	-1.5%	4.8%
Total NCH ED Presentations		58,525	53,635	60,293	56,761	56,437	-2,088	-3.6%	100.0%
ACT North Demand for ED		75,056	70,274	78,500	74,456	73,652	-1,404	-1.9%	
ACT North Resident % at TCH		31.7%	33.5%	32.8%	32.8%	34.5%	2.8%	8.7%	
ACT North Resident % at NCH		68.3%	66.5%	67.2%	67.2%	65.5%	-2.8%	-4.1%	

Table 20: Current ED Presentations by Area of Residence for NCH and TCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024.

Key challenges identified include:

- Paediatric patients attending the NCH ED, often necessitates transfer to TCH for treatment and ongoing management, due to the limited on-site paediatric services at NCH. While, TCH paediatric ED presentations observed a declining trend between 2018/19 to 2022/23, ACT North paediatric ED presentations for residents have grown by 1.8% annually between 2018/19 and 2022/23. This would indicate they are by-passing NCH for TCH.
- Increased mental health presentations to the ED, leading to patients having extended ED length of stays while awaiting specialist mental health review, treatment and/or admission. Stakeholder consultation indicated that this patient cohort is frequently transferred to TCH or transferred to community mental health teams.
- Lack of care coordination between primary, secondary and tertiary care settings, unclear referral processes between the ED and Walk-In Centres. It was outlined during consultation that this has been leading to a poor patient experience of the patient journey.
- Current infrastructure is not fit for purpose and is impacting patient care such as for mental health patients, paediatrics and maternity patients presenting to ED experiencing complications.

Future Direction

Table 21 represents the opportunities and future considerations for ED services. Consultation indicated that there are operational efficiencies that can be gained with service-related improvements to be made in the immediate and short term to enable services to be delivered safely, effectively and efficiently. Thus, the strategies below have been categorised to also consider changes to service delivery that do not require an infrastructure response.

Type	Opportunity / Improvements / Future Directions for Consideration
Service Delivery	Expanding ED services to enable paediatric care to be provided at NCH due to the volume of paediatric patients presenting to the ED currently.
	Establishing a care pathway to better care for patients with behaviours of concern and/or mental health, and determine requirement for spaces such as Behavioural Assessment Unit.
Workforce	Expanding the role of nurse practitioners and advance-practice allied health clinicians within the ED.
	Increasing capacity to implement Senior Physician Review within the ED to support patient flow.
Models of Care	Developing integrated care pathways with medical and surgical specialties to streamline the patient journey from ED to inpatient wards.
	Review ED short stay and fast-track models to accelerate the patient journey within the ED safely, thus reducing waiting times for more urgent cases.
	Establishing care pathways with defined criteria, understanding the role of regional hospitals such as Queanbeyan Hospital within the CHS Network.
Enablers	Planning infrastructure and workforce to enable ED models of care to operate efficiently and safely including mental health workforce and infrastructure within the ED.
	Utilising technology to improve communication and coordination between hospitals and transport services.
	Enhancing partnerships with primary care services across the ACT to maintain ED avoidance for semi- and non-urgent presentations, and patients who frequently present.
	Exploring the integration of the ambulance and patient transport system within the ACT to better enable and manage patient flow between all ACT public hospitals.
	Considering a single, coordinated bed and transport management system across the ACT.

Table 21: Strategic directions for Emergency Department services for NCH

9.2 Intensive Care Services

The Intensive Care Unit (ICU) at NCH is co-located with the Coronary Care Unit (CCU) and while medical governance is separate, nursing governance and staffing covers both units. CCU will be captured as part of the Cardiology section.

The unit, classified a RDL 4 Intensive Care Service⁶⁰, provides specialist intensive care services to adult patients 24 hours a day, seven days a week in a designated intensive care unit in a multidisciplinary approach with life-threatening or potentially life threatening, and reversible or potentially reversible organ failure including:

- Care to critically ill adult patients needing complex multi-system life support.
- Takes referrals for admission and assesses against agreed clinical criteria as outlined within the ICU Admission Policy.
- ICU Liaison Service to identify patients at risk of admission or re-admission across NCH operates 8 hours a day, 7 days a week. This includes ICU review and assessment of patients on other inpatient wards or within the ED using agreed and standardised risk criteria. This service is supported by an ICU nurse.

⁶⁰ Consultation indicated that the ICU is classified a RDL 4 Intensive Care Services within the ACT Health Services Plan 2022-2030, although meets the criteria for RDL 5 within the NSW Health Guide to the Role Delineation of Clinical Services (2024).

- Medical Emergency Team (MET) Response, with an ICU Registrar acting as the MET responder and supported by ICU Liaison Service. The current MET model is split between ED for medical and paediatric response.
- Care for patients requiring intensive care from across the Territory including time critical transfers via Ambulance.
- Transfers patients to TCH predominately and other centres where specialist or subspecialist service is required but not available at NCH.
- Accepts appropriate transfers from retrieval services from lower-level services, including those from Southern NSW Local Health District (LHD)⁶¹.
- Works with surgical teams and anaesthetic teams to identify patients at risk of requiring intensive care admission postoperatively including as part of the elective pre-admission process.

The ICU has a capacity of 10 beds with funding available to operate up to 10 ICU2 patients, and a reduced number of beds if some patients require ICU1 level of care (up to 5 ICU1 patients), or a combination thereof, depending on the complexity and casemix within the ICU.

Admission to the ICU is predominately via the ED as well as through urgent medical or surgical referral, identified during a MET incident, via retrieval from CHS or other service, or post-operatively. The staffing ratio follows the Australian College of Critical Care Nurses (ACCCN) workforce standard ratios for ICU including 1 nurse to 1 patient for ICU-1 patients and 1 nurse to 2 patients for ICU-2 patients. The staffing mix includes nursing team leaders, education staff, Clinical Nurse Consultation and Assistant Director of Nursing, shared by the Coronary Care Unit.

Consistent with a RDL-4 ICU service, NCH does not provide services such as cardiothoracic surgery, ECMO, major trauma, or neurosurgery, which are available at TCH. If required urgently these services are accessed from TCH through interhospital transfers utilising ACTAS.

Between 2019 and 2021, there has been a change in ICU activity⁶². It is noted that this includes the COVID-19 period and that service activity across the system changed during this time period. The declining trend can be attributed to the reduced capacity to accept patients from ED, which would lead to transfer to TCH, adding to the existing patient transport challenges, consistently noted through consultation.

Hospital	Values	2019	2021	Variance	Growth	CAGR 2019-2021
NCH	ICU flagged separations	783	739	-44	-5.6%	-2.9%
	ICU Hours	55,067	49,298	-5,769	-10.5%	-5.4%
	ALOS	70.3	66.7	-3.619	-5.1%	-2.6%
	Calculated beds	8	8	0	0.0%	0.0%

Table 22: Historical ICU Activity for NCH, 2018/19-2020/21. Source: 2021/22 HPA ED Projections, provided by ACTHD, 2024. Includes acute only and 16 and over. Excludes Chemotherapy, Renal Dialysis and Unqualified Neonates, and 00-15 years. Bed calculation based on 75% occupancy. Note: The most recent ICU data available is from 2021.

Key challenges and issues identified include:

- The limited network model between ICU service across NCH and TCH, with frequent transfers to higher level care at TCH if the condition of the patient deteriorates.
- Current shared governance arrangement across ICU and CCU has been noted to impact admissions to the respective units, further exacerbating
- With the lower acuity of surgical cases at NCH and no Close Observation capacity on the inpatient wards at NCH, there is a perceived deskilling of the wards due to reduced exposure to complex casemix which requires all at-moderate clinical risk to be referred to ICU.

⁶¹ This accounted for 3% of total NSW Southern Residents at NCH for 2021.

⁶² Historical ICU data was only available for 2019 and 2021.

- Capacity of ICU and CCU is reduced at times when non-ICU/CCU patients require care in a negative pressure room, which are only available in ICU and CCU.
- With the ICU and CCU having the only negative pressure inpatient rooms within NCH. Consultation outlined that medical outliers can be found within the units which are co-located, impacting patient flow for patients that require ICU and CCU care.

Future Direction

Table 19 represents the opportunities and future considerations for the ICU service. It was recognised the future service delivery of intensive care services will be informed by the overarching strategic direction for NCH, operating this service to the full extent of RDL-4. Opportunities for developing an ICU network for Territory-wide bed capacity and flow to enable appropriate use of ICU beds, including retrievals, surgical cases and for sub-speciality care, and facilitate smooth and efficient transfers of ICU patients.

Type	Opportunity / Improvements / Future Directions for Consideration
Service delivery	▪ Establish the ACT ICU Network with TCH to enable integrated service delivery, enable cross appointments and support education and training to enhance ICU capability across CHS. ▪ Exploring the integration of NCH into the NSW ICU Network.
Workforce	▪ Redesigning the current MET governance so that it sits entirely with the ICU for both MET 1 and MET 2, noting this will require the appropriate medical, nursing and administrative resources to cover the service.
Models of Care	▪ Strengthening monitoring capability across inpatient wards. ▪ Developing clear ICU/CCU admission criteria and policy to support effective bed management and care of the patient within the appropriate setting.

Table 23: Strategic directions for ICU services for NCH

9.3 Medical Services

Medical Services provided at NCH operate within a generalist medical model supported by a diverse mix of Staff Specialists and VMOs from various specialities. Specialities include but are not limited to Cardiology, Gastroenterology, Endocrinology, Geriatric Medicine, and Respiratory Medicine. Access to other sub-specialities is provided by TCH with networking arrangements being further developed as a result of the integration of NCH into CHS.

There are three general medical inpatient wards dedicated to providing acute and subacute care and supported by a ward-dedicated Clinical Nurse Consultant, which includes:

- 5 West with 30 beds including the 6-bed Stroke Unit.
- 4 East with 30 beds.
- 4 West with 28 beds.
- Medical Assessment and Planning Unit (MAPU) with 24 beds.

Consultation indicated that medical outliers are also cared for on 6W due to an increasing number of sub-acute patients who are awaiting transfer to UCH other sub-acute facilities or a nursing home, that are occupying acute medical beds. This is further exacerbated by acute medical patients awaiting transfer to TCH for sub-speciality related procedures such as interventional radiology or interventional cardiology, which are not on site at NCH consistent with the hospital's role.

The MAPU is a 24-bed inpatient short stay unit providing multidisciplinary assessment, care and treatment of acutely ill medical patients, with a predicted length of stay of 48 to 72 hours. It has an additional function in providing comprehensive initial assessment for patients who require longer-term care. It is staffed by senior medical officers during business hours and junior medical staff 24 hours a day, 7 days a week.

There is a limited geriatric medicine service with Geriatricians operating within the General Medical model. Ongoing challenges with managing older persons have persisted over time including the management of older persons with complex cognitive conditions such as dementia, and caring for older persons in an acute setting that may be better served within a sub-acute setting.

The projected population of ACT North residents aged 65 and over is anticipated to increase by 36.2% by 2031 and 77.5% by 2041. Older people are more likely to access hospital services and in 2023, 267 patients (regardless of care type) had a primary or secondary diagnosis of dementia, compared to 133 in 2018/19. Thus over time, it is expected that this patient cohort will also grow and necessitate the development of appropriate models of care and infrastructure to care for people with behavioural and psychological symptoms of dementia.

Between 2018/19 and 2022/23, separations with a Maintenance care type in NCH increased from 264 separations to 493 separations, with the average length of stay (ALOS) being 14.3 days in 2018/19 to 16.8 days in 2022/23. The increasing number of Maintenance separations during this period has also been observed at TCH and UCH.

Over the past five years, medical separations at NCH increased by 20% while medical bed days increased by 32%. The majority of separations were emergency/unplanned accounting for 74% of total separations in 2022/23. The increase in ALOS since 2018/19 is consistent with the patient flow and bed management challenges noted throughout consultation, including patients awaiting transfer to TCH for specialist care and/or services not available at NCH.

The total combined current medical bed capacity for NCH is 112 excluding HiTH spaces. It was consistently expressed throughout the consultations when discussing the current operational impacts of the increased activity over time that there are outliers across the facility, as well as noting that NCH is operating at a 100% bed occupancy consistently. This is supported in the data as shown in Table 24⁶³.

Clinical Grouping	Stay Type		2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth
Medical-Adult	Overnight	Seps	8,117	7,924	8,884	7,068	8,490	373	4.6%
		Bed days	31,779	34,383	36,232	36,620	41,710	9,931	31.3%
		ALOS	3.9	4.3	4.1	5.2	4.9	1.0	25.5%
	Same Day	Seps	7,579	8,022	10,435	6,231	10,320	2,741	36.2%
		Bed days	7,579	8,022	10,435	6,231	10,320	2,741	36.2%
Medical-Adult Seps			15,696	15,946	19,319	13,299	18,810	3,114	19.8%
Medical-Adult Bed days			39,358	42,405	46,667	42,851	52,030	12,672	32.2%
Medical-Adult Overnight Calculated Bed			87	94	99	100	114	27	31.3%
Medical-Adult Same Day Calculated Bed			19	20	26	15	25	7	36.2%
Medical-Adult Total Calculated Beds			106	114	125	116	140	34	32.1%

Table 24: Historical Medical Activity, NCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Exclude Unqualified Neonates, Chemotherapy, Renal Dialysis, Organ Procurement care type and Unknown care type. Acute care type only, medical partition, 16 years and over. Overnight beds calculated at 100% occupancy. Same day overnight beds at 240 days at 170% occupancy.

In 2022/23, Neurology, Gastroenterology, General Medicine, Cardiology and Respiratory Medicine were observed as high-volume SRGs⁶⁴ for NCH. While NCH delivers medical care within a General Medicine model, the general medical roster consists of physicians that represent the services listed below. This provides an opportunity to explore sub-specialities at NCH that are delivering care with RDL 4 with adequate volumes to sustain sub-speciality services. This has been observed to date with Cardiology and Neurology.

⁶³ This activity includes separations that involved ED Short Stay Unit or a HiTH component. HiTH is discussed further in section 10.11.

⁶⁴ Service Related Group (SRG) and Enhanced SRG (ESRG) classifications categorise admitted patient episodes into groups representing clinical divisions of hospital activity, based on aggregations of AR-DRGs. SRGs are used to assist in planning services, analysing and comparing hospital activity, examining patterns of service needs and access, and projecting potential trends in services. Source: AIHW, 2019, Appendix C: Service related groups. Accessed from: <https://www.aihw.gov.au/reports/hospitals/hospital-resources-2017-18-ahs/contents/appendixes/appendix-c-service-related-groups>

Clinical Grouping	Service Related Groups	2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth
Medical-Adult	21 Neurology	1,827	1,938	2,582	2,177	2,910	1,083	59.3%
	15 Gastroenterology	2,388	2,379	2,864	2,083	2,878	490	20.5%
	27 General medicine	2,594	2,534	2,909	1,947	2,857	263	10.1%
	11 Cardiology	2,517	2,462	3,225	1,855	2,627	110	4.4%
	24 Respiratory medicine	1,405	1,517	1,380	1,106	1,407	2	0.1%
	Other SRGs	4,965	5,116	6,359	4,131	6,131	1,166	23.5%
Medical-Adult Total		15,696	15,946	19,319	13,299	18,810	3,114	19.8%

Table 25: Medical Activity by Top 5 SRGs, NCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Exclude Unqualified Neonates, Chemotherapy, Renal Dialysis, Organ Procurement care type and Unknown care type. Acute care type only. Based on assigned DRGsv10.

Key challenges and issues outlined through consultation included:

- Patients awaiting transfer to TCH for further care, for medical imaging within NCH to enable diagnosis, limited alternatives for assessment whereby admission is the primary option, and limited capacity to discharge patients to other care settings. This further demonstrates the impact to service delivery by the impacted by the lack of a coordinated and timely system to transfer patients.
- Managing the intersection between General Medicine and subspecialty care including transferring patients to TCH for specialist procedures such as ERCP, interventional radiology, intervention cardiology and dialysis.
- Caring for sub-acute patients within the acute setting while they await transfer to an appropriate sub-acute facility and/or nursing home.
- Delays in radiology with the current model of outsourced radiology reporting impacting timely management and leading to increased length of stay.
- Limited care pathways and unclear admission criteria have led to an increase in activity that may be better managed in outpatient, community and/or sub-acute settings.
- Limited integration of medical and surgical services to support pre-operative models.
- Limited infrastructure capacity to enable expansion of other sub-speciality outpatient services such as gastroenterology

Future Direction

Noting that medical service activity has increased over the past five years, the aging profile of medical services patients, current operational issues including fragmented care pathways, and limited capacity to undertake outpatient services/clinics. The following tables present the opportunities and future considerations for medical services at NCH.

Type	Opportunity / Improvements / Future directions for consideration
Service delivery	▪ Expansion of medical services into sub-specialities aligned to casemix for NCH such as Gastroenterology, Cardiology, Neurology, Respiratory Medicine, Geriatric Medicine.
	▪ Enhancing networking across sub specialities within CHS
	▪ Establishment of a Neurology Ward to enable access to neurology and stroke care aligned to proposed RDL, support workforce development and continuity of care for the neurology patient journey.
	▪ Strengthening the existing stroke unit by establishing an acute stroke service.
	▪ Developing of a streamlined stroke care model including feasibility for a stroke unit for rapid diagnosis and treatment.
	▪ Enhancing services for older people across disciplines including acute care management and longer term sub-acute care requirements.
	▪ Establishing a Behavioural and Psychological Symptoms of Dementia (BPSD) unit to support the care and management of people experiencing BPSD.
	▪ Establishing Rapid Access Clinics for patients who need follow-up care without the need for a hospital admission or extended hospital stays.

Type	Opportunity / Improvements / Future directions for consideration
Workforce	Enhancing multidisciplinary approaches that enable clinicians to perform at to the full extent of their scope
	Expanding CCU multidisciplinary workforce including Medical Officers, Cardiac Scientist, ECHO Sonographers, Team Leader, Educator and Clinical Nurse Consultant, and Nurse Practitioner to facilitate patient management and flow, and coordinate dedicated CCU education and training.
Models of Care	Exploring a post-ICU care model to better more effectively manage patient flow
	Developing model of care to manage and support complex dementia patients, in collaboration with the Older Persons Mental Health service.
	Establishing clear pathways for improved coordination and transfer between acute care and sub-acute care services, within NCH, CHS and Residential Aged Care Facilities (RACFs).
	Improving the transfers to UCH
Enablers	Implementing digital models of care, such as the development of applications and digital platforms that offer tailored educational content and real-time feedback to patients.
	Implementing hybrid models of care for heart failure, combining in-person visits with digital monitoring and remote therapeutics.
	Establishing and building partnerships with community-based services and RACFs to facilitate smoother transition for patients out of the hospital.

Table 26: Strategic Directions for Medical Services for NCH

Cardiology

NCH provides a RDL-4 Cardiology Department delivering inpatient and outpatient services. There are no dedicated inpatient beds for cardiology patients though the service includes the 6-bed non-interventional Coronary Care Unit (CCU). The patient cohort is for those patients with cardiac arrhythmias, cardiac inflammatory conditions, non-ST-elevation myocardial infarction (NSTEMI) or STEMI post intervention and patient post procedures of pacemaker insertion, defibrillator insertion and angiograms with or without stents and heart failure. Cardiology Consultants will consult general medical patients with a cardiology condition though consultation indicated this is a small volume.

Currently, the CCU medical team is available within business hours with a temporary increase of CCU registrar cover until 9pm on weekdays and cover on weekends for 3 hours. The staffing ratio is 1 nurse to 3 patients. Where patients are actively deteriorating or present a risk of harm to self, patient ratios may be increased to 1:1 or 1:2 in consultation with management team. The primary source of admission for the CCU is the ED followed by inpatient ward transfers.

The Cardiology Department provides the following outpatient services including:

- Outpatient echocardiography (ECHO)
- CT coronary angiograms
- adrenaline and flecainide challenges
- Dobutamine stress echocardiography
- Cardioversions and trans-oesophageal echocardiography (TOE), which currently occur in theatres
- Cardiology follow up clinics
- Cardiac rehabilitation program.

Access to the cardiac catheterisation labs when required is provided by TCH for public patients. Patients transferred to TCH for their procedures, where medically appropriate, are transferred back to NCH for the remainder of their care. Over time, this has led to a fragmented cardiology patient journey with a reliance on ACTAS, the Territory's ambulance and emergency service, which prioritises emergency cases within the community. Consultation indicated that this can lead to

additional bed days at both TCH and NCH for patients awaiting transfer and this has been observed by the increased ALOS over the past five years.

For those patients with private health insurance, access to cardiac catheterisation labs at National Capital Private Hospital and Calvary Bruce Private Hospital can be arranged. This has been brought to light in recent years and through consultation that there is a growing reliance on the private health system to enable access to services not available at NCH. In 2022/23, there were 111 Cardiology and Interventional Cardiology separations for contracted care (i.e. care undertaken by private health providers), which was a significant increase from 2018/19 where 4 separations were reported.

Over the past five years, for Cardiology and Interventional Cardiology separations (which account for around 9% of total NCH separations⁶⁵), there has been a 1.6% annual growth in separations and 9.1% growth in bed days from 2018/19 to 2022/23. This has seen an increased length of stay to 4.1 days in 2022/23, compared to 3.3 days in 2018/19. In 2022/23, there was a calculated bed requirement for 17 overnight beds and 4 same day beds. This activity has been included as part of the Medical Services analysis.

Stay Type	Values	2018/19	2019/20	2020/21	2021/22	2022/23	Growth 2019-2023	CAGR 2019-2023
Overnight	Separations	1,147	1,045	1,373	997	1,307	13.9%	3.3%
	Bed days	3,797	3,726	4,434	4,275	5,385	41.8%	9.1%
	ALOS	3.3	3.6	3.2	4.3	4.1	24.5%	5.6%
Same Day	Separations	1,427	1,447	1,890	913	1,440	0.9%	0.2%
Total NCH Separations		2,574	2,492	3,263	1,910	2,747	6.7%	1.6%
Total NCH Bed days		5,224	5,173	6,324	5,188	6,825	30.6%	6.9%

Table 27: Historical Cardiology and Intervention Cardiology Activity, NCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Excludes All other SRGS. Includes all care types.

Other key challenges and issues related to current service delivery for cardiology services include:

- Cardiology outpatient services are under resourced with long wait lists existing for all services including chest pain, ECHO, cardiac rehabilitation and CT angiography.
- Limited specialist cardiac workforce and equipment onsite such as cardiac sonographers, cardiac scientists/physiologists and echocardiogram machines, further necessitates the need to transfer patients to TCH so they receive the required care.
- Limited ability to undertake telemetry on the ward further exacerbating the need for monitoring to occur within the CCU, adding to critical care bed block.
- Complex medical governance exists with CCU currently co-located with ICU.

Opportunities and future considerations for cardiology services include:

- Establishing an integrated Cardiology and CCU service to enable whole of patient journey management and consolidate clinical governance arrangements for this cohort. This will include a review of workforce and resources, including appropriate ambulatory designed models of care to reduce hospital demand, through hospital avoidance, earlier discharge and coordinated follow up.
- Consideration of establishment of interventional cardiology capability with on-site cardiac catheterisation lab for service delivery aligned to a RDL-4 service.
- Address patient flow challenges and critical care bed block to enable CCU bed capacity to be better utilised.
- Strengthen the existing heart failure clinic with greater emphasis on multidisciplinary care and service delivery.
- Enhancing non-admitted and outpatient services across key cardiology programs to facilitate

⁶⁵ Excluding Chemotherapy, Renal Dialysis, Obstetrics, Qualified Neonates and Unqualified Neonates

ongoing care and management of people with chronic cardiovascular conditions outside of the inpatient setting.

Neurology

NCH has an established RDL 4 Neurology service which delivers inpatient and outpatient services. This includes 4 dedicated beds which provide specialist neurology care for patients with ischemic and haemorrhagic stroke and an acute stroke team for intravenous thrombolysis in appropriate patients.

TCH provides endovascular thrombectomy and neurosurgery services and is the endovascular clot retrieval referral hub for seven hospitals including six hospitals within Southern NSW LHD.

Various key challenges were noted for the Neurology service at NCH including:

- High-demand for outpatient services with long waitlists in place.
- Limited on-site radiological services including MRI which is provided by a private provider.
- Limited formal processes to transfer patients between the public and private sectors.
- Neurology inpatients are not consolidated into a single ward.
- Transfers between TCH could be improved, given that TCH is the RDL-6 Neurology and Stroke Service, and provides the Territory's clot retrieval service.
- Reduction in EEG services over the past two years due to workforce shortages has impacted the care of patients requiring epilepsy management.
- Limited infrastructure and workforce capacity to undertake nerve conduction services, leading to a reliance on services at TCH.
- Increased reliance on private services for imaging services and neurology studies, due to public capacity at NCH.
- Ambiguous and informal care pathways for transferring NSW residents back to Southern NSW LHD services.

Future opportunities and improvements for the future are reflected in Table 26.

9.4 Surgical Services

Current State

North Canberra Hospital provides surgical services including General Surgery, Orthopaedic, Gynaecology, Urology, Breast Cancer Surgery, Ophthalmology, and Dental Surgery. Surgical services are supported by a 7 operating theatres and 1 procedural room for non-complex interventional cases such as scopes, cardioversions, ECT and PICC lines, and a 28-bed ward (6W).

NCH delivers predominately elective services in the areas of Urology, Endoscopy, General Surgery and Gynaecology. NCH is currently the primary centre in ACT for Breast Surgery. A Gynae-Oncology Surgery Service was established in 2024⁶⁶.

The majority of surgical activity at NCH is for same day planned procedures with a low emergency workload. Emergency cases are often sent to TCH, including for lower-impact cases such as fractures.

⁶⁶ Due to the recency of this service being established, trended data is not available.

While NCH is the provider of breast cancer surgery for benign and cancerous conditions for the Territory, the service is provided across multiple public and private health service providers and locations. It is observed that:

- Imaging services are available at TCH and predominately within the private sector for mammography, ultrasound, biopsy, breast MRI and PET CT staging.
- Breastscreen is delivered from community health centres in Belconnen, Canberra City and Philip.
- Breast care nursing is delivered at NCH for both public and private patients.
- The Benign Breast Imaging Clinic, for positive screens, is delivered from TCH.
- Sub-speciality allied health services delivered by both private providers and NCH.
- Medical and radiation oncology is provided at TCH.
- Multidisciplinary Team Meetings include both public and private patients.

It was noted that private outsourced services are under pressure to provide services in line with the foundations of universal healthcare provision as expected within a public health setting. For example, when a patient with a breast mass and suspected cancer seen in North Canberra Hospital is sent for ultrasound guided biopsy to a private health provider, patients have to cover the associated out of pocket costs or due to private sonographer shortages, long wait times are expected. It has been indicated through consultation that patient outcomes are affected due to lack of coordination, inequitable access to care due to out of pocket expenses and fragmented patient journey.

In 2022, a fire within NCH theatres necessitated a refurbishment of the NCH theatre complex. During 2022/23, surgical cases were managed by TCH and the private health sector to manage the surgical waitlist.

Other key challenges and issues outlined through consultation included:

- Inconsistent surgical bed availability not meeting the needs of the demand for surgery, leading to operational inefficiencies and long wait lists.
- Patient flow challenges impacting surgical bed availability due to medical long stay patients awaiting placement at UCH and/or nursing homes.
- Difficulties in managing patient flow from private consulting rooms to public health services, further contributing to the long surgical waitlist issues.
- Limited capacity for outpatient services, leading to under-provision of post-op care after discharge.
- Perceived operational inefficiencies in managing procedural rooms and back of house activities.
- Coordination challenges between NCH and TCH for sub-speciality surgical cases and care, leading to increased wait times for surgery and impacting post-operative care.

Given the theatre fires in 2022, where TCH together with the private sector delivered surgical services to public patients, and the operational challenges observed at NCH, a declining trend was observed with NCH surgical activity being predominately planned.

Hospital	Urgency of Admission	Values	2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth 2019-2023	CAGR 2019-2023
NCH	Emergency	Seps	1,233	1,281	1,162	1,212	1,155	-78	-6.3%	-1.6%
		Bed Days	6,626	6,421	5,525	5,661	6,326	-300	-4.5%	-1.2%
	Planned	Seps	7,767	7,157	8,526	7,693	6,584	-1,183	-15.2%	-4.0%
		Bed Days	10,579	9,968	11,474	10,601	9,193	-1,386	-13.1%	-3.4%
NCH Total Seps			9,000	8,438	9,688	8,905	7,739	-1,261	-14.0%	-3.7%
NCH Total Bed days			17,205	16,389	16,999	16,262	15,519	-1,686	-9.8%	-2.5%
TCH	Emergency	Seps	8,915	9,640	10,144	9,908	9,787	872	9.8%	2.4%
		Bed Days	53,353	58,965	56,944	57,349	57,751	4,398	8.2%	2.0%
	Planned	Seps	7,467	7,460	8,476	7,632	7,878	411	5.5%	1.3%
		Bed Days	22,037	21,967	23,061	19,999	20,591	-1,446	-6.6%	-1.7%
TCH Total Seps			16,382	17,100	18,620	17,540	17,665	1,283	7.8%	1.9%
TCH Total Bed days			75,390	80,932	80,005	77,348	78,342	2,952	3.9%	1.0%
CHS Total Surgical Seps			25,382	25,538	28,308	26,445	25,404	22	0.1%	0.0%
CHS Total Surgical Bed days			92,595	97,321	97,004	93,610	93,861	1,266	1.4%	0.3%

Table 28: Surgical-Adult Activity Trend for NCH and TCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Exclude Unqualified Neonates, Chemotherapy, Renal Dialysis, Obstetrics, Organ Procurement care type and Unknown care type. Acute care type only, intervention partition and 16 years and over.

Patient flow challenges and bed blocks were outlined consistently during consultations, indicating the limited availability of surgical beds due to medical outliers. Table 29 outlines that in 2022/23 there was a total surgical bed requirement of 46 beds for NCH. While a decreasing trend is observed, bed management and patient flow challenges may be contributing to this.

Clinical Grouping	Admission Type		2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth 2019-2023
Surgical-Adult	Overnight	Seps	3,252	3,123	3,403	3,373	2,716	-536	-16.5%
		Bed Days	11,457	11,074	10,714	10,730	10,496	-961	-8.4%
		ALOS	3.5	3.5	3.1	3.2	3.9	0	9.7%
	Same Day	Seps	5,748	5,315	6,285	5,532	5,023	-725	-12.6%
		Bed Days	5,748	5,315	6,285	5,532	5,023	-725	-12.6%
Surgical-Adult Seps		Seps	9,000	8,438	9,688	8,905	7,739	-1,261	-14.0%
Surgical -Adult Bed days		Bed Days	17,205	16,389	16,999	16,262	15,519	-1,686	-9.8%

Table 29: Historical Surgical Activity, NCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Exclude Unqualified Neonates, Organ Procurement, Chemotherapy and Renal Dialysis. Acute care type only, intervention partition and 16 years and over.

While the overall surgical activity trend for NCH is observed to have declined, Urology, Gynaecology, Breast Surgery and Plastics and Colorectal Surgery have increased. This is consistent with consultation which outlined the areas of potential specialisation for NCH, particularly for high-volume low-complexity surgical models.

It was outlined that NCH undertakes the majority of breast surgical cases across the ACT and the Plastics activity reported here is associated with the surgical breast oncology service that has developed over time. Despite having a busy ED, the majority of emergency orthopaedics is transferred to TCH due to limited emergency surgical capacity at NCH, demonstrated by the observed volumes for orthopaedics in the table below. The majority of this activity (98.2%) is for planned work.

Clinical Grouping	Service Related Group	2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth
Surgical-Adult	16 Diagnostic GI	1,962	1,830	2,011	1,860	1,751	-211	-10.8%
	52 Urology	1,078	1,151	1,297	1,433	1,308	230	21.3%
	50 Ophthalmology	1,453	1,311	1,717	1,284	858	-595	-40.9%
	71 Gynaecology	771	818	987	856	793	22	2.9%
	54 General surgery	671	627	684	660	618	-53	-7.9%
	15 Gastroenterology	579	488	540	469	418	-161	-27.8%
	49 Orthopaedics	551	495	702	603	386	-165	-29.9%
	51 Plastic & reconstructive surgery	291	250	334	315	308	17	5.8%
	41 Breast surgery	268	310	304	320	276	8	3.0%
	44 Upper gastrointestinal surgery	254	227	253	263	246	-8	-3.1%
	43 Colorectal surgery	210	214	237	209	240	30	14.3%
	24 Respiratory medicine	262	195	107	125	165	-97	-37.0%
	47 Oral and maxillofacial surgery	253	187	193	144	118	-135	-53.4%
	48 Ear, nose & throat/head & neck	266	227	218	185	69	-197	-74.1%
	12 Interventional Cardiology				18	67	67	-
	11 Cardiology	32	16	17	26	33	1	3.1%
	Other SRGs	99	92	87	135	85	-14	-14.1%
Surgical-Adult Total Seps		9,000	8,438	9,688	8,905	7,739	-1,261	-14.0%

Table 30: Surgical Activity by Top 5 SRGs, NCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Exclude Unqualified Neonates, Organ Procurement, Chemotherapy and Renal Dialysis. Includes Acute care type only. Based on assigned DRGs v10.

For ACT North residents, 52.8% of surgical activity is undertaken at TCH with 30.5% being for emergency and 21.8% for planned cases, predominately for Orthopaedics, General Surgery and Interventional Cardiology.

Future Direction

For NCH to fulfil its role, there needs to be a focus on supporting its emergency cases that come through the ED. This is partly due to legacy operating models and ACTAS bypassing NCH with a review of ACT North residents flowing to the TCH ED via ambulance at a higher rate than ACT North residents self-presenting to TCH.

Aligned to its RDL-4 surgical services, delivering a high-volume low-complexity surgery service for CHS with TCH continuing to act as the Tertiary Centre for more complex surgery. This needs to occur within a coordinated and networked approach with TCH so CHS can utilise its surgical expertise and workforce across both facilities.

With significant workforce shortages across disciplines such as Anaesthesia, ENT, Ophthalmology and Plastics and given the proximity of the two hospitals, networked surgical models are critical to meeting demand and delivering an efficient service. Maintaining the balance between low- and high-complexity surgical caseloads at each hospital is essential to support workforce attraction, retention and development strategies.

As with medical services, investment in non-admitted patient services is critical to support the long-term sustainability of high-quality healthcare delivery. For surgical services, ensuring better patient outcomes pre- and post-surgery can be achieved by enabling dedicated outpatient services focused on the high-volume services such as Urology, General Surgery, Gynaecology and Ophthalmology. Recognising that some of these currently exist albeit on a limited capacity, there is an opportunity to redesign outpatient service delivery and infrastructure to allow services to meet current and future demand.

Building on the role of NCH, developing its Breast Cancer Surgery Service is important, with the surgical expertise at NCH and oncology capability and capacity at TCH, the service can be better networked to reduce access issues for public patients and enable a coordinated patient care pathway. Improving access to the required medical imaging and diagnostic components essential for the detection of benign and malignant tumours is vital to enabling good patient outcomes.

Further opportunities and future considerations for surgical services include:

Type	Opportunity / Improvements / Future Directions for Consideration
Service delivery	Establishing elective high-volume low complexity service for NCH with integrated surgical workforce model with TCH to build a skill-mix across both sites.
	Establishing an integrated breast service to enable access to care for breast symptoms, imaging, biopsy for diagnosis, staging and further work-up.
	Exploring the feasibility of interventional radiology and radiology-guided surgery for cases within a RDL-4 service.
	Exploring feasibility for robotic surgery capability, noting that for some specialities such as urology and colorectal surgery, this can be considered as part of attracting and retaining senior surgical workforce and influencing surgical trainee requirements.
Workforce	Improving access to reconstructive services by increasing the availability and timeliness of plastic and reconstructive surgeries post-mastectomy. It was indicated through consultation that the availability of Plastics and Reconstructive Surgeons is limited within the ACT and remains a key challenge for CHS.
Models of Care	Implementing a surgical network model with services strategically distributed between NCH and TCH, ensuring resource efficiency, patient safety, and high-quality care.
	Reviewing the management of Category 3 patients across CHS to ensure the waitlist accurately reflects clinical need and progression of the disease. This may be a reassessment to prioritise patients who need surgery sooner and potentially reassess those who can safely delay surgery.
	Exploring pre-operative models such as pre-rehabilitation (pre-hab)⁶⁷ to improve patient outcomes post-surgery.
Enablers	Strengthening collaboration with TCH to share resources and enhance training opportunities across both sites, to improve patient flow and resource utilisation.
	Optimising patient pathways before surgery using digital tools to keep patients healthy while they wait and avoid unnecessary admissions.
	Enhancing visibility of patients who are on waiting lists, enabling timely interventions if a patient's condition deteriorates.
	Establish surgical research capacity and capability including establishment of a clinical trials unit.

Table 31: Strategic Directions for Surgical Services for NCH

9.5 Operating Theatres and Procedural Rooms

NCH has 7 theatres and 1 procedural room for non-complex interventional cases with 4.5 theatres funded for operations. This includes 4 theatres for full elective sessions and 0.5 for emergency cases after hours. In 2022, a fire damaged the operating rooms where 4 theatres were refurbished. Stakeholder consultation indicated that the refurbishment did not address functional and operational considerations with theatre sizes varying in size across the complex, which had operational impacts on the type of services that can be performed. Together with workforce challenges, consistent across the health system, there continues to be operational inefficiencies related to theatre and procedural room management. Furthermore, the current infrastructure is impacting the increasing

⁶⁷ Prehabilitation, or prehab, is a type of preparation for surgery that focuses on improving patients' functional status before a major stressor, such as surgery, with a goal of improving outcomes sooner after surgery. Source: Rodriguez, ME and Foreman RM, 2024, Preparing Oncology Patients for Surgery: A Prehab Pilot Program, The Journal of Nurse Practitioners, <https://doi.org/10.1016/j.nurpra.2024.105127>

reliance on equipment required for theatre cases and it was reported through clinical consultation that some cases cannot be performed in certain theatres due to the limited size to accommodate the required equipment for the surgery/procedure. As well as the increasing volume of medical patients that are outlying in the surgical wards that has an upstream impact on theatre activity.

Due to accreditation requirements, the Sterile Services Unit (SSU) is no longer provided on-site at NCH. The interim measure is for a hub and spoke model supported by TCH SSU. Executive and clinical consultation revealed challenges with reliance on a single SSU across CHS including limited redundancy across the system, adequate storage capacity at NCH to perform planned theatre lists and reduced capacity to be agile within theatres and with cases due to set equipment being transferred between TCH and NCH.

NCH has 1 procedural room where non-complex diagnostic and interventional procedures are undertaken. Due to the limited capacity, some cases that are suited for procedural rooms or other intervention settings such as a cardiac catheterisation lab are undertaken within theatres.

Table 32 provides an indicative analysis of theatre activity for NCH by utilising the intervention flag assigned to separations as a proxy for theatre and procedural room cases. Between 2018/19 and 2022/23, there has been a declining trend in theatre activity. A key consideration is this is not a reflection of demand but rather a current throughput. As expressed previously, operational challenges impact on the ability to schedule cases, perform them and then discharge home efficiently and effectively, meaning they are in recovery spaces longer, and/or transfer patients to inpatient wards that are expressing bed block.

Hospital	Urgency Admission Type	2018-19	2019-20	2020-21	2021-22	2022-23	Variance	Growth 2019-2023	CAGR 2019-2023
NCH	1 - Urgency status assigned - emergency	1,249	1,294	1,178	1,243	1,174	-75	-6.0%	-1.5%
	2 - Urgency status assigned - elective	7,849	7,225	8,603	7,762	6,676	-1,173	-14.9%	-4.0%
Total NCH Intervention Separations		9,098	8,519	9,781	9,005	7,850	-1,248	-13.7%	-3.6%
Calculated Emergency Theatres		0.3	0.3	0.3	0.3	0.3	-6.0%	-1.5%	-6.0%
Calculated Planned Theatres		4.1	3.8	4.5	4.0	3.5	-14.9%	-4.0%	-14.9%

Table 32: Current Interventional/Theatre Activity, NCH, 2018/19-2022/23. Source: ACTHD ABF AP Data Extract, 2024. Exclude Unqualified Neonates, Organ Procurement, Chemotherapy and Renal Dialysis, Urgency Not Assigned or Urgency Unknown. Includes all care types, intervention partition flag only. Calculated Emergency Theatre based on 4,380 cases per year and calculated planned theatre based on 1,920 cases per year.

Endoscopy

In June 2024, the endoscopy suite at NCH⁶⁸ was upgraded to include state-of-the-art technology and better manage demand in anticipation of the National Bowel Screening Program expansion.

Table 33 shows the changing trend from 2018/19, with less scopes being performed at NCH in 2022/23. This can be due to existing operational and procedure room management challenges outlined throughout the clinical consultation, where operating theatre complex inefficiencies impact throughput.

⁶⁸ Activity data aligned to this enhancement will be captured in the 2024/25 data extracts, commonly available post June 2025.

The increasing ALOS observed may be attributed to medical patients who may require diagnostic procedures to determine diagnosis. Current theatre management issues outlined during clinical consultations including that not all theatres are operational, may be contributing to the reduced capacity to undertake these cases.

Hospital	Stay Type	Values	2018-19	2019-20	2020-21	2021-22	2022-23	Variance	Growth 2019-2023	CAGR 2019-2023
NCH	Overnight	Seps	210	210	205	229	140	-70	-33.3%	-9.6%
		Bed days	1,136	1,154	1,103	1,139	930	-206	-18.1%	-4.9%
		ALOS	5.4	5.5	5.4	5.0	6.6	1.2	22.8%	5.3%
	Same Day	Seps	2,331	2,108	2,347	2,101	2,029	-302	-13.0%	-3.4%
Total NCH Seps			2,541	2,318	2,552	2,330	2,169	-372	-14.6%	-3.9%
Total NCH Bed days			3,467	3,262	3,450	3,240	2,959	-508	-14.7%	-3.9%

Table 33: Current Endoscopy Activity, NCH, 2018/19-2022/23. Source: ACTHD ABF AP Data Extract, 2024. Exclude Unqualified Neonates, Organ Procurement, Chemotherapy and Renal Dialysis. Includes all care types, ESRG 152 Complex endoscopy, 161 diagnostic colonoscopy and 162 diagnostic gastroscopy

Cardiac Catheterisation Laboratory

There is no on-site cardiac catheterisation lab at NCH. Cases requiring cardiac catheterisation lab and interventional cardiology services are transferred to NCH or private hospitals including Calvary Bruce Private Hospital or National Capital Hospital.

Inpatients at NCH who clinically require such services, and not demonstrating signs of serious complications, wait as an inpatient until a treatment slot becomes available at TCH, before being transferred by ACTAS. After a short recovery period at TCH, patients are returned via ACTAS to NCH.

Executive and stakeholder consultation indicated the need for better access to care for patients presenting to NCH, minimising reliance on the private sector for this capacity and limiting transfers to TCH. A flow-on impact of these transfers is that patients are waiting in an acute bed for transfer, which further exacerbates the existing bed management issues and increasing length of stay at NCH.

Currently, interventional cardiology procedures are undertaken within an operating theatre. It was outlined that workforce challenges with interventional cardiologists at NCH have also limited the service being developed with 1 Interventional Cardiologist resuming activity at NCH recently, as shown by the low volumes for Interventional Cardiology at NCH in recent years.

Hospital	Stay Type	Values	2018-19	2019-20	2020-21	2021-22	2022-23	Variance	Growth 2019-2023	CAGR 2019-2023
TCH	Overnight	Seps	1,308	1,313	1,317	1,310	1,262	-46	-3.5%	-0.9%
		Bed days	3,696	3,715	3,908	3,830	4,335	639	17.3%	4.1%
		ALOS	2.8	2.8	3.0	2.9	3.4	1	21.6%	5.0%
	Same Day	Seps	725	740	792	691	623	-102	-14.1%	-3.7%
Total TCH Seps			2,033	2,053	2,109	2,001	1,885	-148	-7.3%	-1.9%
Total TCH Bed days			4,421	4,455	4,700	4,521	4,958	537	12.1%	2.9%
NCH	Overnight	Seps	-	-	-	18	67			
		Bed days	-	-	-	91	281			
		ALOS	-	-	-	5.1	4.2			

Table 34: Current Interventional Cardiology Activity, TCH and NCH, 2018/19-2022/23. Source: ACTHD ABF AP Data Extract, 2024. Exclude Unqualified Neonates, Organ Procurement, Chemotherapy and Renal Dialysis. Includes all care type.

Table 35 shows the transfers from NCH to TCH for Intervention Cardiology between 2018/19 and 2022/23. It is noted that in August 2022, a temporary arrangement was in place where NCH patients were transferred to Calvary Bruce Private Hospital to receive these services. This has been captured below.

Values	2018-19	2019-20	2020-21	2021-22	2022-23	Variance	Growth 2019-2023	CAGR 2019-2023
Separations	123	108	148	115	134 ⁶⁹	11	8.9%	2.2%

Table 35: NCH Transfers⁷⁰ to TCH for Interventional Cardiology, 2018/19-2022/23. Source: ACTHD ABF AP Data Extract, 2024. Includes DRG F10A, F10B, F12A, F12B, F24A, F24B, F41A, F41B, F42A and F42B.

Future Direction

Due to the interrelationship between surgical services, maternity, and to an extent selected medical specialities that have an interventional component such as cardiology, gastroenterology, respiratory medicine, psychiatry and operating theatres, a coordinated theatre complex management approach is required to enable efficiencies. This approach would support efficiencies in workforce resource and allocation, comprehensive theatre and procedure waitlist management and exploring whether non-complex procedures can be undertaken as outpatients within a day surgical model to limit the requirement for overnight acute beds.

9.6 Maternity Service

The Women and Children's Service at NCH provides RDL 4 maternity, RDL 4 gynaecology and RDL 3 neonatal services within a multidisciplinary model across a 21-bed ward for maternity and gynaecology patients, a 14-bed Special Care Nursery (SCN), 2-room Birth Centre and 1 assessment room, for delivering the Midwifery Continuity of Care model and 6 Birth Suites with 1 assessment room.

The Women and Children's Service also cares for patients with gynaecological conditions, providing complex gynaecological procedures. A key challenge noted through consultation was the shared spaces for inpatient and outpatient care delivery, especially for those patients who are receiving care after pregnancy loss.

Recently, gynae-oncology surgery has commenced at NCH with 1 day per month operating for selected uncomplicated day stay or overnight only. The service is currently in development with limited staffing with consolidation of the service indicated through clinical consultation.

The Maternity service delivers both obstetric-led and midwifery-led care models, providing choice to people in their pregnancy journey. Other components of care delivered by the service include:

- **Maternity Care Team:** The multidisciplinary care team provide comprehensive care through antenatal clinics, birthing suites, and postnatal wards. The staffing model includes Midwives, Allied Health Professionals, and Obstetricians.
- **Midwifery Continuity of Care Model:** A midwife is allocated to provide care throughout pregnancy, labour and postpartum and includes community-based appointments and home follow-up visits post birth.
- **Diabetes in Pregnancy Program:** The program provides specialised care for pregnant people with diabetes.
- **Specialty Clinics:** The clinics provide pregnancy enhancement programs and clinics for specific conditions such as post-caesarean care.

⁶⁹ Includes 74 separations undertaken at Calvary Bruce Private Hospital during interim arrangements between August and November 2022.

⁷⁰ Transfer is defined as for each TCH Interventional Cardiology separation, there is at least one prior NCH episode of care where the gap between NCH separation date and TCH admission date is 0 to 3 days.

- **Maternity Assessment Area:** An assessment service for pregnancy-related issues such as high blood pressure or decreased foetal movement. The service provides drop-in or scheduled appointments and is currently available 3 days per week between 11:30am to 9pm.
- **To be Launch:** The service is targeted at priority population groups, including Aboriginal and Torres Strait Islander people, refugees and people with perinatal loss.

Over the past 5 years, the maternity service has observed an increasing trend with caesarean deliveries increasing over the same period by 15%, while vaginal deliveries exhibit a declining trend. Consultation with clinicians indicated that approximately 20% of maternity patients choose to birth under the Continuity of Care model, with a goal of 75% in the coming years. This is aligned with current strategies to offer greater choice to women and birthing people.⁷¹

Clinical Grouping	ESRG		2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth 2019-2023
Maternity	721 Antenatal admission	Seps	517	494	578	485	1,065 ⁷²	548	106.0%
		Bed days	632	635	744	623	1,350	718	113.6%
	722 Vaginal delivery	Seps	1,113	1,111	1,102	1,110	1,050	-63	-5.7%
		Bed days	2,433	2,429	2,314	2,341	2,142	-291	-12.0%
	723 Caesarean delivery	Seps	501	511	660	647	576	75	15.0%
		Bed days	1,660	1,780	2,171	2,127	1,869	209	12.6%
	724 Postnatal admission	Seps	126	107	138	101	291	165	131.0%
		Bed days	277	219	307	212	536	259	93.5%
Maternity NCH Seps			2,257	2,223	2,478	2,343	2,982	725	32.1%
Maternity NCH Bed days			5,002	5,063	5,536	5,303	5,897	895	17.9%

Table 36: Maternity Activity for NCH and TCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Exclude Unqualified Neonates, Chemotherapy and Renal Dialysis, Organ Procurement care type and Unknown care type. Acute care type only. Overnight beds calculated at 365 days at 85% occupancy. Same day beds calculated at 240 days at 170% occupancy.

Other operational considerations influencing the current care delivery of maternity and gynaecology services include:

- The increase in the volume of caesarean deliveries, indicating an increasing requirement for all-restrained theatre capacity.
- The current combined gynaecology and obstetrics inpatient and outpatient service delivery model with shared infrastructure between the two services highlights that the patient experience is compromised, especially for patients with early pregnancy complications or foetal loss alongside maternity patients and well babies.
- Encouraging women to deliver under the Midwifery Continuity of Care model
- Lack of dedicated psychology services has led to an increased reliance on the specialist Perinatal Mental Health Service.
- Current infrastructure is not fit for purpose.

⁷¹ ACT Government. 2022. Maternity in Focus: The ACT Public Maternity System Plan 2022-2032. Accessed from: https://www.act.gov.au/data/assets/pdf_file/0006/2324355/Maternity-in-Focus-ACT-System-Plan-2022-2032.pdf

⁷² The high increase in antenatal and postnatal admissions has been associated with administrative changes, which saw this activity being coded as admitted patient activity, inconsistent with the historical trend. See Appendix 5.

Opportunities and future considerations for the maternity service include:

Type	Opportunity / Improvements / Future Directions for Consideration
Service delivery	Expanding for the Midwifery Continuity of Care model to include home birthing and community-based options.
	Exploring a Birthing on Country model to support Aboriginal and Torres Strait Islander people on their pregnancy journey.
	Establishing an Early Pregnancy Assessment Unit for people in early stage or at risk of pregnancy loss.
Enablers	- Building upon existing outpatient services to include better access to post-operative clinics, specialty clinics - Consideration for separate gynaecology and maternity spaces.

Table 37: Strategic directions for Maternity Services for NCH

Future Direction

The future direction for maternity services is centred on ensuring that it is operating to the full extent of the RDL-4 services scope, to support the current and projected ACT North catchment to access maternity services across the care continuum of women and birthing people.

Strengthening the outpatient model and support to maternity patients presenting to ED is vital in order for NCH to manage the projected demand from within ACT as well as the surrounding NSW regions who may choose to birth at ACT.

A unified ACT public maternity service, aimed to deliver consistent care across both sites is a key objective and is aligned with CHS objectives in establishing clinical networks across ACT. This will provide further support for a shared workforce model across both hospitals.

The recent review⁷³ into birth centre options for the ACT was undertaken to explore the feasibility of different birthing centre models. The findings of this report will be considered as part of ongoing facility planning, aligned to the maternity strategies within this CSP.

9.7 Special Care Nursery

The Special Care Nursery (SCN) provides immediate care for newborns at and over 34 weeks gestation without identifying additional foetal risk within a 14-cot unit. The unit provides acute short-term respiratory support prior to retrieval and will accept that back transfer of premature babies from TCH and convalescing babies from TCH on low flow oxygen. The unit is supported by Visiting Medical Officer Paediatricians. The model of care has a paediatrician on call for 24-hours accepting new admissions on the day they are on call.⁷⁴

Clinical consultation noted that better coordination and transfer between Neonatal Intensive Care Unit (NICU) and SCN services is critical to the ongoing management of qualified neonates across the ACT. Workforce challenges associated with paediatric sub-specialties within ACT persist and influence care delivery for this cohort.

⁷³ ACTHD. 2024. Northside Birth Centre Feasibility Study.

⁷⁴ ACTHD. 2023. Review of Special Care Nursery Cot Capacity in ACT Public Hospitals.

Over the past five years, activity within the SCN at NCH has remained relatively stable, despite a decreasing trend in bed days.

Clinical Grouping		2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth
Qualified	Seps	432	491	531	530	438	6	1.4%
Neonates	Bed days	2,480	2,494	2,545	2,586	2,359	-121	-4.9%

Table 38: Qualified Neonates Activity for NCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Exclude Unqualified Neonates, Organ Procurement, Chemotherapy and Renal Dialysis. Acute care type only.

Future Strategies

As the maternity service expands with the ACT North population projections, SCN services and capacity will be required to meet the associated demand. Noting the limited paediatric sub-speciality workforce across ACT, enhanced and coordinated integration with TCH Neonatal Services to care for unwell babies that present to NCH is required.

9.8 Paediatrics Service

There is no dedicated paediatric inpatient service at NCH. The majority of paediatric activity is via the ED and admitted to the ED short-stay for observation for non-complex presentation. Small volumes may be admitted to an inpatient ward for ongoing care, as deemed clinically appropriate. Otherwise, paediatric patients are transferred to TCH to receive inpatient care, which accounts for 92% of total CHS paediatric activity.

It is important to note that with most of the population growth projected to occur in the ACT North regions including an additional 15,485 children by 2031, the requirement for enabling paediatric patients to receive the required care at NCH needs to be considered.

In 2022/23, paediatric activity at NCH increased by 55.7%, despite the lower volume compared to CHS. This was primarily for non-surgical injuries (79), ear and upper respiratory infections (67), oesophagitis and gastroenteritis (59), viral illnesses (54) and abdominal pain (45).

Hospital/ Facility	Clinical Grouping		2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth
NCH	Acute- Paediatrics	Seps	476	502	769	427	741	265	55.7%
		Bed days	477	513	772	428	751	274	57.4%
TCH	Acute- Paediatrics	Seps	7,898	7,325	8,131	7,537	8,837	939	11.9%
		Bed days	13,092	12,922	13,779	12,546	17,508	4,416	33.7%
Total CHS Seps			8,374	7,827	8,900	7,964	9,578	1,204	14.4%
Total CHS Bed days			13,569	13,435	14,551	12,974	18,259	4,690	34.6%

Table 39: Paediatric Activity for NCH and TCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Exclude Unqualified Neonates, Organ Procurement, Chemotherapy and Renal Dialysis.

Consultation outlined that paediatric activity occurring in the private sector may potentially be due to limited availability of paediatric surgical short stay and together with projected population growth, there may be an opportunity for a paediatric short-stay inpatient unit to support a degree of paediatric high volume, low-complexity surgery, particularly for non-complex ENT Surgery. This will be further developed as part of ongoing service development work being undertaken by CHS.

Future Strategies

Noting the projected population growth in ACT North residents aged 0 to 16 years, establishing and strengthening paediatric care capacity and capability delivered at NCH through networked arrangements with TCH paediatric sub-specialities will ensure that these patients receive timely and appropriate care. A 23-hour paediatric inpatient capacity supported by the Paediatric Medicine medical and nursing workforce and integrated with TCH Paediatric Services for discharge planning

and ongoing care is considered essential to managing current and future demand and leading to good clinical outcomes for this cohort.

Opportunities for potentially incorporating a paediatric surgical short-stay model at NCH to care for appropriate surgical same-day non-complex surgical cases have been indicated.

9.9 Mental Health

NCH provides mental health inpatient services within the 22-bed Acacia ward for adult acute mental health care and the 20-bed Banksia ward for older persons' mental health. Inpatient wards and the ED at NCH are supported by a Consultant Liaison Service, providing assessment and treatment for a varied cohort of mental health patients, on a short-term basis.

Given the Territory-wide nature of the CHS Division of Mental Health, Justice Health and Alcohol and Drug Services (MHJHADS), patients can access a range of community-based and TCH inpatient services. Consultation outlined that transfer to TCH-based mental health wards for patients with complex mental health conditions and/or presentations occurs regularly. The lack of a Mental Health High Dependency Unit (HDU) at NCH was also noted among clinicians as impeding the care pathway with patients being transferred to the unit at TCH for those services.

NCH also delivers ECT services within the NCH theatre complex, though consultation with clinicians indicated there is limited availability and flexibility for providing this service.

Over the past five years, mental health admitted activity has had an increasing trend, which is consistent with consultation that indicated there is an increasing demand for services and complexity of patients with combined physical and mental health co-morbidities. A reduced LOS has been observed which could be aligned to changing models of care with more care being provided within the community.

Clinical Grouping		2018/19	2019/20	2020/21	2021/22	2022/23	Variance	Growth
Mental Health	Seps	524	591	761	571	589	65	12.4%
	Bed days	11,852	12,751	13,563	11,117	11,761	-91	-0.8%
	ALOS	23.7	23.1	20.7	20.6	20.5	-3.2	-13.5%
Mental Health Bed Requirement		38	41	44	36	38	0	-0.7%

Table 40: Mental Health Activity for NCH and TCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Exclude Unqualified Neonates, Organ Procurement, Chemotherapy and Renal Dialysis. Mental Health care type only. Overnight beds calculated at 365 days at 85% occupancy.

Challenges and operational issues identified through consultation include:

- Ongoing governance and service delivery alignment due to the integration of NCH to CHS.
- Increasing complexity of patients with combined mental health and drug and alcohol concerns.
- Increasing complexity among people presenting with mental health conditions to the ED.
- Shortage of specialised staff and gaps in training, impacting quality of care for complex mental health cases.
- Limited availability for appropriate discharge locations such as nursing homes and community support services, resulting in patients including those no longer requiring acute medical or mental health care, staying in hospital longer.
- Perceived stigmatisation of older persons with mental health concerns.

Future Strategies

To enhance current and future mental health services, the provision of comprehensive, integrated care across inpatient and community settings needs to continue. This can be achieved by integrating all NCH services into the CHS MHJHADS service, incorporating NCH within Territory-wide service models.

Integration with medical specialties to deliver combined mental and physical health care to manage comorbidities holistically among mental health patients and foster a more seamless healthcare experience for patients.

Expansion of innovative care models, such as community-based programs and Rapid Access Clinics, aimed at managing mental health crises promptly, reducing the need for hospital admissions and supporting patients in their homes, is vital in managing projected demand.

Infrastructure enables that support the specialised needs, including purpose-built spaces designed to ensure safety, patient dignity, and access for related services, will be further explored during facility planning. It will be expected that future service design addresses stigma through patient-centered environments and reduces mental health care segregation from general medical services as key priorities.

Opportunities and future considerations for the mental health service include:

Type	Opportunity / Improvements / Future Directions for Consideration
Service delivery	Development of rapid access clinics and specialised outpatient services to prevent hospital admissions and manage mental health crises more effectively
	Expand the role of NCH ED as a designated unit to better care for mental health presentations and support the mental health patient journey.
	Enhancing capacity and specialisation including expansion of specialised beds (e.g., secure extended care, older persons' mental health).
Models of Care	Adoption of in the home models and other alternatives to traditional inpatient care.
	Development of an integrative model of care that bridges mental health with medical and surgical subspecialties, addressing the patient needs comprehensively and holistically.
	Regionalising care so that services such as High Dependency Unit, Low Dependency Unit and discharge planning can be effectively managed in a coordinated effort with NCH and TCH, aimed at streamlining patient care and avoiding unnecessary transfers between the two sites.
Enablers	Expansion of research capabilities by establishing a NCH research office on site to support staff including providing mentorship and guidance to staff interested in research.
	Increasing collaboration with local universities to strengthen the attraction, recruitment, retention and training of mental health staff across medical, nursing and allied health disciplines.
	Implementing digital solutions that facilitate better communication and coordination between inpatient and community services.

Table 41: Strategic Directions for Mental Health Services for NCH

9.10 Drug and Alcohol

There is currently no Drug and Alcohol service provided at NCH. Patients accessing these services at TCH.

A Drug and Alcohol Consultation Liaison service should be established to support NCH with patients with drug and alcohol co-morbidities, linking it to the TCH inpatient unit for complex patients.

CHS Executive consultation indicated that changes at TCH may require the relocation of the 10-bed Detoxification Unit thus providing an opportunity to review the existing model of care and determine the required bed capacity for future service delivery.

9.11 Sub-Acute Services

NCH delivers sub-acute inpatient care across various wards, specifically within 5-West and 4-East through the general medical model, and the Older Persons Mental Health ward⁷⁵ through the NCH Mental Health Service. There is no inpatient rehabilitation capacity currently. Allied health services are provided to inpatients to minimise functional decline.

A level of integration exists between NCH and TCH which includes shared care arrangements, specialist referral pathways and cross-facility educational sessions. However, it was noted through consultation, a lack of comprehensive outpatient services for older people including memory clinics and falls services.

Inpatient and outpatient rehabilitation services are delivered from UCH. Clinical consultation indicated the need for clearer pathways and coordination for sub-acute and non-acute patients between NCH and UCH.

Clinical consultation consistently outlined the increasing volume of non-acute patients who are waiting for nursing home placement within acute beds. This has contributed to significant increases in ALOS across NCH, impacting efficient patient flow and bed management. This has been observed by the increasing ALOS from 14.3 days in 2018/19 to 16.8 days in 2022/23.

Overall, sub-acute activity within NCH has increased over the past five years by 30.4% representing an annual change of 6.9%, which is more than two times greater than the projected population growth anticipated for ACT North residents aged over 65 years (3.1%). Maintenance separations accounted for highest proportion of NCH sub-activity in 2022/23 and represented an annual growth of 19.0% from 2018/19 to 2022/23. This level of growth is unsustainable in the long term and efforts to better care for non-acute patients across CHS are being explored in collaboration with ACTHD.

Care Type	Values	2018/19	2019/20	2020-21	2021-22	2022-23	Variance	Growth 2019-2023	CAGR 2019-2023
GEM	Seps	37	32	39	23	29	-8	-21.6%	-5.9%
	Bed days	342	237	385	275	314	-28	-8.2%	-2.1%
	ALOS	9.2	7.4	9.9	12.0	10.8	2	17.1%	4.0%
Maintenance	Seps	246	278	426	367	493	247	100.4%	19.0%
	Bed days	3,515	4,470	5,537	5,973	8,265	4,750	135.1%	23.8%
	ALOS	14.3	16.1	13.0	16.3	16.8	2.5	17.3%	4.1%
Palliative Care	Seps	163	116	128	111	126	-37	-22.7%	-6.2%
	Bed days	831	829	642	789	968	137	16.5%	3.9%
	ALOS	5.1	7.1	5.0	7.1	7.7	2.6	50.7%	10.8%
Psychogeriatric	Seps	3	-	4	-	-	-	-	-
	Bed days	25	-	37	-	-	-	-	-
Rehabilitation	Seps	48	-	-	-	-	-	-	-
	Bed days	866	-	-	-	-	-	-	-
Total NCH Separations		497	426	597	501	648	151	30.4%	6.9%
Total NCH Bed days		5,579	5,536	6,601	7,037	9,547	3,968	71.1%	14.4%

Table 42: Sub-Acute Activity for NCH and TCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Exclude Unqualified Neonates, Organ Procurement, Chemotherapy and Renal Dialysis. Sub-acute type only.

⁷⁵ Older Person mental health activity is captured under the mental health care type, as there was low volumes reported against the psychogeriatric care type.

Acknowledging the challenges outlined above, opportunities and future considerations for sub-acute service delivery include:

Type	Opportunity / Improvements / Future Directions for Consideration
Service delivery	Exploring sub-acute inpatient care approaches within NCH, consistent with its future role.
Model of Care	Developing integrated pre-hab and rehab components of care with existing medical and surgical patient pathways.
Enablers	Implementing digital tools to support pre-hab and rehab in the home approaches to minimise the need for inpatient rehabilitation.

Table 25: Strategic directions for Sub-Acute Services for NCH.

Palliative Care

Palliative Care Services are delivered across inpatient, outpatient and community settings, through the 27-bed inpatient unit at CHH and a Consultant-Liaison Service to TCH and NCH. The service also delivers community-based multidisciplinary palliative care service to patient's homes including RACFs. CHH is a Territory-wide Service and provides care to Southern NSW LHD residents with inter-facility transfers as required.

Between 2018/19 and 2022/23, there was a 16.9% growth in palliative care separations and 2.8% growth in bed days, demonstrating that demand and access to the service increased during that period. A key challenge is ensuring there is adequate inpatient capacity to continue to serve the community.

Currently, there are no other palliative care beds across the Territory. Given the increasing palliative care bed days at NCH, additional capacity within the acute hospital for symptom management and patient monitoring has been indicated.

Hospital/ Facility	Care Type	Values	2018-19	2019-20	2020-21	2021-22	2022-23	Variance	Growth
CHH	Palliative Care	Seps	394	378	355	337	459	65	16.5%
		Bed days	5,818	6,058	5,639	5,108	5,981	163	2.8%
		ALOS	14.8	16.0	15.9	15.2	13.0	-1.7	-11.8%

Table 43: Palliative Care Activity for NCH and TCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Exclude Unqualified Neonates, Organ Procurement, Chemotherapy and Renal Dialysis. Sub-acute type only.

Some challenges and issues expressed during the consultation included:

- Delays in patient transport impacting timely patient admissions and in some cases, patients being admitted after-hours.
- Workforce challenges related to recruitment and retention difficulties, burnout and limited appeal for junior staff to work within palliative care services.
- Increasing demand for community home-based palliative care services while remaining responsive to patients' needs and ensuring adequate resourcing to enable access across the Territory.
- Limited paediatric palliative care services across the ACT.

Opportunities and future considerations for the palliative care service include:

Type	Opportunity / Improvements / Future Directions for Consideration
Service delivery	- Expanding palliative care capacity in the acute inpatient setting at NCH. - Exploring the feasibility of developing a paediatric palliative care service.
Workforce	Incorporating community palliative care nurses in an integrated way when patients are admitted to improve continuity of care.
Models of Care	Strengthening the outpatient clinic model to enable early access to the service and better support the patient journey.

Table 44: Strategic directions for Palliative Care Services at Clare Holland House and NCH.

9.12 Ambulatory Services – Care Close to Home

Ambulatory services at NCH refer to those non-admitted patients services delivered from NCH or by NCH staff, and include:

- Geriatric Rapid Acute Care Evaluation (GRACE)
- Hospital in the Home (HiTH)
- Zita Mary Clinic infusion service.

GRACE provides a Territory-wide outreach service for RACFs, preventing hospital admissions, and supporting post-discharge follow-ups. This includes acute care support for residents living in RACFs, which account for the majority of referrals for the service. As well as providing education to RACFs to empower RACF staff to better manage aspects of acute care and recognise the deteriorating patient. The GRACE team will also attend to all geriatric patients who have been admitted to North Canberra Hospital, post discharge. The staffing model includes nurses and a Consultant Geriatrician.

HiTH provides inpatient care within the community setting for acute conditions that require ongoing clinical governance, monitoring, treatment and input which would otherwise be provided in a traditional hospital bed. The service provided by nursing and medical staff with access to acute physiotherapy, occupational therapy, pharmacy, nutrition, social work, diagnostic pathology, and radiology services as required. The table below represents the historical trend for HiTH, showing a 14.0% annual increase between 2018/19 and 2022/23, which exceeds the projected population annual growth (2.4%) forecasted to 2041. Despite the increase in HiTH activity, it still only accounts for 4.8% of total NCH separations.

	2018-19	2019-20	2020-21	2021-22	2022-23	Variance	Growth 2019-2023	CAGR 2019-2023
HiTH Flagged Seps	904	976	1,216	1,371	1,526	622	68.8%	14.0%
HiTH bed days	3,791	4,702	4,877	5,686	6,045	2,254	59.5%	12.4%
Calculated HiTH beds	9	12	12	14	15			
% HiTH of Total Seps	3.1%	3.4%	3.6%	5.2%	4.8%			

Table 45: HiTH Activity for NCH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Exclude Unqualified Neonates, Organ Procurement, Chemotherapy and Renal Dialysis. All care types. Beds calculated on same day assumption of 240 days and 170% occupancy.

The Zita Mary Clinic provides infusions and injections, as well as maintaining central venous access devices, including port-a-caths and PICC lines. The staffing model includes registered nurses, pharmacists, doctors and administration staff. The service operates 5 days per week between 9am and 5pm, with occasional extended hours depending on treatment reactions. The service is supported medically by the CMO however there is a reliance on MET for escalation. Clinical consultation indicated that there are long wait times for consecutive treatments and complex patient casemix including those requiring oncology care. Until 2021, this service administered chemotherapy, which was transferred to the Canberra Region Cancer Centre at TCH.

While it is recognised that consolidation of cancer care is aligned to better coordination and patient outcomes, clinical consultation revealed the lack of chemotherapy on-site at NCH has fragmented aspects of the patient journey particularly for breast cancer patients, noting the majority of breast cancer surgery is undertaken at NCH and there is a Breast Care Drop-in Clinical delivered from NCH.

Care Closer to Home Services work closely in a multidisciplinary approach with Allied Health, Pharmacy and the ED. The services work closely with inpatient units to facilitate discharge and maintain the care continuum.

Key challenges outlined during clinical consultation include:

- Limited capacity due to infrastructure constraints and limited staffing.
- Need for increased resources to conduct complex home medicine reviews effectively.
- Inconsistent availability of medical staff, leading to reliance on MET calls for patient issues.
- Long wait times for consecutive treatments, contributing to patient delays.
- Challenges in recruitment and retention of staff, compounded by shortages of primary care providers and education needs.
- Recognise the need for a more efficient transfer mechanism between Northside and Southside services to prevent unnecessary discharges and re-admissions, ensuring continuity of care.

The below table outlines improvements and opportunities that aim to address the key challenges observed and projected future demand, while contributing to bed-saving initiatives.

Type	Opportunity / Improvements / Future Directions for Consideration
Service delivery	▪ Exploring the feasibility of operational model changes to all three services including extended operating hours and introducing weekend clinics, to reduce waitlists and manage patient flow.
	▪ Establishing a Rapid Access Team for patients in ED with a risk of long hospital admission due to social and/or physical issues.
	▪ Exploring re-establishing day chemotherapy for selected conditions.
Workforce	▪ Enhancing allied health and nursing workforce capacity and capability.
	▪ Exploring staffing models to include Nurse Practitioners and Allied Health to enable more comprehensive care.
Models of Care	▪ Redesigning the model of care to ensure specific patients (e.g., CAP, HAP, Cellulitis, Mastitis and Pyelonephritis) receive automatic referral to HITH to reduce the likelihood of condition worsening.
	▪ Increasing networking between the HITH service at TCH.
	▪ Increasing capacity for mobile MDT services as part of HITH.
Enablers	▪ Exploring telehealth opportunities to enhance service delivery and patient care.
	▪ Adopting new information technology systems to ensure seamless operation and minimise disruptions.
	▪ Improving partnership and integration with community pharmacies, aged care facilities and community services.

Table 46: Strategic directions for Care Close to Home at NCH.

Future Strategies

The provision of Care Closer to Home services comes with extensive evidence on patient benefits as well as a reduction in the need to admit patients. Recognising that the current growth across inpatient activity is unsustainable in the long term, these services will be critical in supporting NCH to manage current and future demand requirements. The focus on enabling HiTH to continue to contribute to hospital admission avoidance through early identification and assessment within the ED is key to managing the projected future demand.

The GRACE service will need to be expanded in anticipation of the projected aging population estimated to grow by 56.0% across the Territory by 2041.

Executive and clinical consultation indicated that a Northside Hospital redevelopment provides an opportunity to re-establish a day-chemotherapy service for selected conditions to enable access for ACT North residents to this service close to home while enabling NCH workforce to regain and retain these specialised skills.

9.13 Non-Admitted and Outpatient Services

Clinical consultation outlined that there are minimal outpatient services and clinics available at NCH to deliver care post discharge or as an alternative to admission. Specialist clinics at NCH include:

- Neurology (7-8 clinics per week)
- General Medicine (6 clinics per month)
- Endocrinology (6-7 clinics per week)
- Diabetes Education (2 clinics per week)
- Orthopaedics (Post Operative Only) (2 clinics per month)
- Lymphoedema (1 clinic per month)
- Respiratory (2 clinics per week)
- Renal (2 clinics per month)
- Pain Management (2 clinics per month)
- General Surgery (16 clinics per month)
- Ear, Nose and Throat (ENT)
- Gynaecology (3 clinics per week)
- Cardiology (10 clinics per month)
- Infectious Diseases (1 clinic per week)
- Breast Care Drop-In Clinic. (5 clinics per week)
- Vascular (2 clinics per month)
- Wound Nurse Clinic (10 clinics per week)

Non-admitted healthcare services face several significant challenges. One major concern is the adequacy of current infrastructure where services are expected to be delivered. Aligning facilities and long-term healthcare needs, particularly in expanding critical services, is required.

Disparities in access to care among different socioeconomic and geographic groups further complicate the landscape. Providing equitable healthcare services in the underserved NCH remains a significant challenge and will only continue with the projected population demand. These disparities highlight the need for integrated services planning and resource allocation. Many healthcare services operate in isolated silos, leading to limited coordination between different disciplines. This fragmentation can hinder the delivery of comprehensive care and reduce the efficiency of healthcare services.

Data continues to remain a challenge for non-admitted services, however the implementation of the DHR provides an opportunity to improve the data collection, and inform service design with an evidence based approach. Table 47 shows that there has been an increasing trend in non-admitted activity across key clinical areas.

Clinical Unit	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	Variance	Growth 2024-2019	CAGR 2024-2019
Geriatric & Rehabilitation	2,846	6,729	8,623	1,519	6,102	6,790	3,944	138.6%	19.0%
Medical	53,401	61,284	60,080	54,338	43,484	49,632	-3,769	-7.1%	-1.5%
Surgical	10,762	5,921	7,233	6,475	9,099	14,900	4,138	38.4%	6.7%
Mental Health	698	201	10	72	34	5	-693	-99.2%	-62.1%
Other	14,067	15,884	17,253	23,176	26,209	31,941	17,874	127.1%	18%
Total Non-Admitted Patient OOS	81,774	90,019	93,199	85,580	84,928	103,268	21,494	26.3%	4.8%

Table 47: Non-Admitted Patient Occasions of Service (OOS), NCH, 2018/19-2023/24. Source: Canberra Health Performance Profile Series 1, 2024. Includes COVID-related OOS in 2021/22 and 2022/23. A 85% data quality and completeness confidence indicator has been applied.

Future Directions

To support non-asset solutions and enhanced virtual care capability for NCH, detailed planning for outpatient, ambulatory and non-admitted patient models is required. This is to understand model options, such as a virtual hospital, centralised ambulatory care centre, colocation with inpatient services, extended operating hours, aligned with the required clinical workforce and associated infrastructure requirements, aligned with future demand and outcomes of operational efficiency strategies for ED and inpatient services.

9.14 Medical Imaging

Diagnostic radiology services are provided at NCH and include X-ray, Ultrasound, Cardiac Ultrasound, Computed Tomography (CT) and MRI through a contracted service on-site. The unit services all inpatient units, the ED and theatres. Outpatient services are provided though due to in-hospital demand for radiology, this service has had to be restricted. The Medical Imaging Service also provides services to CHH.

The table below represents the current medical imaging infrastructure at NCH.

Modality	Current Available	Commentary
Xray	2	- Includes 1 Phillips Digital Diagnostic and 1 Siemens Hybrid Fluoroscopy/general xray machine. - The hybrid limits Xray capabilities, effectively reducing the service to a single room, with demand growth this is proving problematic. - Fluoroscopy is almost exclusively used for speech pathology swallow screening.
CT	2	- Includes 1 Canon Aquilion One Genesis (stroke, cardiac and interventional scanner) and 1 Canon Prime. - The stroke/cardiac and intervention capabilities should not be on the same scanner - Stroke capabilities should be on at least two scanners for redundancy.
Ultrasound	4	- Includes 1 GE ultrasound and 3 Canon – High end diagnostic ultrasound machines. - Elastography or contrast ultrasound functionality. - Services have been affected in 2023/24 by reduced radiologist hours.
OPG	1	- Dental imaging – co located in main xray room due to space constraints. - Rarely used as CT offers greater diagnostic capability.
Mobile Xray	2	Includes 1 Siemens Elara Max and 1 Mira Max.
Image intensifier	2	- Includes 1 Phillips Zenition and 1 Phillips Veradius – - Used in theatres and the limited redundancy impacts theatre scheduling when either machine is down for maintenance or repairs.

Modality	Current Available	Commentary
Echo Ultrasound	2	- Includes 1 Phillips Infinity and 1 Phillips Epic US - Included phased array probes and paediatric probe. - ECG compatible. - Insufficient capacity to meet the demand for stress ECHO/TOE in theatre. - Shared with Cardiologists and Advance Trainee, limiting ability to provide services across the hospital. - No redundancy in this provision.
MRI	1	- Includes a 3T machines. - Privately contracted service. - Future consideration can include having this service as part of the public hospital imaging suite would be advantageous and increase availability. - Advances in MRI technology speed, increase in diagnostic capability and lack of radiation dose, this modality is forecasted to surpass CT as an imaging modality over the next 10 years.

Table 48: Current Medical Imaging Infrastructure, NCH. Source: NCH, 2024.

Clinical consultation consistently indicated that the limited availability of an on-site radiologist, currently available for 4 hours per weekday, has impacted NCH's ability to deliver on interventional radiology services aligned with its role as a RDL-4 service. NCH relies on an off-site radiologist reporting service for medical imaging results. Limited capacity for interventional radiology along with limited radiologist availability has impacted the service delivery as outlined through consultation.

Challenges and issues include:

- The current radiologist staffing model is not meeting the increasing demand for radiology as outlined during the consultation with limited radiologist coverage during business hours impacting support for real time consultation and clinical decision-making.
- Limited ability to provide all required diagnostic procedures due to lack of equipment.
- Limited radiographer and sonographer workforce for specialist diagnostic procedures such as cardiac sonography and interventional radiology.
- Lack of dedicated spaces to undertake pre- and post-procedure care.
- The current model with off-site reporting has indicated delays and inaccuracies in imaging results.

Opportunities and future considerations include:

Type	Opportunity / Improvements
Service delivery	▪ Exploring feasibility for onsite interventional radiology capability and capacity.
	▪ Exploring feasibility for a public MRI at NCH.
	▪ Establishing a single diagnostic and interventional department in one location.
	▪ Establishing an outpatient imaging service located outside the hospital to alleviate inpatient demand.
	▪ Implement extended service hours to manage demand and reduce wait times.
Workforce	▪ Consideration for a staff radiologist model.
	▪ Enhancing radiographer and sonographer workforce to increase service availability.
Models of Care	▪ Improving care pathways for patients requiring radiology at off-site locations such as CHH and UCH.

Table 49: Strategic directions for Radiology / Medical Imaging Service at NCH.

9.15 Pharmacy

NCH Pharmacy services include the provision of clinical medication management as well as medication dispensing and distribution services for inpatient, outpatient and patients being cared for at home. Pharmacy currently provides comprehensive inpatient services to most clinical areas, including medical, surgical, critical care, maternity, mental health, HITH and palliative care (CHH service). The pharmacy also provides comprehensive outpatient services to the pre-admission clinic, home-based palliative care services, outpatient clinics, HITH and the Zita Mary Clinic. The service also provides medication safety, antimicrobial stewardship, clinical informatics, and managing the digital health record transition. As noted with the transfer of chemotherapy to TCH, the loss of specialised skills was noted through clinical consultation. This has influenced workforce attraction and retention for the Pharmacy service.

Challenges and issues included:

- Balancing clinical work with training, strategic development, and future service needs.
- Difficulty in attracting experienced hospital pharmacists, and the need to rely on junior or community pharmacists with limited hospital experience.
- Infrastructure deficiencies including lack of automation (e.g., robotics, automated dispensing) and outdated infrastructure impacting efficiency.

Opportunities and future considerations include:

Type	Opportunity / Improvements / Future Directions for Consideration
Service delivery	▪ Establishing a pharmacy informatics and data management service.
	▪ Establishing a Compounding Unit with aseptic suites.
	▪ Exploring feasibility for a CHS wide re-packaging pharmacy which includes centralised repacking and unit dose dispensing service.
	▪ Exploring feasibility for a CHS centralised procurement service as part of a networked approach to pharmacy services.
	▪ Establishing a private PBS-approved pharmacy on site at NCH.
	▪ Establishing pharmacist post-discharge and follow-up clinics.
	▪ Incorporating pharmacy robotics as aligned to the CHS Pharmacy Network Strategy.
Workforce	▪ Expanding the role of clinical pharmacist specialisation aligned to the medical and surgical disciplines at NCH.
	▪ Exploring remote/offsite work to support skilled staff shortages.
	▪ Exploring feasibility for incorporating medication checking technicians.
Enablers	▪ Exploring feasibility for robotics and automated distribution methods including Lansom tubes, automated dispensing cabinets and unit dose dispensing/repackaging.

Table 50: Strategic Directions for Pharmacy Service at NCH.

9.16 Pathology

Pathology services are delivered by ACT Pathology, within a hub and spoke model. NCH acts as a branch of the main laboratory located at TCH. It delivers essential diagnostic and testing services in hematology, chemistry, and microbiology to support acute services within NCH. The service operates 24 hours a day, 7 days a week, to manage routine and urgent testing requirements for NCH while more complex tests are transferred to TCH for processing.

There is a Point of Care Service with blood gas analysers and other point of care instruments located within the ED and ICU. The service is supervised by ACT Pathology staff.

ACT Pathology operates exclusively within CHS, providing both hospital-based and community-based pathology services through GP referrals, even for patients with no prior interactions with CHS. The structure supports an integrated tertiary and primary care territory-wide network with ACT Pathology managing referrals that could otherwise go to private labs and runs collection centres in hospitals and community health centres to enhance accessibility. For the ACT North region, the courier system facilitates sample transport from sites at Gungahlin, Belconnen, and UCH to NCH and, if the test is beyond the capacity of NCH, to TCH. The distribution of tests between TCH and NCH is under review to consider increasing capacity at NCH to optimise workload balance.

Key challenges outlined during clinical consultation include:

- Timely transfer for complex tests between NCH and TCH is reliant on a courier service and with anticipated increased demand, this will continue to be challenged.
- Perceived workforce challenges with delivering a 24-hour, 7-day-a-week service particularly as demand for complex testing increases.
- Existing infrastructure is limited with space constraints noted.

Future strategies

Recognising the increasing demand aligned to the projected population growth of the Northside of ACT, there will be a need to consider the current and future capacity of pathology services at NCH, within the ACT Pathology Network. A key aspect of this includes increased capacity for on-site tests aligned to its RDL, acting as a spoke-site for the TCH hub as well as for dedicated transport capacity for out of hours period. Establishing a phlebotomy service in the ED at NCH is currently under consideration, noting that TCH incorporates this service within ward rounds.

9.17 Allied Health Services

Allied health disciplines deliver care across all inpatients within NCH with some services delivering outreach clinics to the community across the ACT.

Dietetics

The department delivers inpatient services for nutritional assessment including comprehensive evaluations and planning, as well as outpatient services including to the Gestational Diabetes Clinic. The department also ensures compliance of Food Services with dietary needs and menu standards.

Pastoral and Spiritual Care

The services are delivered primarily to inpatients, providing spiritual and emotional support on a 24-hour 7-day a week model. However, consolidation indicated that current workforce constraints has limited the ability to provide weekend cover.

Physiotherapy

In collaboration with the Multidisciplinary Team (MDT), physiotherapy services facilitate rapid assessment, management and discharge planning across the inpatient setting and deliver some non-admitted services. Specific service roles include:

- Inpatient services to the Intensive Care Unit, Coronary Care Unit, Surgical Ward, Stroke Unit, Medical Assessment Unit, General Medical Wards, HITH, ED Short Stay Unit, Maternity and Women's Health Unit, Mental Health Wards and Day Surgery Unit and Outpatient cardiac rehabilitation.
- Ambulatory Physiotherapy services include Advanced Musculoskeletal, Women's Health and Infants, Lymphoedema and Advanced Practice Physiotherapy in the ED.
- Education and exercise sessions for individuals and groups in Musculoskeletal, Lymphoedema and Women's and Infants.

Psychology, Social Work and Aboriginal Liaison Service

This department delivers services to inpatients and outpatients across the three disciplines. The Aboriginal Liaison Service provided cultural support including smoking ceremonies and facilitating family gatherings. It operates currently during weekdays only.

The Psychology service focuses on acute mental health and older persons including people with dementia. The service delivers individual therapy and group programs and has been experiencing workforce challenges.

The Social Work service provides extensive inpatient services including family meetings, case conferences and is involved in legislative processes such as the Health Justice Partnership. It delivers the services 7-days a week in-hours with after hours and weekend cover.

Speech Pathology

The department delivers an inpatient service including assessment, diagnosis and treatment for people with communication and swallowing difficulties. This includes babies with feeding difficulties.

Occupational Therapy

Occupational Therapy receives inpatient referrals generally from acute medical wards, or the MAPU, inpatient surgical wards for pre-operative and post-operative care and inpatient mental health units. Other inpatient settings areas of NCH that refer to OT include maternity wards as well as Zita Mary Clinic and HITH.

Across the allied health disciplines, challenges and issues outlined through consultation include:

- Long wait times for outpatient services, exacerbating acute issues and resulting in frequent ED presentations.
- Limited outpatient and community services, with significant gaps in nutrition and rehabilitation services.
- Bed block and delayed discharge due to lack of available rehabilitation services and appropriate discharge planning.
- Increasing demand for patient care, leading to longer waitlists.
- Insufficient physical space for equipment and patient care, particularly for bariatric patients.
- Lack of seamless integration between acute care and community health services.
- Fragmented care due to limited coordination between allied health services and community resources.
- Ongoing workforce challenges across all disciplines to enable inpatient and outpatient service delivery and across the care continuum.
- Infrastructure not fit for purpose to support MDT meetings, teaching and supervision requirements.

Opportunities and improvements for allied health services were noted through clinical consultation with the table below outlining the key areas of focus.

Type	Opportunity / Improvements / Future Directions for Considerations
Service delivery	Exploring hub and spoke model for centralising specialised equipment and expertise in selected hub locations and using satellite locations for less complex care
Models of Care	Expanding the Advanced Practice Models of Care by developing allied health advanced practice roles and specialised clinics to manage complex patient cases across medical and surgical disciplines.
	Implementing integrated care models that bridge acute care with community and outpatient services.
	Enhancing case management and MDT approaches to address complex patient needs.
Enablers	Increasing use of telehealth to improve access for patients
	Developing and adopting comprehensive digital platforms for pre-hab and rehabilitation, including educational videos, personalised monitoring, and automated feedback systems.
	Exploring technology such as Artificial Intelligence to automate administrative functions.
	Enhancing the Digital Health Record (DHR) to include more detailed allied health data, such as client demographics and specific conditions.
	Promoting public education sessions for chronic conditions among the community.

Table 51: Strategic directions for Allied Health Service at NCH.

9.18 Clinical Support and Corporate Services

Patient Flow Unit

The NCH Patient Flow Unit includes Patient Flow, After Hours Hospital Management, Nursing and Midwifery Resource Office, Discharge Planning Unit and Patient Support Services. The objective of each service is as follows:

- Patient Flow Unit:** Coordinate system-wide hospital patient flow to ensure the patient receives the right care, in the right place, at the right time. This includes ongoing liaison with ACTAS, which has over time become the predominant patient transport provider for CHS.
 - A key limitation of ACTAS serving as a patient transport service, is that it fulfils the Territory's role for emergency services with priority given to those people within the community requiring urgent medical assistance.
- After Hours Hospital Management:** Coordinate hospital wide operations including emergency staffing solutions, emergency response, oversight of patient flow and operational activity.
- Nursing and Midwifery Resource Office:** Provide recruitment and resourcing solutions for emergent short- and long-term vacancies and provide nursing and midwifery resourcing and recruiting.
- Discharge Planning Unit:** Ensure discharge planning is patient centred, adheres to best practice and facilitates the safe and timely transfer of care.
- Patient Support Services – Ward Service Officers:** Provide support and assistance to clinical and other frontline staff to patient care, manual handling, emergency response and transportation of patients.
- Patient Support Services – Ward Clerks:** Provide general administrative, clerical and support services to clinical areas and assistance with patient flow.

Opportunities and future considerations include:

Type	Opportunity / Improvements / Future Directions for Consideration
Service delivery	Exploring a centrally coordinated patient flow unit through an Operations Centre that has network functionality and integrates with TCH and ACTAS/NSW Ambulance Service.
Workforce	Strengthening and expanding the Ward Service Officer role to have service stream focus for intra-hospital transfers and frontline clinical support services.
Models of Care	Expanding the Discharge Planning Unit with a focused approach to speciality discharge planning.
Enablers	Expanding the Nursing and Midwifery Resource Office to clinical service area's workforce management.
	Implementing a Discharge / Transit Lounge with capacity to care for complex discharges.

Table 52: Strategic directions for Patient Flow Services at NCH.

Corporate Services

Corporate Services encompass a range of non-clinical and back of house functions that support the overall operations and management of NCH.

Opportunities and future considerations include:

Type	Opportunity / Improvements / Future Directions for Consideration
Enablers	Increasing technology integration within clinical spaces including ICT and Bio-Medical Integration.
	Building integrated Education and Training partnerships with universities and academic health centres to enhance training and development on-site.
	Developing a comprehensive digital strategy to enable a digital hospital model with the integration of new technologies, remote services, and robotics to deliver care safely and efficiently.
	Expanding technological support within NCH to enable the delivery of virtual services to community settings.

Table 52: Strategic directions for Corporate Services at NCH.

9.19 Current Infrastructure Table

The table below represents the current built capacity of NCH, noting that this varies slightly from the current funded capacity. Consultation indicated that the hospital is frequently occupied beyond funded capacity, which has implications for clinical service delivery where the workforce required may not be aligned.

	Beds / Spaces	Built Capacity	Comment
Acute Inpatient Units / Beds/ POC			
Intensive Care Unit (ICU)/ Coronary Care Unit (CCU) combined	5 funded 5 surge	10 beds	Includes, Close Observation and Palliative Care Beds which are located in proximity to the nurse station.
Endoscopy	0 funded 10 surge	10 beds	- No funded beds. 10 Escalation Surgical Beds – 6 Beds, 4 Chairs
Surgery Ward (6W)	28 funded	28 beds	The Ward provides inpatient care to adults who require surgical services, including general, orthopaedic, urology, breast, colorectal/ gastroenterological, ear nose and throat (ENT), eye, gynaecological surgery, and dental procedures.
Medical and Surgical Wards			
Medical Assessment and Planning Unit (MAPU)	24 funded	24 beds	The MAPU is a short stay, assessment and planning inpatient ward that provides care to adult patients who require acute medical speciality services such as Cardiology, Neurology, Gerontology, Respiratory, Gastroenterology and General Medicine.
5 West	24 funded	24 beds	5 West (5W) provides inpatient care to adult patients who require acute and subacute medical speciality services. - There are 4 additional unfunded/surgical beds.
Stroke Unit	6 funded	6 beds	The Stroke Unit (SU) provides inpatient care to adult patients who require acute medical speciality services for Neurology and are part of an existing ward.
Ward 4 East	24 funded 6 surge	30 beds	Ward 4 East (4E) provides inpatient care to adult patients who require acute and subacute medical speciality services such as Cardiology, Neurology, Gerontology, Respiratory, Gastroenterology, General Medicine and Palliative Care.
Ward 4 West	24 funded 4 surge	28 beds	- Ward 4 West (4W) accepts patients from MAPU as the main source of admissions, the Emergency Department (ED) and direct admissions to the ward. - The unit also receives patients stepping down from the Intensive Care Unit (ICU), Coronary Care Unit (CCU) or the Stroke Unit. - Other transfers may occur from the acute Mental Health (MH) unit or Surgical Inpatient Ward for patients that require acute medical and nursing interventions.
Mental Health			
Inpatient Beds Adult MH Unit	20 funded 2 surge	22 beds	Acacia is an adult mental health unit.
Inpatient Beds – Older Persons MH Unit	16 funded 4 surge	20 beds	Banksia is a mental health unit for older persons.
Maternity			
Maternity and Women's Health Ward	18 funded 3 surge	21 beds	
Maternity Assessment Area	6 outpatient beds	6 beds	- The Maternity Assessment Area (MAA) is an outpatient service that is currently operating Wednesday to Friday, 11.30am – 9pm. - Once the division is fully staffed, the MAA will recommence as a five-day week service.
Special Care Nursery	11 funded 3 surge	14 beds	Neonatal unit.
Birth Centre	2 birthing rooms 1 assessment room	3 beds	The Birth Centre provides Continuity Midwifery which is a low-risk midwifery model of care. It is delivered through the Birth Centre.
Birthing Suites	6 funded birthing rooms 1 assessment room	7 beds	
Operating Theatres			
Operating theatre	4.5 theatres funded 2.5 surge	7 theatres	- Funded for 4.5 Theatres - 4 all day elective and a 0.5 PM only emergency theatre. - Due to a fire in December 2022, theatre activity was

	Beds / Spaces	Built Capacity	Comment
			affected until October 2023.
Procedural rooms	1 procedure room funded	1 room	Utilised for ECT, Cardioversions, PICC lines and occasionally Bronchoscopy and Endoscopy procedures.
Recovery (Stage 1)	8 bays (1-8)	8 beds	Eight monitored bays.
Recovery (Stage 2)	12 bays (9-20)	12 beds	- Bays 9-16 are monitored bays next to stage 1 PACU. - Bays 17-20 have 2 fixed monitored bays and 2 mobile monitored bays (predominately used for overflow of Stage 2 and storage of equipment).
Recovery (Stage 3)	10 Chairs	10 beds	10 Recliner chairs. - Portable observations machine used in this area, no fixed monitoring
Emergency Department			
Emergency Department Acute	28 beds	23 beds/spaces	- The Emergency Department (ED) Acute provides acute care to complex adults and children. - Includes triage assessment area - Referral types to ED are ACTAS, NSWAS, GPs, Local Regional Hospitals, Community Services, AFP, VMO Rooms, and members of the public (self-presenting). - Additional space for chairs.
ED Fast track	15 spaces	15 spaces	ED Fast Track is a dedicated area in the ED to treat ambulant, non-complex adults and children who are likely to be discharged in two hours.
ED short stay	15 funded	15 beds	- ED Short Stay Unit (SSU) is a short stay inpatient unit for patients that require observations, specialist assessment and diagnostics. - The SSU provides care to adults and children with an expected length of stay less than 24 hours.
Resuscitation bays	2 bays	2 bays	
Procedure Rooms	2 rooms	2 rooms	
Other spaces	1 Class N isolation room 1 mental health assessment room	2 rooms	
Diagnostic Radiology			
Diagnostic – Radiology (X-ray)	2 machines	2 machines	- Includes 1 Phillips Digital Diagnostic and 1 Siemens Hybrid Fluoroscopy/general xray machine. - The hybrid limits Xray capabilities, effectively reducing the service to a single room, with demand growth this is proving problematic. - Fluoroscopy is almost exclusively used for speech pathology swallow screening.
Radiology - CT	2 machines	2 machines	- Includes 1 Canon Aquilion One Genesis (stroke, cardiac and interventional scanner) and 1 Canon Prime. - The stroke/cardiac and intervention capabilities should not be on the same scanner - Stroke capabilities should be on at least two scanners for redundancy.
Radiology - Ultrasound	4 machines	4 machines	- Includes 1 GE ultrasound and 3 Canon – High end diagnostic ultrasound machines. - Elastography or contrast ultrasound functionality. - Services have been affected in 2023/24 by reduced radiologist hours.
Radiology – OPG	1 machine	1 machine	- Dental imaging – co located in main x-ray room due to space constraints. - Rarely used as CT offers greater diagnostic capability.
Radiology – Mobile Xray	2 machines	2 machines	Includes 1 Siemens Elara Max and 1 Mira Max.
Radiology – Image intensifier	2 machines	2 machines	- Includes 1 Phillips Zenition and 1 Phillips Veradius. - Used in theatres and the limited redundancy impacts theatre scheduling when either machine is down for maintenance or repairs.
Radiology/Cardiology – Echo Ultrasound	2 machines	2 machines	- Includes 1 Phillips Infinity and 1 Phillips Epic US - Included phased array probes and paediatric probes. - ECG compatible. - Insufficient capacity to meet the demand for stress ECHO/TOE in theatre. - Shared with Cardiologists and Advance Trainees, limiting ability to provide services across the hospital. - No redundancy in this provision.
Radiology - MRI	1 machine	1 machine	- Includes a 3T machine. - Privately contracted service.

	Beds / Spaces	Built Capacity	Comment
			- Future considerations can include having this service as part of the public hospital imaging suite would be advantageous and increase availability. - Advances in MRI technology speed, increase in diagnostic capability and lack of radiation dose, this modality is forecasted to surpass CT as an imaging modality over the next 10 years.
Diagnostic – Pathology			
Laboratory Service onsite			
Inpatient collections	-		Trolleys to wards.
Outpatient Collection	2 chairs	2 chairs	
Non-Admitted Services			
Outpatients	9 clinic rooms 1 treatment room	10 spaces	Clinic room for a range of general medical outpatient services
Infusion Chairs	8 chairs 1 bed	9 spaces	This refers to the Zita Mary Clinic
Gym	1 gym	1 gym	Multipurpose physiotherapy gym used for staff and student education, cardiac rehab, staff meetings and women's health education.
Hospital in the Home /GRACE	11 – 16 spaces	16 spaces	- Hospital in the Home (HITH) services are provided out of 6E. - HITH provides access to healthcare for patients in their own homes. - The physical bed space may be considered for inpatient occupancy in times of extreme capacity escalation or external emergencies for up to 16 beds/treatment spaces. - The space does not have dedicated physical beds. - Ward can capacity to escalate into HITH beds/treatment spaces in times of need.
CHH			
Inpatient Unit	20 funded beds 4 surge	24 beds	Provides tertiary and integrated level palliative care to the community of the ACT and surrounding districts.

Table 53: Current Bed Table, NCH. Source: NCH, 2024 and informed by NCH executive and clinical stakeholders.

10. Future Service Directions

The future service directions as outlined under the respective services in Section 9, provide for the future state of NCH.

The process for identifying and developing included bringing the insights and experience of over 300 CHS, NCH and TCH executive, clinical and non-clinical stakeholders and services partners through an extensive coordinated consultation, utilising the outcomes of the previous consultation with consumers⁷⁶ and presenting proposed strategies and opportunities to key CHS and NCH executive and senior clinical stakeholders. The agreed strategies were presented and endorsed by the Northside Hospital Clinical Services and Facility Planning Project Steering Committee.

A future NCH will include:

- **Delivery of clinical services to the full scope of the RDL-4 capability.**
- An **expanded ED service** to manage current and future demand, in particular to better care for paediatric patients.
- An **integrated Cardiology and CCU service** to enable the whole of patient journey management and consolidate clinical governance arrangements for this cohort.
- **Interventional cardiology capability** with on-site cardiac catheterisation lab aligned to a RDL-4 service.
- **Supporting emergency surgical cases** that present via the ED.
- Becoming a **high-volume low-complexity surgical centre** to build a critical mass for planned General Surgery, Urology, Gynaecology, Ophthalmology, and Endoscopy and be integrated with the TCH surgical workforce model.
- An **integrated and networked Breast Cancer Surgery service** with TCH Cancer Services.
- A **coordinated theatre complex approach** to enable including the CHS networked workforce resourcing and allocation.
- An **expanded Midwifery Continuity of Care** model.
- A **Birthing on Country model** to support Aboriginal and Torres Strait Islander people on their pregnancy journey.
- **Enhanced and coordinated integration of Special Care Nursery service** with TCH Neonatal Services to care for unwell babies.
- A **23-hour paediatric inpatient service**, supported by paediatric medical and nursing expertise and networked with the TCH Paediatric Service.
- An **integrated mental health service** within CHS MHJHADS, incorporating NCH within Territory-wide service models
- A **Drug and Alcohol Consultation Liaison service** to support the care of people with drug and alcohol co-morbidities.
- Establishing **sub-acute inpatient care models** to support the care of Maintenance/non-acute patients and facilitate timely discharge to other care settings.
- **Expanding palliative care capacity** in the acute inpatient setting.
- **Expanding Care Close to Home services** to support hospital avoidance strategies.
- Re-establish a **day-chemotherapy service for selected conditions** to enable access for ACT North residents to this service close to home.
- **Expanded non-admitted and outpatient services and infrastructure** to manage future demand and contribute to ED and hospital avoidance strategies.
- **Integrated virtual care delivery models** to care for people in the home.
- **Advanced Practice service models** to manage complex patient cases across medical and surgical disciplines.

⁷⁶ ACT Government. 2023. Phase 2 – Northside Hospital Consultation Report – Designing ACT health services for a growing population. Accessed from: https://yoursayconversations.act.gov.au/download_file/view/9781/2488

- **On-site interventional radiology capability and capacity** aligned to a RDL-4 service.
- **Enhanced imaging and pathology diagnostic services.**
- **Established clinical service networks** across the CHS for ICU, Cardiology, Neurology, Gastroenterology, Ophthalmology, Gynaecology, Maternity, Special Care Nursery, Older Persons, Mental Health, Cancer Care, Radiology and Pharmacy.

Other initiatives suggested, as part of the development of CSP, that were not progressed are outlined in Appendix 5. It is understood that future investment in implementing the future strategic directions will be subject to further feasibility review.

Contemporary service delivery

The Northside Hospital Project redevelopment enables CHS to review how services have been and will be delivered. Strategies including addressing current operational challenges, developing and implementing models of care, strengthening care across other settings including virtual care delivery and increasing the bed base to manage future demand, are articulated below. The objective is to deliver optimal patient care and outcomes now and in the future.

- Expand the acute inpatient base to manage projected demand.
- Establish paediatric inpatient capacity and capability to better manage clinically-appropriate paediatric presentations.
- Expand ED services and associated infrastructure including:
 - expanding the role of Nurse Practitioners and Advance-Practice Allied Health Clinicians within the ED and spaces
 - established models for managing care for patients with behaviours of concern and/or mental health conditions
 - expanding its role as a designated mental health service.
 - strengthening the care of paediatric patients.
- Develop integrated care pathways with medical and surgical specialties to streamline the patient journey from ED to inpatient wards.
- Improve transfer arrangements among NCH, TCH and UCH.
- Develop an integrated model of care that combines mental health and physical health disciplines to address patients' needs holistically.
- Explore Allied Health Advance Practice models to enable inpatient care aimed at supported discharge, and outpatient care delivery as alternative options to hospital admission.
- Explore programs to identify and support frequent users of the ED to reduce unnecessary re-presentations aligned to an expanded HITH service.
- Review and redesign models of care across all disciplines to improve access to services locally and virtually.
- Strengthen proactive discharge planning and improve integration with community-based services to ensure reduced readmission.
- Develop a workforce plan to ensure recruitment, retention and succession planning for locally based services.
- Review functional relationships to core services and diagnostic care areas as part of the Northside Hospital redevelopment.
- Establish a culturally appropriate and safe environment for Aboriginal people.

Flow reversal of clinically appropriate ACT North Residents from TCH

Noting that 34.5% of ACT North Residents presented to the TCH ED and 44.6% were admitted to TCH in 2022/23, a future NCH with contemporary service delivery models, delivering care to the full extent of their RDL-4 services and enhanced capacity, will be equipped to better manage local demand. This will aim to relieve pressure from TCH as the Territory's tertiary centre to manage complex care.

- Identify and care for ACT North resident patient cohorts who can be managed within NCH RDL-4 services across selected medical, surgical and maternity services.

Clinical sub-specialisation

With projected population estimated for the ACT North region, the aging of the population and increasing complexity among patients, there is a need for NCH to establish a level of clinical sub-specialisation aligned to high volume presentations and evolving needs of the community.

- Expand medical services into sub-specialities aligned to the casemix for NCH for Gastroenterology, Respiratory Medicine and Geriatric Medicine.

Enhancing surgical and procedural capacity and capability

Efficient and high-quality service delivery is a key strategic objective for CHS. A future NCH will be a key contributor within CHS to enable consolidation of surgical services that allows CHS to realise the associated quality and operational benefits and minimise transfers to TCH for services that can safely be provided for an acute public hospital with RDL-4 services.

- Establish a networked high-volume low-complexity service for the provision of low-complexity procedures for all ACT residents.
- Establish a networked ophthalmology centre to deliver high-volume ophthalmology cases at NCH, while preserving the required casemix at TCH to maintain its status as the ACT's Trauma Centre.
- Establish cardiac catheterisation labs at NCH for the provision of interventional cardiology procedures as aligned to its RDL-4.
- Establish an intervention radiology service aligned to the scope of the RDL-4 Radiology service to minimise transfers to TCH for diagnostic interventional cases.
- Enhance diagnostic and complex endoscopy service.
- Explore feasibility for robotic surgery capability for specialities such as urology and colorectal surgery.
- Review the management of Category 3 patients across CHS so that the waitlist accurately reflects clinical need and progression of disease to enable clinically-appropriate prioritisation.

Integrated network models

There are opportunities to streamline care processes, establish standardised practice and utilise the workforce within an integrated approach to deliver comprehensive services at the right place and right time.

- Explore a single, coordinated bed and transport management system across CHS.
- Explore the integration of the NCH ICU into the NSW ICU Network and build upon the CHS ICU Network.
- Expand the role of Special Care Nursery to enhance neonatal service capacity across ACT.
- Establish an integrated and networked breast service to enable access to care for breast symptoms, imaging, biopsy for diagnosis, staging and further work-up.
- Establish a networked gynaecology service to enable delivery of sub-specialty care e.g. urogynaecology.

- Establish an integrated gynae-oncology network model utilising TCH and NCH capability and capacity.
- Establish Drug and Alcohol Consultation Liaison Service at NCH, within the CHS MHJHADS.
- Establish a networked Pharmacy model, supported by automation and robotics and a central procurement model.
- Implement a surgical network model with services strategically distributed between NCH and TCH, to enable resource efficiency, patient safety, and high-quality care.
- Strengthen collaboration with TCH to share resources and enhance training opportunities across both sites, to improve patient flow and resource utilisation.
- Review network arrangements with relevant Southern NSW services including patient admission criteria and discharge procedures to facilitate transfer-back for ongoing management and care for Southern NSW residents.

Care of the older person

Aligned to the ACT Health Services Plan, care will be provided for older people across the care continuum with the required emergency, inpatient and non-admitted patient services. The focus is to support older people in hospital regardless of their admitting speciality, provide supported discharge and incorporate the required follow-up care post admission.

- Enhance inpatient acute and sub-acute care models for older people
- Develop model of care to manage and support complex dementia patients, in collaboration with the Older Persons Mental Health Service.
- Establishing a BPSD unit to support the care and management of people experiencing BPSD Strengthening maternity services
- Establishing clear pathways for improved coordination and transfer between acute care and sub-acute care services within CHS and RACFs.

Strengthening maternity services

A future NCH will continue to focus on delivering high-quality and holistic care to women and birthing people on the northside of the Territory.

- Expand the Midwifery Continuity of Care model.
- Explore a Birthing on Country model to support Aboriginal and Torres Strait Islander people on their pregnancy journey.
- Establish an Early Pregnancy Assessment Unit for people in early stage or at risk of pregnancy loss.
- Establish separate gynaecology and maternity inpatient and outpatient spaces to enhance the patient experience for the two patient cohorts.

Expanding non-admitted patient services

By providing timely and effective care in outpatient settings, future non-admitted services at NCH will help to prevent unnecessary hospital admissions, easing the burden on inpatient facilities and delivering integrated healthcare across the care continuum.

- Establish Rapid Access Clinics to support hospital avoidance based on high-volume clinical specialities such as Urology, Gynaecology, Psychiatry, Cardiology, Neurology, Geriatric Medicine and Paediatrics.
- Expand the HITH Service at NCH.
- Reestablish chemotherapy services as part of the Zita Mary Clinic service model.
- Establish separate gynaecology and maternity non-admitted spaces.
- Development of an integrated Ambulatory area with purpose-built clinical and therapeutic areas, modern staff areas, and embedded virtual capabilities.
- Expand screening, prevention and early intervention services.

- Integrate care around priority needs cohorts (children, older people, mental health, chronic disease).
- Explore hospital avoidance and discharge programs and greater integration with existing outreach and community and primary care services to support patients being seen in the right place and at the right time.

Integrated allied health inpatient and outpatient services

Enhancing the coordination and delivery of care by ensuring patients receive comprehensive support and collaboration across various health disciplines to improve overall service efficiency and patient outcomes.

- Establish Rapid Access Clinics with Nurse Practitioners and Advance-Practice Allied Health clinicians to support hospital avoidance.
- Strengthen radiology services to deliver inpatient and outpatient care models including establishing an outpatient imaging service located outside the hospital to alleviate inpatient demand.
- Explore the feasibility of a public MRI at NCH.
- Develop a workforce plan to align hospital expansion with increased projected activity across inpatient and outpatient services.

Digitally enabled service

A future NCH will allow for innovative care models to be designed to enable patients to receive care in the home, support clinicians in their care delivery, avoid hospital admissions through remote monitoring and virtual hospital models and empower patients by promoting proactive health management and early intervention.

- Implement the ACTHD Digital Health Strategy to guide CHS in developing future technologies and models that align with the delivery of care for NCH, including formalised network arrangements to ensure reliable and appropriate support and clinical expertise can be provided to NCH.
- Implement hybrid models of care for heart failure, combining in-person visits with digital monitoring and remote therapeutics.
- Expand and enhance virtual/telemedicine, mobile devices, and remote monitoring technologies that support care management outside the hospital, including appropriate ICT infrastructure.
- Explore increased delivery of virtual health service models to facilitate timely access to specialist services and support care in the hospital, outpatient, community and home environment.
- Establish appropriate environments and safe spaces for privacy and use that support virtual and telehealth delivery.
- Improve connectivity through virtually enabled spaces to improve timely access to specialist and emergency/critical care service.
- Explore a new model of care that incorporates remote patient monitoring to support patients in receiving care closer to home or at home. Including virtually facilitated/assisted models with clinical and non-clinical supports facilitating/assisting in the room, while virtually connecting to specialist services.
- Build a workforce skilled in virtual and telehealth models of care.

Sustainable infrastructure and healthcare

With the rising costs of healthcare delivery, a future NCH needs to remain at the forefront of care while sustainably operating its services, seeking new ways that deliver care at lower costs, maximising outcomes and developing value-based and intelligent infrastructure⁷⁷ solutions.

- Redevelop NCH as part of the Northside Hospital Project to support the provision of integrated, contemporary, safe, and sustainable services and improve patient outcomes and experience, including increased infection control, low stimulation environments, supporting new models of care and virtual models, flexible spaces for paediatrics, mental health, activities of daily living and allied health spaces, and improving the patient experience.
- Expand of virtual health technology and infrastructure, as part of non-asset solution development, to improve access to care.
- Create partnerships to improve patient flow and access to services closer to home.

⁷⁷ Srinivasan, R. and Parlikad, AK. 2020. Value based and intelligent asset management. In: Crespo Márquez, A., Macchi, M., Parlikad, A. (eds) Value Based and Intelligent Asset Management. Springer, Cham. https://doi.org/10.1007/978-3-030-20704-5_6

11. Forecasted Service Need

To provide the context for the future demand and align this to future forecasted service needs, Figure 7 demonstrates the ACT North projected population by age, against historical and base case projected separations and bed days.

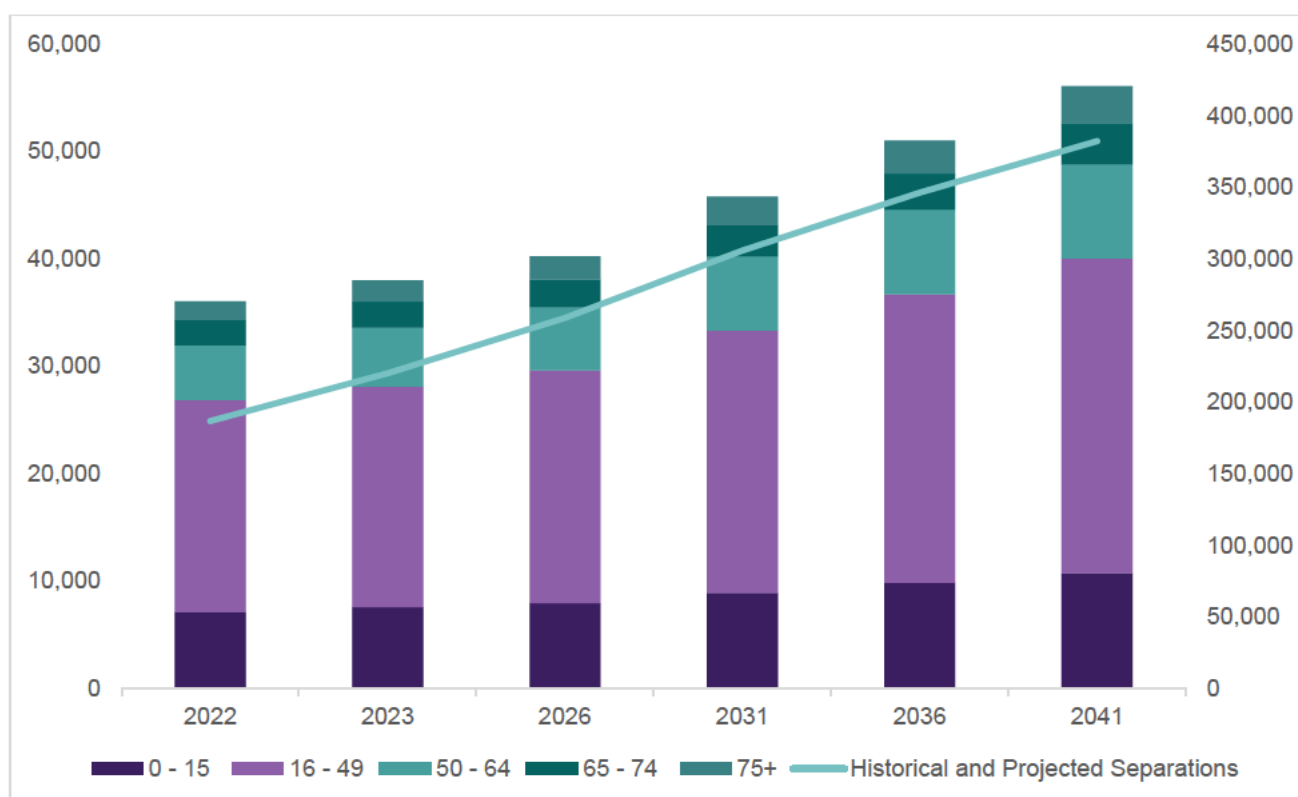


Figure 7: ACT North Population Projections by Age and Historical and Projected Activity Trend. Source: ACT Government, 2023 Latest ACT Population Projections; 2021/22 HPA Base case Projections, ACTHD, 2024. Includes acute care type only.

The above demonstrates that population growth across all age groups is a key driver for the increase in future bed requirements within the base case⁷⁸.

An analysis was undertaken to understand the base case. Furthermore, during the development of the CSP, 2022/23 Projections by consulting firm HPA were developed. These are not yet approved for use however, were provided for comparison. A review of the 2022/23 HPA Projection extract has been undertaken, indicating negligible changes to activity projected to 2041. Once the 2022/23 HPA Projection data is approved for release by ACTHD, a review and update of the base case and scenarios is to be undertaken.

⁷⁸ The base case projections represent projected activity on the assumption that current trends in activity will remain relatively the same, with a conservative approach to changing models of care by 2041.

11.1 Emergency Department

The table below represents the base case projected activity, with an annual increase of 2.8% to 2041 for all ED presentations. This growth exceeds the current population projection growth for ACT North at 2.4% to 2041. The below included Southern NSW and interstate residents which may be reflected in the elevated growth rate.

Age Group	2019	2021	2023	2026	2031	2036	2041	Variance	Growth 2021-2041	CAGR 2021-2041
00-15	10,923	9,798	10,417	11,736	13,138	14,663	16,065	6,267	64.0%	2.5%
16-49	29,093	31,184	31,310	35,519	40,556	45,760	50,547	19,363	62.1%	2.4%
50-64	7,440	8,102	8,020	9,083	10,647	12,066	13,303	5,201	64.2%	2.5%
65-74	4,790	4,849	5,066	5,975	7,155	8,013	8,874	4,025	83.0%	3.1%
75+	6,275	6,360	6,932	8,776	11,102	13,580	15,683	9,323	146.6%	4.6%
Total NCH ED	58,521	60,293	61,745	71,089	82,598	94,082	104,472	44,179	73.3%	2.8%

Table 54: Base case ED Projections to 2041. Source: 2020/21 HPA ED Projections, ACTHD, 2024. Rounding has been applied.

To align a scenario of reversing 50% of ACT North Residents from TCH from 2031 to 2041 together with ED avoidance strategies, the ACT North population growth was applied to the current 2022/23 activity, as shown in the table below.

Age Group	2023	2026	2031	2036	2041	Variance	Growth 2021-2041	CAGR 2023-2041
00-15	9,581	10,222	11,387	12,684	14,129	4,548	47.5%	2.2%
16-49	27,722	29,502	32,726	36,302	40,268	12,546	45.3%	2.1%
50-64	7,546	8,225	9,495	10,961	12,653	5,107	67.7%	2.9%
65-74	4,514	4,876	5,546	6,308	7,175	2,661	58.9%	2.6%
75+	7,074	7,873	9,411	11,249	13,446	6,372	90.1%	3.6%
Total NCH ED	56,437	60,698	68,564	77,503	87,671	31,234	55.3%	2.5%

Table 55: Scenario ED Projections to 2041. Source: 2022/23 ABF ED Extract, ACTHD, 2024. Rounding has been applied.

The projected infrastructure requirement based on the scenario indicated a future requirement for 94 ED spaces by 2041.

	2021	2023	2026	2031	2036	2041
Adult Admitted	12	11	12	14	16	18
Adult Non admitted	24	23	24	28	31	36
Total Adult ED spaces	37	34	37	41	47	53
Paediatrics Admitted	2	2	2	3	3	3
Paediatrics Non admitted	5	5	5	6	6	7
Total Paediatrics ED spaces	7	7	7	8	9	10
Resus bays	4	4	4	5	5	6
EDSSU	13	12	13	14	16	18
Isolation and Other Rooms	6	6	6	7	8	9
Total Projected Bed Requirement	65	61	65	74	83	94

Table 56: Calculated ED Bed Requirements based on Scenario ED Projections to 2041. Source: 2020/21 HPA ED Projections, ACTHD, 2024.⁷⁹ Rounding has been applied.

⁷⁹ ED spaces calculated based on NSW Health ED Treatment Space methodology with 18hrs with 25% admission rate and ED KPI Target LOS of 6 hrs for admitted and 4hrs for Non-admitted. ED Short Stay based on 4,000 presentations per bed. Resuscitation Bay based on 15,000 presentations per bed. Isolation Room based on 10,000 presentations per room.

11.2 Medical Services

The table below represents the base case projected medical activity, with an annual increase of 3.0% in separations and 2.5% in bed days to 2041 for all medical presentations.

It is important to note that the 3.3% annual increase in Day Only Medical separations indicates a potential issue with how historical day only medical activity has been classified and it is likely to reflect a combination of non-admitted care that was coded as 'admitted' and other erroneous misclassification such as planned chest pain assignment. It is also reflective that the same day activity is including unplanned day medical activity which can be assumed to be ED Short Stay activity. Thus, when facility planning, there may be opportunity to redesign the service, so this activity is occurring within an ambulatory care centre / non-admitted service rather than an acute bed.

By 2041, the base case projected a bed requirement of 182 overnight beds and 49 same day beds, noting it does not differentiate between ICU, CCU, separations with partial or full HITH admission and EDSSU.

Stay Type	Values	2019	2021	2023	2026	2031	2036	2041	Variance	Growth 2021-2041	CAGR 2021-2041
Overnight	Seps	7,998	8,883	8,812	9,880	11,764	13,607	15,084	7,086	69.8%	2.7%
	Bed days	31,507	36,227	35,049	38,467	44,838	52,640	56,545	25,038	56.1%	2.3%
	ALOS	3.9	4.1	4.0	3.9	3.8	3.9	3.7	0	-8.1%	-0.4%
Day Only	Seps	7,638	10,434	10,344	12,663	15,597	17,999	19,936	12,298	91.1%	3.3%
	Bed days	7,638	10,434	10,344	12,663	15,597	17,999	19,936	12,298	91.1%	3.3%
Total Seps		15,636	19,317	19,156	22,543	27,361	31,606	35,020	19,384	81.3%	3.0%
Total Bed day		39,145	46,661	45,393	51,130	60,435	70,639	76,481	37,336	63.9%	2.5%
Overnight Projected Beds		102	117	113	124	145	170	182	81	56.1%	2.3%
Same Day Projected Beds		19	26	25	31	38	44	49	30	91.1%	3.3%
Total Projected Beds		120	142	138	155	183	214	231	111	62.4%	2.5%

Table 57: Base case Medical Projections to 2041. Source: 2020/21 HPA ED Projections, ACTHD, 2024.⁸⁰ Includes acute care type, medical partition. Includes acute care type, medical partition and 16 and over. Excludes Chemotherapy, Renal Dialysis, Unqualified Neonates, Qualified Neonates, Perinatology and Obstetrics and 00-15 years. Rounding has been applied.

A scenario to consider reverse-flowing of 50% of ACT North Residents from TCH for selected overnight SRG⁸¹ activity was undertaken. This scenario also includes an adjustment for length of stay, recognising that operational bed management and patient flow challenges will be addressed and adjusting for the same day activity by applying the total ACT North population growth to account for future demand.

The scenario results in a projected bed total of 175 overnight beds and 39 same day beds, which is aligned to future strategies to increase inpatient capacity to manage demand while implementing other demand strategies to manage ALOS and encourage non-admitted activity.

⁸⁰ Medical overnight beds calculated at 85% occupancy. Medical same day beds calculated at 170% occupancy for 240 days.

⁸¹ SRGs used in scenario include: 11 Cardiology, 14 Endocrinology, 15 Gastroenterology, 21 Neurology, 24 Respiratory medicine, 27 General medicine, 54 General surgery, 49 Orthopaedics, 25 Rheumatology, 52 Urology, 81 Drug & alcohol, 17 Haematology and 71 Gynaecology.

Stay Type	Values	2023	2026	2031	2036	2041	Variance	Growth 2023-2041	CAGR 2023-2041
Overnight	Seps	8,812	9,880	13,934	16,170	18,056	9,244	104.9%	4.1%
	Bed days	35,049	29,640	41,802	48,510	54,168	19,119	54.5%	2.4%
	ALOS	4.0	3.0	3.0	3.0	3.0	-1.0	-24.6%	-1.6%
Day Only	Seps	10,320	11,081	12,476	14,047	15,815	5,495	53.2%	2.4%
	Bed days	10,320	11,081	12,476	14,047	15,815	5,495	53.2%	2.4%
Total Seps		19,132	24,998	26,410	30,217	33,871	14,739	77.0%	3.2%
Total Bed day		45,369	40,721	54,278	62,557	69,983	24,614	54.3%	2.4%
Overnight Projected Beds		113	96	135	156	175	62	54.5%	2.4%
Same Day Projected Beds		25	27	31	34	39	13	53.2%	2.4%
Total Projected Beds		138	123	165	191	213	75	54.3%	2.4%

Table 58: Scenario Medical Activity Projections to 2041. Source: 2020/21 HPA ED Projections, ACTHD, 2024. Includes acute care type, medical partition and 16 and over. Excludes Chemotherapy, Renal Dialysis, Unqualified Neonates, Qualified Neonates, Perinatology and Obstetrics and 00-15 years. Rounding has been applied.

11.3 Surgical Services

The base case projection for surgical activity show that there will be a projected bed requirement for 81 surgical beds (55 overnight and 26 same day) by 2041.

Stay Type	Values	2019	2021	2023	2026	2031	2036	2041	Variance	Growth 2021-2041	CAGR 2021-2041
Overnight	Seps	3,365	3,403	3,326	3,517	3,769	4,072	4,339	936	27.5%	1.2%
	Bed days	11,665	10,714	11,397	12,522	14,108	15,412	17,164	6,450	60.2%	2.4%
	ALOS	3.5	3.1	3.4	3.6	3.7	3.8	4.0	1	25.6%	1.1%
Day Only	Seps	5,688	6,285	6,847	7,647	8,710	9,488	10,472	4,187	66.6%	2.6%
	Bed days	5,688	6,285	6,847	7,647	8,710	9,488	10,472	4,187	66.6%	2.6%
Total Separations		9,053	9,688	10,173	11,164	12,479	13,560	14,811	5,123	52.9%	2.1%
Total Bed Days		17,353	16,999	18,244	20,169	22,818	24,900	27,636	10,637	62.6%	2.5%
Overnight Calculated Beds		38	35	37	40	45	50	55	21	60.2%	2.3%
Same Day Calculated Beds		14	15	17	19	21	23	26	10	66.6%	2.8%
Total Calculated Bed		52	50	54	59	67	73	81	31	62.2%	2.4%

Table 59: Base case Projected Surgical Activity for NCH to 2041. Source: 2021/22 HPA ED Projections, ACTHD, 2024.⁸² Includes acute only, interventional partition and 16 and over. Excludes Chemotherapy, Renal Dialysis, Unqualified Neonates, Qualified Neonates, Perinatology and Obstetrics and 00-15 years. Rounding has been applied.

A scenario was explored that considered the following:

1. Reverse-flow of 50% of ACT North residents at TCH for selected planned surgical services⁸³.
2. Establishing a high-volume low-complexity service at NCH for selected procedures for all ACT residents.

The table below shows by reversing 50% of ACT North residents' planned activity from TCH, there will be an additional projected bed requirement of 8 beds by 2041. When combined with the base case and noting this will likely take effect with the commissioning of the new Northside Hospital, anticipated for 2031, the total bed requirement for surgical services will be 67 beds by 2031 and 89 by 2041.

⁸² Surgical overnight beds calculated at 85% occupancy. Surgical same day beds calculated at 170% occupancy for 240 days.

⁸³ SRGs used in scenario include: 16 Diagnostic GI, 43 Colorectal surgery, 48 Ear, nose & throat/head & neck, 49 Orthopaedics, 50 Ophthalmology, 52 Urology, 71 Gynaecology, 54 General surgery, 24 Respiratory medicine and 15 Gastroenterology. All selected with intervention partition.

Stay Type	Values	2023	2026	2031	2036	2041	Variance	Growth 2023-2041	CAGR 2023- 2041
Overnight	Separations	3,326	3,517	4,227	4,562	4,871	1,545	46.4%	2.1%
	Bed days	11,397	12,522	15,709	17,125	19,024	7,627	66.9%	2.9%
	ALOS	3.4	3.6	3.7	3.8	3.9	0	14.0%	0.7%
Day Only	Separations	6,847	7,647	9,318	10,201	11,261	4,414	64.5%	2.8%
	Bed days	6,847	7,647	9,318	10,201	11,261	4,414	64.5%	2.8%
Total Separations		10,173	11,164	13,545	14,762	16,132	5,959	58.6%	2.6%
Total Bed Days		18,244	20,169	25,027	27,326	30,285	12,041	66.0%	2.9%
Overnight Calculated Beds		37	40	51	55	61	25	66.9%	2.9%
Same Day Calculated Beds		17	19	23	25	28	11	64.5%	2.8%
Total Calculated Bed		54	59	73	80	89	35	66.2%	2.9%

Table 60: Scenario Surgical Activity Projections for NCH to 2041 – Flow Reversal of 50% of ACT North Residents from TCH.
Source: 2021/22 HPA AP Projections, provided by ACTHD, 2024. Includes acute only, interventional partition and 16 and over. Includes selected SRGs only and 00-15 years. Rounding has been applied.

The second scenario below aims to demonstrate the potential bed requirement for a high-volume low-complexity surgical service at NCH for all ACT residents. This resulted in a total bed requirement of 3 additional beds by 2041⁸⁴.

Therefore, when adjusting for ALOS to 3 days to reflect the efficiencies that will be realised by operating a predominately planned surgical service for CHS at NCH and that this could commence ahead of the redevelopment through operational redesign and workforce allocation, the projected bed requirement by 2031 is 67 beds and by 2041, increases to 78 beds.

Stay Type	Values	2023	2026	2031	2036	2041	Variance	Growth 2023-2041	CAGR 2023- 2041
Overnight	Separations	3,326	3,517	4,498	4,808	5,096	1,770	53.2%	2.4%
	Bed days	11,397	12,522	13,493	14,423	15,287	3,890	34.1%	1.6%
	ALOS	3.4	3.6	3.0	3.0	3.0	0	-12.5%	-0.7%
Day Only	Separations	6,847	7,647	9,531	10,419	11,526	4,679	68.3%	2.9%
	Bed days	6,847	7,647	9,531	10,419	11,526	4,679	68.3%	2.9%
Total Separations		10,173	11,164	14,029	15,226	16,622	6,449	63.4%	2.8%
Total Bed Days		18,244	20,169	23,024	24,841	26,813	8,569	47.0%	2.2%
Overnight Calculated Beds		37	40	43	46	49	13	34.1%	1.6%
Same Day Calculated Beds		17	19	23	26	28	11	68.3%	2.9%
Total Calculated Bed		54	59	67	72	78	24	44.9%	2.1%

Table 61: Scenario for Projected Surgical Activity for NCH to 2041 – High Volume Low Complexity (100% of ACT South Residents). Source: 2021/22 HPA AP Projections, provided by ACTHD, 2024. Includes acute only, interventional partition and 16 and over. Includes selected SRGs only and 00-15 years. Rounding has been applied.

⁸⁴ To avoid double-counting of the ACT North residents selected for the high-volume short stay scenario, the scenario is restricted to 100% of ACT South Residents for the selected procedures – See Appendix 5 for list of procedures identified by NCH Surgery Division.

11.4 Operating Theatres and Procedural Rooms

To align projected theatre and procedural requirements to the scenario outputs, the proportion of emergency and planned activity was determined over the projected years as 88% for planned and 12% for emergency. This aligns with the future direction for NCH as the predominately planned surgical centre.

The table below shows the projected theatre requirements⁸⁵ as aligned to the combined surgical services scenario which considered ACT North resident flow-reversal from TCH and a high-volume low-complexity service.

By 2031, it is estimated that by 2031 this equates to 7.2 theatres and by 2041, it is projected that 8.6 theatres will be required to meet demand.

Type	Values	2023	2026	2031	2036	2041	Variance	Growth 2023-2041	CAGR 2023-2041
Planned	Separations	8,952	9,824	12,345	13,399	14,627	5,675	63.4%	2.8%
Emergency	Separations	1,221	1,340	1,683	1,827	1,995	774	63.4%	2.8%
Planned	Theatres	5.0	5.5	6.9	7.4	8.1	3.2	63.4%	2.8%
Emergency	Theatres	0.3	0.3	0.4	0.4	0.5	0.2	63.4%	2.8%
Total	Theatres	5.3	5.8	7.2	7.9	8.6	3.3	63.4%	2.8%

Table 62: Projected Theatres to 2041. Source: 2021/22 HPA AP Projections, provided by ACTHD, 2024. Rounding has been applied. Excludes caesarean theatres at 0.31 by 2041.

For recovery spaces⁸⁶, the projected requirements as aligned to the above theatre projections for 2041 include:

- 15 Stage 1 recovery spaces
- 30 Stage 2 recovery spaces.

Endoscopy

To determine the endoscopy requirement, noting it has been captured above, the table below outlines the potential proposed endoscopy requirement for NCH with an assumption that all ACT North Resident endoscopy at TCH is flow-reversed to NCH.⁸⁷ By 2041, there is a projected requirement for 1.4 endoscopy procedural rooms, supported by 2 Stage 1 and 4 Stage 2 recovery spaces.

Noting that non-admitted patient endoscopy models exist, the future delivery approach for NCH is being further developed as part of ongoing service development work associated with the Future Service Framework process.

	2023	2026	2031	2036	2041	Variance	Growth 2023-2041	CAGR 2023-2041
15-Diagnostic GI Seps	1,609	1,740	1,968	2,126	2,447	838	52.1%	2.4%
Calculated Endoscopy/Procedural Rooms ⁸⁸	0.9	1.0	1.1	1.2	1.4	0.5	52.1%	2.4%

Table 63: Projected Endoscopy Rooms to 2041. Source: 2021/22 HPA AP Projections, provided by ACTHD, 2024. Rounding has been applied.

⁸⁵ Planned theatres based on operating 8 hours per day, 240 days per year with 8 cases at 60 minutes per case. Emergency theatres based on operating 12 hours, 365 days with 60 minutes per case. Rounding has been applied.

⁸⁶ Recover bays calculated at 1.5 spaces per OT for Stage 1 and 3 chair spaces per OT for Stage 2, as per AusHFG HPU B.0520-Operating Suite Revision 7.0, October 2024 and AusHFG HPU B.0270-Day Surgery Procedure Unit, Revision 7.0, March 2022.

⁸⁷ It is important to note that endoscopy at TCH is undertaken in the non-admitted setting thus admitted endoscopy activity for TCH in both Historical and Base case extracts is relatively low.

⁸⁸ Endoscopy/Procedural Rooms based on operating 8 hours per day, 240 days per year with 8 cases at 60 minutes per case.

Cardiac Catheterisation Labs

A scenario was created to demonstrate the potential projected volume for clinically appropriate interventional cardiology activity at NCH, by applying the overall projected population growth to historical 2022/23 NCH activity including those seps in 2022/23 that were transferred to TCH⁸⁹ for interventional cardiology services.

The table below shows that there will be a potential requirement for 0.2 (1) cardiac catheterisation lab.

Clinical and executive consultation expressed that to build redundancy within the system and to account for maintenance and ensure the service can continue to be delivered in the event 1 lab is affected, there is a requirement to plan for 2 cardiac catheterisation labs.

Values	2023	2026	2031	2036	2041	Variance	Growth 2023-2041	CAGR 2023-2041
Intervention Cardiology Seps	201	216	243	274	308	107	53.2%	2.4%
Calculated Cardiac Cath Labs ⁹⁰	0.2	0.2	0.2	0.2	0.2	0.1	53.2%	2.4%

Table 64: Projected Cardiac Catheterisation Labs to 2041. Source: 2021/22 HPA AP Projections, provided by ACTHD, 2024.

11.5 Intensive Care Services

A scenario was created to determine the projected ICU bed requirement by 2041 by applying the overall projected population growth rate to the historical 2021/22 activity and applying an average ICU hours stay of 71.3 and isolating for the ICU flagged activity.

The table below shows that by 2041, there may be a projected requirement for 14 beds.⁹¹

Values	2023	2026	2031	2036	2041	Variance	Growth 2023-2041	CAGR 2023-2041
ICU flagged separations	800	869	997	1,145	1,315	515	64.4%	2.8%
Calculated ICU beds ⁹²	9	9	11	12	14	5.6	64.4%	2.8%

Table 65: Projected ICU beds to 2041. Source: 2021/22 HPA AP Projections, provided by ACTHD, 2024. Rounding has been applied.

⁸⁹ Includes 74 separations undertaken at Calvary Bruce Private Hospital during interim arrangements between August and November 2022.

⁹⁰ Cardiac Catheterisation Labs based on operating 8 hours per day, 240 days per years with 5 cases at 90 minutes per case

⁹¹ Note that this activity is also captured under the medical services section.

⁹² ICU beds calculated at 75% occupancy.

11.6 Maternity Service

The base case for maternity services shows a 1.1% annual change in separations and a declining change in bed days to 2041, which is inconsistent with the projected population growth noted for the Northside regions, particularly with the 39.3% growth in those aged 0 years which can be used as a proxy for births.

By 2041, it is estimated that there will be projected bed requirement for 18 beds, supporting 5 birthing rooms and 0.2 theatre for caesarean deliveries.

ESRG	Values	2019	2021	2023	2026	2031	2036	2041	Variance	Growth 2021-2041	CAGR 2021-2041
721 – Antenatal Admission	Seps	517	578	594	723	774	931	941	363	62.8%	2.5%
	Bed days	632	744	701	828	816	1,011	1,037	293	39.4%	1.7%
722 – Vaginal Delivery	Seps	1,112	1,103	961	996	1,030	1,148	1,232	129	11.7%	0.6%
	Bed days	2,428	2,316	1,925	1,979	1,884	2,127	2,212	-104	-4.5%	-0.2%
723 – Caesarean Delivery	Seps	501	660	587	574	601	674	695	35	5.3%	0.3%
	Bed days	1,660	2,171	1,767	1,616	1,484	1,632	1,682	-489	-22.5%	-1.3%
724 – Postnatal Admission	Seps	126	138	127	122	132	127	148	10	7.2%	0.4%
	Bed days	277	307	268	223	220	194	221	-86	-28.0%	-1.6%
Total Seps		2,256	2,479	2,269	2,415	2,537	2,880	3,016	537	21.7%	1.0%
Total Bed days		4,997	5,538	4,661	4,646	4,404	4,964	5,152	-386	-7.0%	-0.4%
Calculated Beds ⁹³		17	19	16	16	15	17	18	-1	-7.0%	-0.4%
Calculated Birthing Rooms ⁹⁴		5	5	4	4	4	5	5	0.5	10.2%	0.5%
Calculated Caesarean Theatre ⁹⁵		0.1	0.2	0.1	0.1	0.1	0.2	0.2	0.0	5.3%	0.3%
Caesarean Rate		31.1%	37.4%	37.9%	36.6%	36.8%	37.0%	36.1%			

Table 66: Base case Projected Maternity Activity for NCH to 2041. Source: 2021/22 HPA ED Projections, ACTHD, 2024. Includes acute only, Obstetrics SRG and 16 and over. Excludes Chemotherapy, Renal Dialysis, Unqualified Neonates, Qualified Neonates, Perinatology, all other SRGs and 00-15 years. Rounding has been applied.

A scenario was developed to align to the strategies of supporting NCH Maternity services to deliver services to ACT North birthing residents, increase access to the Continuity of Care Model and reduce the caesarean rate, with a forced change of 50% of caesarean deliveries becoming vaginal deliveries. The annual projected population growth rate for women aged between 16 and 49 (2.0%) and holding ESRG length of stay were applied. This is in recognition that residents Territory-wide requiring complex maternity care aligned to RDL-6 services will continue to access services at TCH.

The table below show that by 2041, there will be a projected requirement for 22 beds with 7 birthing rooms and 0.1 theatres for caesarean deliveries.

⁹³ Maternity beds calculated at 80% occupancy.

⁹⁴ Birthing rooms calculated at 300 deliveries per room with 100% vaginal deliveries and 50% caesarean deliveries accounting for those deliveries that commence in a birthing room and become emergency theatre cases when labour doesn't progress.

⁹⁵ Caesarean theatre calculated on emergency theatre requirement.

ESRG	Values	2023	2026	2031	2036	2041	Variance	Growth 2023- 2041	CAGR 2023- 2041
721 – Antenatal Admission	Seps	490	520	574	634	700	210	42.8%	2.0%
	Bed days	588	624	689	760	840	252	42.8%	2.0%
722 – Vaginal Delivery	Seps	1,050	1,114	1,568	1,731	1,911	861	82.0%	3.4%
	Bed days	2,142	2,229	3,188	3,519	3,886	1,744	81.4%	3.4%
723 – Caesarean Delivery	Seps	576	611	337	373	411	-165	-28.6%	-1.9%
	Bed days	1,869	2,017	1,104	1,219	1,346	-523	-28.0%	-1.8%
724 – Postnatal Admission	Seps	102	108	120	114	125	23	23.0%	1.2%
	Bed days	204	217	239	227	251	47	23.0%	1.2%
Total Seps		2,218	2,354	2,599	2,851	3,147	930	41.9%	2.0%
Total Bed days		4,803	5,086	5,219	5,726	6,322	1,519	31.6%	1.5%
Calculated Beds ⁹⁶		16	17	18	20	22	5	31.6%	1.5%
Calculated Birthing Rooms ⁹⁷		4	5	6	6	7	3	58.2%	2.6%
Calculated Caesarean Theatre ⁹⁸		0.1	0.1	0.1	0.1	0.1	0	-28.6%	-1.9%
Caesarean Rate		35.4%	35.4%	17.7%	17.7%	17.7%			

Table 67: Scenario for Projected Maternity Activity for NCH to 2041 – Enhanced service to ACT North Residents and Caesarean rate reduction. Source: 2021/22 HPA ED Projections, ACTHD, 2024. Includes acute only, Obstetrics SRG and 16 and over. Excludes Chemotherapy, Renal Dialysis, Unqualified Neonates, Qualified Neonates, Perinatology, all other SRGs and 00-15 years. Rounding has been applied.

11.7 Special Care Nursery

The projected special care nursery requirements have been aligned to the scenario model for maternity services by applying an assumption of 29%⁹⁹ of ACT North resident vaginal and caesarean delivery separations at NCH, and holding length of stay to 5 days.

By 2041, there will be a projected requirement for 11 special care nursery beds.

Values	2023	2026	2031	2036	2041	Variance	Growth 2023- 2041	CAGR 2023- 2041
Qualified Neonates	413	447	484	534	590	177	42.8%	2.0%
Calculated SCN beds ¹⁰⁰	8	8	9	10	11	3	42.8%	2.0%

Table 68: Projected SCN beds to 2041. Source: 2021/22 HPA AP Projections, provided by ACTHD, 2024. Rounding has been applied.

11.8 Paediatrics Service

Given there is limited inpatient paediatric activity currently undertaken at NCH, a scenario was developed to consider reversing 50% of medical paediatric activity from TCH, to demonstrate the potential projected requirement to care for the local demand of clinically appropriate paediatric presentations to NCH in the future, noting the tertiary paediatric service will remain at TCH.

⁹⁶ Maternity beds calculated at 80% occupancy.

⁹⁷ Birthing rooms calculated at 300 deliveries per room with 100% vaginal deliveries and 50% caesarean deliveries accounting for those deliveries that commence in a birthing room and become emergency theatre cases when labour doesn't progress.

⁹⁸ Caesarean theatre calculated on emergency theatre requirement.

⁹⁹ Rate determined from average of ACT North qualified neonates to ACT North vaginal and caesarean deliveries between 2018/19 to 2022/23

¹⁰⁰ Qualified Neonate beds calculated at 75% occupancy.

By 2041, a projected bed requirement of 7 beds is shown.

Stay Type	Values	2023	2026	2031	2036	2041
Overnight	Seps	66	75	657	721	814
	Bed days	71	76	739	769	984
	ALOS	1.1	1.0	1.1	1.1	1.2
Day Only	Seps	444	500	1,299	1,425	1,593
	Bed days	444	500	1,299	1,425	1,593
Total Separations		510	575	1,956	2,146	2,407
Total Bed Days		515	576	2,038	2,194	2,577
Overnight Calculated Beds ¹⁰¹		0	0	2	2	3
Same Day Calculated Beds		1	1	3	3	4
Total Calculated Bed		1	1	6	6	7

Table 69: Scenario for Projected Medical Paediatric Activity for NCH to 2041 – Reverse-flow 50% of ACT North Residents from TCH. Source: 2021/22 HPA AP Projections, provided by ACTHD, 2024. Includes acute only, medical partition and 16 and under. Excludes 20-Chemotherapy, 23-Renal Dialysis, 74-Unqualified Neonates, 73-Qualified Neonates, 75-Perinatology, 72-Obstetrics, 16 years and over, age 0 to filter any qualified neonate/perinatology activity not coded under qualified/perinatology. Rounding has been applied.

Another scenario explored included reversing 50% of appropriate paediatric surgical activity from TCH at NCH, aligned with the proposed high-volume low complexity model, noting the activity is predominately for same day procedures not necessitating an overnight stay.

Stay Type	Values	2023	2026	2031	2036	2041
Day Only	Seps	101	429	499	548	632
	Bed days	101	429	499	548	632
Same Day Calculated Beds		0	0	1	1	2

Table 70: Scenario for Projected Surgical Paediatric Activity for NCH to 2041 – Reverse-flow 50% of ACT North Residents from TCH. Source: 2021/22 HPA AP Projections, provided by ACTHD, 2024. Includes acute only, interventional partition and 16 and under. Excludes 20-Chemotherapy, 23-Renal Dialysis, 74-Unqualified Neonates, 73-Qualified Neonates, 75-Perinatology, 72-Obstetrics, 16 years and over. Rounding has been applied.

A further scenario was explored to represent a 5 day a week model for planned care with a focus on workforce planning to ensure sustained weekend cover. Noting that the current planned activity proportion of paediatric activity at NCH is minimal, the base case assumption that 21% of total paediatric activity at NCH for ACT North resident was applied. This resulted in a projected bed requirement by 2041 of 3 beds.

11.9 Mental Health

The base case projection for mental health activity at NCH showed an annual growth rate in separations of 3.0% and bed days on 3.3% by 2041. This is above the projected population growth rates observed and doesn't reflect the extensive work undertaken by CHS MHJHDAS in supporting patients within the community.

Stay Type	Values	2019	2021	2023	2026	2031	2036	2041	Variance	Growth 2021-2041	CAGR 2021-2041
Overnight	Separations	531	762	748	929	1,080	1,239	1,287	525	68.9%	2.7%
	Bed days	11,948	13,660	14,215	17,654	20,523	23,544	24,456	10,796	79.0%	3.0%
	ALOS	22.5	17.9	19.0	19.0	19.0	19.0	19.0	1.1	6.0%	0.3%
Calculated Beds ¹⁰²		39	44	46	57	66	76	79	35	79.0%	3.0%

Table 71: Base case Projected Mental Health Activity for NCH to 2041. Source: 2021/22 HPA ED Projections, ACTHD, 2024.¹⁰³ Includes mental health care type only, all ages. Excludes Chemotherapy, Renal Dialysis, Unqualified Neonates, Qualified Neonates, Perinatology and Obstetrics. Rounding has been applied.

¹⁰¹ Paediatric overnight beds calculated at 85% occupancy.

¹⁰² Mental Health beds calculated at 85% occupancy

¹⁰³ Surgical overnight beds calculated at 85% occupancy. Surgical same day beds calculated at 170% occupancy for 240 days.

A scenario was developed to reflect the service delivery changes and improving inpatient care deliver to reduce length of stay. The model below applied the projected population growth by age to the overnight admitted mental health activity¹⁰⁴ at NCH and holding length of stay for each age cohort.¹⁰⁵

By 2041, there is an estimated bed requirement of 57 mental health beds across adult and older person cohorts.

Age Group	Values	2023	2026	2031	2036	2041	Variance	Growth 2023-2041	CAGR 2023-2041
00-15	Separations	1	1	1	1	1	0	47.5%	2.2%
	Bed days	1	10	11	12	14	13	1258.0%	15.6%
16-49	Separations	374	398	442	490	543	169	45.3%	2.1%
	Bed days	5,477	5829	6466	7172	7956	2,479	45.3%	2.1%
50-64	Separations	95	104	120	138	159	64	67.7%	2.9%
	Bed days	1,912	1254	1448	1671	1929	17	0.9%	0.0%
65-74	Separations	50	54	61	70	79	29	58.9%	2.6%
	Bed days	2,035	2198	2500	2844	3234	1,199	58.9%	2.6%
75+	Separations	54	60	72	86	103	49	90.1%	3.6%
	Bed days	2,321	2583	3088	3691	4412	2,091	90.1%	3.6%
Total Seps		574	617	695	785	886	312	54.4%	2.4%
Total Bed days		11,746	11,874	13,512	15,390	17,545	5,799	49.4%	2.3%
Calculated Beds¹⁰⁶		38	38	44	50	57	19	49.4%	2.3%

Table 72: Scenario for Projected Mental Health Activity for NCH to 2041. Source: 2022/23 ABF AP Extract, provided by ACTHD, 2024. Includes mental health care type only and all ages. Excludes 20-Chemotherapy, 23-Renal Dialysis, 74-Unqualified Neonates, 73-Qualified Neonates, 75-Perinatology, 72-Obstetrics. Rounding has been applied.

¹⁰⁴ Same day activity was excluded as it was negligible

¹⁰⁵ Applied TCH ALOS for 2022/23 for 00-15 (9.2 days), 50-64 (12.1 days) and applied NCH ALOS for 16-49 (14.6 days), 65-74 (40.7 days) and 75+ (43.0 days)

¹⁰⁶ Mental Health beds calculated at 85% occupancy

11.10 Sub-Acute Services

The base case projections for sub activity at NCH show predominately growth in Maintenance and Palliative Care activity. It shows that by 2041, there will be a projected sub-acute bed requirement for 41 beds with 35 of those beds allocated for Maintenance and noting that no rehabilitation beds were projected for NCH based on sub-acute rehabilitation occurring at UCH.

Care Type	Values	2019	2021	2023	2026	2031	2036	2041	Variance	Growth 2021-2041	CAGR 2021-2041
87 Maintenance	Seps	246	427	398	387	487	639	700	273	63.9%	2.5%
	Bed days	3,484	5,446	7,015	5,796	7,158	9,861	11,375	5,929	108.9%	3.8%
86 Palliative care	Seps	163	128	134	178	194	254	257	129	100.8%	3.5%
	Bed days	831	642	672	1,129	1,333	1,485	1,648	1,006	156.7%	4.8%
92 Geriatric Management and Evaluation	Seps	37	39	40	54	70	62	58	19	48.7%	2.0%
	Bed days	342	385	384	411	588	459	375	-10	-2.6%	-0.1%
85 Psychogeriatric care	Seps	3	4	-	-	-	-	-	-4	100.0%	100.0%
	Bed days	25	37	-	-	-	-	-	-37	100.0%	100.0%
84 Rehabilitation	Seps	48	-	-	-	-	-	-	0	-	0.0%
	Bed days	866	-	-	-	-	-	-	0	-	0.0%
Total Seps		497	598	572	619	751	955	1,015	417	69.7%	2.7%
Total Bed days		5,548	6,510	8,071	7,336	9,079	11,805	13,398	6,888	105.8%	3.7%
Calculated Beds¹⁰⁷		17	20	25	22	28	36	41	21	105.8%	3.7%

Table 73: Base case Projected Sub-Acute Health Activity for NCH to 2041. Source: 2021/22 HPA ED Projections, ACTHD, 2024. Includes subacute care type only, all ages. Excludes Chemotherapy, Renal Dialysis, Unqualified Neonates, Qualified Neonates, Perinatology and Obstetrics. Rounding has been applied.

A scenario was developed to address the current impact of Maintenance patients on acute beds, given that NCH currently does not have designated maintenance/sub-acute beds within the facility. It acknowledges that with an aging population and the projected population growth for those aged over 65 years being 77.5% by 2041, there is a need to account for this patient cohort with a redeveloped NCH. The scenario has applied the aged population growth rate to 2022/23 historical activity and holding current ALOS, to demonstrate a projected sub-acute bed requirement to 2041, if current patient flow and discharge planning issues related to non-acute patients are not addressed.

¹⁰⁷ Sub Acute beds calculated at 90% occupancy

Care Type	Values	2023	2026	2031	2036	2041	Variance	growth 2023- 2041	CAGR 2023- 2041
3 - Palliative	Seps	126	138	160	187	217	91	72.3%	3.1%
	Bed days	968	1060	1233	1434	1668	700	72.3%	3.1%
	Calculated Beds	3	3	4	4	5	2	72.3%	3.1%
4 - Geriatric evaluation and management	Separations	29	32	37	43	50	21	72.3%	3.1%
	Bed days	314	344	400	465	541	227	72.3%	3.1%
	Calculated Beds	1	1	1	1	2	1	72.3%	3.1%
6 - Maintenance	Separations	493	540	628	730	849	356	72.3%	3.1%
	Bed days	8,265	9049	10525	12241	14238	5,973	72.3%	3.1%
	Calculated Beds	25	28	32	37	43	18	72.3%	3.1%
Total Calculated beds		29	32	37	43	50	21	72.3%	3.1%

Table 74: Scenario for Projected Sub-Acute Health Activity for NCH to 2041. Source: 2022/23 ABF AP Extract, ACTHD, 2024. Includes mental health care type only, all ages. Excludes Chemotherapy, Renal Dialysis, Unqualified Neonates, Qualified Neonates, Perinatology and Obstetrics. Rounding has been applied.

Further development is required to determine the extent of sub-acute capacity is feasible within a redeveloped NCH, noting that there is a commitment to address existing non-acute demand within the acute care setting.

11.11 Ambulatory Services – Care Close to Home

To understand the infrastructure requirements for the HITH service aligned to achieving a target of over 3,000 separations per annum across CHS¹⁰⁸, a HITH target of 7% of projected-scenario adult medical and surgical activity has been applied. It shows by 2041, there will be a projected requirement for 46 beds. Noting that this depends on significant workforce and infrastructure requirements to achieve. A conservative scenario has been presented that enables NCH to address projected demand to 2041.

This involves applying the projected population growth rate to historical 2021/22 HITH activity and holding the current length of stay at 4 days. This approach enables NCH to further explore opportunities to expand hospital avoidance strategies and digital health models while allowing for a future infrastructure response to manage demand.

	2023	2026	2031	2036	2041	Variance	Growth 2023- 2041	CAGR 2023- 2041
HITH Separations	1368	1469	1654	1862	2096	728	53.2%	2.4%
HITH Bed days	5472	5876	6615	7448	8386	2,914	53.2%	2.4%
Calculated beds ¹⁰⁹	18	19	21	24	27	9	53.2%	2.4%

Table 75: Scenario for Projected HITH Activity for NCH to 2041. Source: 2022/23 ABF AP Extract, ACTHD, 2024. Includes mental health care type only, all ages. Excludes Chemotherapy, Renal Dialysis, Unqualified Neonates, Qualified Neonates, Perinatology and Obstetrics. Rounding has been applied.

Infusion data is not readily available or be easily extracted from the existing ABF extracts as this activity is likely within the planned same day medical activity¹¹⁰, to reflect the potential projected requirements for the Zita Mary Clinic. Noting the current built bed capacity is 8 chairs and 1 bed, an additional 4 chairs are estimated based on alignment with projected population growth rate.

¹⁰⁸ ACTHD, 2024. 2023-24 ACT Health Directorate Budget Statement. Note: Strategic Indicator 1.2 – Care Close to Home, measuring the Territory-wide activity of LHN funded care close to home as the number of separations with a Hospital in the Home (HITH) component to their stay with an estimated outcome target of separations with a HITH component is greater than 3,000. This is a new indicator in 2023-24.

¹⁰⁹ HITH beds calculated at 85% occupancy

¹¹⁰ Observed varying trend for planned adult medical same day within the ABF Extract which is consistent with the clinical consultation outlining approximately 500 patients seen per year., as 2022/23 has 611 separations compared to 1,703 for 2019/20.

However, further work is required to align this with operational and demand management strategies such as increased operating hours and workforce capacity.

11.12 Non-Admitted and Outpatient Services

To adequately meet future demand, a scenario has been developed by applying the overall projected population growth rate to the NCH NAP 2023/24 activity¹¹¹ as a measure of meeting future demand. Utilising the 2021/22 HPA Projection to determine the on- and out of-campus proportion, this was applied to allow NCH to consider infrastructure requirements in order to meet future demand.

By 2041, there is a projected requirement for 72 non-admitted/outpatient spaces. Given the data limitations, it is expected that further definition of the required non-admitted patient room types as well as the establishment of digital health models (e.g. virtual hospital) will occur as part of the ongoing clinical services and facility planning process.

	2023	2024	2026	2031	2036	2041	Variance 2024- 2041	Growth 2024- 2041	CAGR 2024- 2041
Total NAP OOS	84,928	103,268	108,284	121,917	137,266	154,548	51,280	49.7%	2.3%
On-Campus NAP OOS¹¹²	61,148	74,353	77,964	87,780	98,832	111,275	36,922	49.7%	2.3%
Calculated Rooms¹¹³	40	48	51	57	64	72	24	49.7%	2.3%

Table 76: Scenario for Projected NAP Activity for NCH to 2041. Source: Canberra Health Performance Profile Series 1, 2024, CHS, 2024. Rounding has been applied.

11.13 Public Activity in Private Hospitals

Recognising that public activity is undertaken in private hospitals to manage demand requirements, the base case shows that for ACT North residents, there will be a projected bed requirement of 83 beds¹¹⁴ by 2041 with same day separations and bed days aligned to observed projected population growth rates.

Stay Type	Values	2021	2023	2026	2031	2036	2041	Variance	Growth 2021- 2041	CAGR 2021- 2041
Overnight	Seps	3,859	2,713	2,996	3,321	3,882	4,323	464	12.0%	0.6%
	Bed days	16,167	11,478	12,719	13,783	16,174	18,679	2,512	15.5%	0.7%
	ALOS	4.2	4.2	4.2	4.2	4.2	4.3	0.1	3.1%	0.2%
Day Only	Seps	5,630	4,924	5,901	7,029	8,155	9,238	3,608	64.1%	2.5%
	Bed days	5,630	4,924	5,901	7,029	8,155	9,238	3,608	64.1%	2.5%
Calculated ON Beds¹¹⁵		52	37	41	44	52	60	8	15.5%	0.7%
Calculated SD Beds¹¹⁶		14	12	14	17	20	23	9	64.1%	2.5%
Calculated Total Beds		66	49	55	62	72	83	17	25.7%	1.2%

Table 77: Base case Public in Private Hospitals Activity for ACT North Residents to 2041. Source: 2021/22 HPA AP Projections, ACTHD, 2024. Includes acute care type only, all ages. Excludes Chemotherapy, Renal Dialysis, Unqualified Neonates. Rounding has been applied.

¹¹¹ Provided by CHS, 2024 as part of the Canberra Health Performance Profile Series 1, 2024. A 85% data quality and completeness confidence indicator has been applied. Includes both on and out of campus activity.

¹¹² Applies an assumption that 72% of total NAP activity occurs on site at the hospital.

¹¹³ NAP/Outpatient rooms based on 1,536 OOS per room at 240 days per year, 8 hours per day, 1hr OOS and 80% occupancy.

¹¹⁴ Includes planned activity only as emergency separations were negligible.

¹¹⁵ Overnight beds were calculated at 85% occupancy.

¹¹⁶ Same day beds were calculated at 240 days and 170% occupancy.

11.14 Future Infrastructure Table

The table below represents the projected future bed requirement for NCH as it aligns with supporting the projected demand, changing models of care and future service opportunities for the new Northside Hospital.

For digital health solutions aligned to non-asset solutions, CHS needs to determine the model for the delivery of digital health to identify the required infrastructure solution. This is discussed in Section 3.1.

	CHS and ACTHD AGREED ADJUSTMENTS, 2025				
	NCH 2024 Current Build	NCH 2031	NCH 2041	NCH 2031	NCH 2041
Multi-Day and Same-Day Acute Beds	150	235	294	nil adjustment	nil adjustment
Adult Subacute Beds	0	37	50	nil adjustment	nil adjustment
Paediatric Beds	0	9	10	nil adjustment	nil adjustment
Maternity Beds	27	18	22	nil adjustment	nil adjustment
Adult Psychiatry and Mental Health Beds	42	44	57	nil adjustment	nil adjustment
Neonatal Services POC (SCN)	14	9	11	nil adjustment	nil adjustment
ICU Beds	10	11	14	nil adjustment	nil adjustment
Coronary Care Unit	6	captured within MD and SD beds (not modelled separately)	captured within MD and SD beds (not modelled separately)	nil adjustment	nil adjustment
AOD	0	captured within MD and SD beds and Outpatient POC (not modelled separately)	captured within MD and SD beds and Outpatient POC (not modelled separately)	nil adjustment	nil adjustment
Operating Rooms inc. caesarean theatre	7	7.3 (8)	8.7 (9)	8	10
Day Surg (inc Endoscopy) / Procedural room	1	1.1 (2)	1.4 (2)	2	3
Cath Labs	0	0.2	0.2	2	2
Birthing Rooms	8	6	7	nil adjustment	nil adjustment
Recovery spaces	30	38	45	45	59
ED - Acute Treatment Spaces	23	49	63	nil adjustment	nil adjustment
ED - Resuscitation	2	5	6	nil adjustment	nil adjustment
EDSSU	15	14	18	nil adjustment	nil adjustment
ED-Fast track	15	captured within ED-Acute Treatment Spaces (not modelled separately)	captured within ED-Acute Treatment Spaces (not modelled separately)	nil adjustment	nil adjustment
ED Other Rooms (Isolation, MH assessment, procedure room)	4	7	9	nil adjustment	nil adjustment
Outpatient / HiTH / Allied Health / Community Health POC	35	78	99	86	109
Total excluding SSU ¹¹⁷ and MI	389	569	715	585	742

Table 78: Current and Forecasted Bed Infrastructure Table for NCH, 2024-2041. Note the items is in brackets representing redundancy required to deliver clinical services efficiently. Excludes public in private projected beds. Rounding has been applied.

¹¹⁷ SSU denotes Sterilising Services Unit

12. Enablers

12.1 Workforce

A sustainable, skilled and adaptable health workforce is crucial to delivering high-quality healthcare in the changing health landscape and to meet future health and social care challenges of ACT. This will include more flexible use of current staff, greater use of non-medical staff and new digital technologies.

The healthcare workforce is a critical component of effective service delivery, and promoting clinicians to work to the full extent of their scope is essential for optimising patient care and delivering efficient care. This approach involves ensuring that all healthcare workers, including doctors, nurses, allied health professionals, and support staff, are enabled to use their full range of skills and training. By doing so, CHS can improve efficiency, reduce bottlenecks, and enhance patient outcomes. For example, Nurse Practitioners can perform certain diagnostic and treatment procedures that can alleviate the pressure for medical specialists and allow them to deliver the more complex components of care or attend to complex cases. Similarly, allied health professionals, such as physiotherapists and occupational therapists, can take on greater roles in patient rehabilitation and chronic disease management. This has been observed with the establishment of Advance Practice roles and services within NCH to manage demand. It is acknowledged that this requires robust training programs, clear role definitions, and supportive policies that encourage interprofessional collaboration. Additionally, leveraging technology and digital tools can facilitate better communication and coordination among healthcare teams especially as NCH forms part of the CHS Network which can enable a more integrated patient journey between services across campuses.

Noting the limited availability of sub-speciality clinicians across the ACT, especially in the areas of Plastics and Paediatric Medicine, it is essential for future delivery that networked service arrangements are implemented across the CHS Network. This will ensure that NCH has access to the expertise required to deliver optimal care to its patients. This will be further explored and articulated as part of the Future Service Framework project which aims to document the future state of service delivery for clinical services for the Northside Hospital Project and will be utilised to inform the facility planning and commissioning of the new hospital.

12.2 Infrastructure

Infrastructure plays a critical role as an enabler for hospital delivery. It provides the physical framework and support necessary to ensure the smooth functioning of the hospital. Future infrastructure needs to be flexible to meet changes in the model of care, but also support the delivery of services across different modalities such as in-person and virtually. To achieve the CSP Strategic Directions, the infrastructure needs to enable the delivery of services with sufficient space and flexibility to ensure that new models of care can be delivered sustainably in the future.

The Northside Hospital Project is a commitment from the ACT Government to build a hospital for the northside region of the ACT, to support the needs and care of Northside residents and create a contemporary environment that enables efficient, safe and high quality service delivery, supported by evidence-based models of care. The development of the new Northside Hospital will continue to involve CHS and NCH executives, clinical and non-clinical stakeholders, as well as consumers through the facility planning, design and delivery processes.

12.3 Education, Training and Research

Education and training are pivotal to the future of service delivery at NCH. Clinical consultation indicated a key challenge for consideration for NCH is maintaining medical training accreditation during the Northside Hospital Project redevelopment and addressing training workforce capacity

with clinicians involved in service delivery, training and research. There is a need to focus on integrating training into service models to ensure innovation aligns with CHS requirements. The associated teaching infrastructure must include flexible and multifunctional spaces within clinical environments for bedside teaching.

Digital infrastructure improvements are crucial, as current systems hinder efficient training delivery, however the implementation of DHR and the work being undertaken by CHS to incorporate reporting and analytics, is a critical enabler. Additionally, creating specific handover and teaching spaces near wards will enhance professional collaboration and workflow efficiency. Future training models should balance centralised and on-the-ward teaching spaces, supported by a unified booking system to optimise resource use. Flexibility in education delivery, supported by robust digital platforms, is essential to accommodate both in-person and online learning. Centralised simulation resources and a strategically located educational hub will foster collaboration and ensure the effective use of teaching facilities, ultimately enhancing service delivery quality.

Embedding education as a key performance measure for medical staff can formalise the importance and aid in workforce retention strategies. The new Northside Hospital should prioritise shared, interdisciplinary learning spaces for all healthcare professionals, promoting collaborative learning and improving patient care such as allied health professionals needing more simulation and virtual reality resources.

Recognising that TCH serves as the CHS research and training hub, the integration of NCH as part of a centre of excellence by integrating research, education, and service delivery can attract and retain a skilled workforce. Strengthening partnerships with university and tertiary education providers can enhance interdisciplinary learning and assist in workforce planning and development.

As outlined within the CHS Research Strategy 2021-2025¹¹⁸, its goals to ensure research are:

- A core strategic aim of CHS.
- Conducted collaboratively with consumers, carers, community groups and individuals and is embedded to deliver exceptional healthcare.
- Includes academic partnerships co-create exceptional patient care through excellence in collaborative research.

The above will be part of the new Northside Hospital through established governance and processes, a workforce dedicated to quality outcomes and advancing the evidence-base of health care delivery and involves key partnerships with academic and research partners. NCH as part of the CHS Network will be instrumental in creating networked and collaborative research. This includes involvement in Territory-wide Clinical Trials to enable services and patients to have access to latest innovations in treatment and care.

12.4 Information, Communication and Technology

Information, Communications and Technology (ICT) has become a key enabler in the delivery of health services, with all services relying on ICT to provide platforms for secure communication, monitoring, electronic medical records and medication. The role of ICT in delivering health care has been extensively developed since COVID-19. The rapid uptake of virtual/telehealth services seen and experienced is changing how services are delivered.

Digital technologies have transformed the way healthcare is delivered, by providing training and clinical decision support, supporting the standardisation of processes, improving safety, reducing clinical variation, improving access to services, and enhancing self-management. Information

¹¹⁸ ACT Government. 2021. CHS Research Strategy 2021-2025. Accessed from: <https://www.canberrahealthservices.act.gov.au/about-us/research>

technology can improve data collection and the ability of CHS to make evidence-informed decisions and provide digital care pathways for NCH to deliver care across the northside region.

It is recognised that the implementation of the DHR has had a significant positive impact on patient care and outcomes. This has included improved information sharing, enhanced patient safety, reduced unnecessary tests and procedures, providing earlier notifications of potential adverse reactions to medications, reduced handover times for nurses during shift changes and contributed to patient empowerment, with patients having access to their own health information through the MyDHR portal. The DHR has also replaced around 40 previous systems with consolidation leading to more consistent and reliable healthcare delivery.¹¹⁹

The ability to harness future technologies to enhance service delivery relies on providing adequate and future-proofed infrastructure capable of proactive development and adoption rather than reactive reconfiguration. Underpinning this is the need to ensure thorough long-term planning to ensure that new technologies coming online are compliant with the DHR and enable interoperability. This enables data and information about service delivery to be collated and extracted seamlessly to contribute to future clinical service planning endeavours.

Implementation of virtual technologies, to create opportunities to develop and deliver new care pathways for care closer to home or in the home, improving patient outcomes and enhancing the patient experience, is central for CHS and NCH in maintaining its reputation for providing contemporary health services. These technologies may include:

- Remote Patient Monitoring in the hospital and patient's homes, support the delivery of at-home services as outlined in the future strategies for NCH.
- Strengthen digital and IT infrastructure to enable NCH to build its digital foundation and enable digital models to be part of the care journey.
- Immersive technologies such as augmented reality can set CHS apart as an innovator and pioneering new clinical pathways.

12.5 Partnerships

Strong and effective partnerships are the foundation for providing integrated healthcare. CHS has several formal and informal partnerships across health service delivery, government and education partners. In the future, new partnerships must be created to enable the delivery of safe care in and outside the hospital. For example, the GRACE Service is a key example of an effective partnership with RACFs to deliver care to our aging residents while reducing the need for acute hospital admission.

Further developing and establishing new partnerships and networks across ACT will increase access to specialist services and improve care integration to meet the expectations and needs of the community in the future.

Partnerships and collaboration between services will support networks and referral pathways. There will be challenges in developing formal processes that ensure the most appropriate outcome for CHS and, more importantly, patients. Standard, consistent and clear support networks and patient referral pathways to be developed and be understood by both clinicians and the community.

Private hospital providers are key in the delivery of services from a system perspective. Partnerships with the private providers, especially Calvary Health Care, which operates the private hospital on-site, is critical. Ongoing infrastructure and service planning needs to be in consultation with Calvary Health Care to enable access to services across the broader ACT health care system.

¹¹⁹ ACT Government. 2023. Digital Health Record makes big impact on health services in first 12 months. Accessed from: https://www.cmtedd.act.gov.au/open_government/inform/act_government_media_releases/rachel-stephen-smith-mla-media-releases/2023/digital-health-record-makes-big-impact-on-health-services-in-first-12-months

Reforms in the aged care sector and National Disability Insurance Scheme (NDIS) will require greater partnerships and collaboration across the healthcare continuum. The role of the Capital Health Network, general practice and the primary care sector are important in establishing links across the continuum of care. These linkages are required due to increasing demand with more patients with complex, chronic co-morbidities that require multidisciplinary care.

Furthermore, a key partnership for NCH service delivery is and will remain ACTAS as the primary patient transport service for providing out-of-hospital emergency and non-emergency care to the ACT and its surrounding communities. Opportunities to consider a centralised approach that collaborates across facilities, including the ambulance service, to streamline patient flow and manage pressures between NCH and TCH will enable timely access to the right care and at the place for all ACT residents.

13. Implementation, Evaluation and Monitoring

The NCH CSP provides direction and strategies to focus CHS in further developing and implementing new approaches to service delivery as well as informing the Northside Hospital Project. These have been created through data analysis, research and consultation with CHS, NCH and TCH executives, staff and service partners, to ensure they are relevant and achievable.

A strong governance process will be required to oversee the strategies presented within the CSP. Together, CHS and NCH are required to address immediate and short-term operational challenges linked to managing demand and improving patient outcomes. This is to ensure that NCH continues to meet the evolving needs of the region it serves.

As part of the Northside Hospital Project, CHS and NCH will continue to be instrumental in designing and creating a future-focused facility to deliver contemporary and evidence-based health care to the residents of ACT.

14. Appendices

Appendix 1 – Current and Future Role Delineation for ACT Public Hospitals

Service Area	NCH Current	NCH Future	TCH Current	UCH Current
Core Services				
Anaesthetics and Recovery	4	4	6	NPS
Operating Suite	4	4	6	NPS
Intensive Care Unit	4	4	6	NPS
Nuclear Medicine	4	4	6	NPS
Radiology and Interventional Radiology	5	5	6	3
Pathology	5	5	6	3
Pharmacy	5	5	6	4
Emergency Medicine				
Emergency Department	4	4	6	NPS
Medicine				
Acute Stroke Services	4	4	6	NPS
Cardiology	4	4	6	NPS
Dermatology	3	3	5	NPS
Drug and Alcohol Services	1	1	5	NPS
Endocrinology	3	4	6	NPS
Gastroenterology	4	4	6	NPS
General and Acute medical	4	4	6	NPS
Geriatric medicine	4	4	6	5
Haematology	3	4	6	NPS
Immunology	4	4	6	NPS
Infectious diseases	5	5	6	2
Neurology	4	4	6	NPS
Oncology – medical	NPS	3	6	NPS
Palliative care	2 (CHH 6)	2	5	NPS
Rehabilitation Medicine	2	2	2	6
Renal Medicine	2	3	6	NPS
Respiratory and Sleep Medicine	3	4	6	NPS
Rheumatology	2	2	5	NPS
Sexual Assault Services	1	1	4	NPS
Surgery				
Burns	NPS	2	4	NPS
ENT Surgery	4	4	6	NPS
General Surgery	4	4	6	NPS
Gynaecology	4	4	6	NPS
Ophthalmology	3	4	5	NPS
Orthopaedic Surgery	4	4	6	NPS
Plastic Surgery	4	4	5	NPS
Urology	4	4	6	NPS
Vascular Surgery	4	4	6	NPS
Child and Family Health Services				
Maternity	4	4	6	NPS
Neonatal	3	3	5	NPS
Paediatric	2	2	5	NPS
Surgery for children	2	3	4	NPS
Mental Health				
Adult Mental Health	2	3	5	2
Older Persons Mental Health	4	4	4	NPS

Table 79: Current and Future Role Delineation for NCH. Source: ACTHD, 2021.

Appendix 2 – Detailed Private Hospital and Procedural Centres Services Table

Region	Name	Location	Specialty	Number of Practitioners
	Calvary Bruce Private Hospital	Bruce	▪ Anaesthetics ▪ Bariatric (Obesity) Surgery ▪ Breast Surgery ▪ Cardiology ▪ Colorectal Surgery ▪ Endocrinology ▪ General Practitioners ▪ Gastroenterology ▪ General Surgery ▪ Geriatric Medicine ▪ Gynaecology including IVF ▪ Infectious Diseases ▪ Laparoscopic Surgery ▪ Nephrology ▪ Neurology ▪ Obstetrics ▪ Ophthalmology ▪ Orthopaedic Surgery ▪ Paediatric Medicine ▪ Pain Medicine ▪ Palliative Care ▪ Plastic Surgery ▪ Psychiatry ▪ Radiology (via Canberra Imaging Group) ▪ Respiratory and Sleep Medicine ▪ Rheumatology ▪ Upper GI Surgery ▪ Urogynaecology ▪ Urology ▪ Vascular Surgery	100
	Canberra Surgicentre	Braddon	▪ Oral and Maxillofacial Surgery	3
	Icon Cancer Centre Canberra	Bruce	▪ Haematology ▪ Medical Oncology ▪ Radiation Oncology	7
ACT South	ACT Endoscopy	Deakin	▪ Gastroenterology ▪ Endoscopy ▪ General Surgery	11
	Barton Private Hospital	Barton	▪ Bariatric (Obesity) Surgery ▪ Endoscopy ▪ General Surgery ▪ Gynaecology including IVF ▪ Obstetrics ▪ Ophthalmology ▪ Orthopaedic Surgery ▪ Plastic Surgery ▪ Upper GI Surgery ▪ Urology	13
	Brindabella Endoscopy Centre	Garran	▪ Colorectal Surgery ▪ Gastroenterology ▪ Endoscopy ▪ General Surgery	10

Region	Name	Location	Specialty	Number of Practitioners
	Calvary John James Hospital	Deakin	▪ Anaesthetics ▪ Bariatric (Obesity) Surgery ▪ Breast Surgery ▪ Cardiology ▪ Dentistry ▪ ENT¹²⁰ Surgery ▪ Endocrinology ▪ General Practitioners ▪ General Surgery ▪ Geriatric Medicine ▪ Gynaecology including IVF ▪ Infectious Diseases ▪ Intensive Care ▪ Laparoscopic Surgery ▪ Nephrology ▪ Nuclear Medicine ▪ Obstetrics ▪ Oral and Maxillofacial Surgery ▪ Orthopaedic Surgery ▪ Paediatric Surgery ▪ Paediatric Urology ▪ Pain Medicine ▪ Pathology (Chemical) ▪ Plastic Surgery ▪ Rehabilitation ▪ Respiratory and Sleep Medicine ▪ Rheumatology ▪ Upper GI Surgery ▪ Urogynaecology ▪ Urology ▪ Vascular Surgery	105
	Canberra Imaging Group ¹²¹ (Flagship in Deakin)	Deakin	▪ Nuclear Medicine ▪ Radiology ○ Interventional Radiology-Angiography, biopsy ○ X-ray ○ Computed Tomography (CT) ○ PET/CT ○ SPECT/CT ○ DEXA Bone Densitometry ○ Magnetic Resonance Imaging (MRI) ○ Ultrasound ○ Mammography	N/A
	Canberra Microsurgery	Phillip	▪ Ophthalmology	8
	Canberra Private Hospital	Deakin	▪ Anaesthetics ▪ Bariatric (Obesity) Surgery ▪ Breast Surgery ▪ ENT Surgery ▪ Gastroenterology ▪ General Surgery ▪ Gynaecology including IVF ▪ Obstetrics ▪ Ophthalmology ▪ Oral and Maxillofacial Surgery ▪ Orthopaedic Surgery ▪ Pain Medicine ▪ Radiation Oncology ▪ Rehabilitation ▪ Respiratory and Sleep Medicine ▪ Upper GI Surgery ▪ Urology ▪ Vascular Surgery	55
	Canberra Region Neurology and Pain Centre ¹²²	Phillip	▪ Neurology ▪ Neurosurgery ▪ Pain Medicine	4
	Genea Canberra	Deakin	▪ Gynaecology including IVF ▪ Obstetrics	4
	Mugga Wara Endoscopy Centre ¹²³	Garran	▪ Gastroenterology ▪ Endoscopy	5

¹²⁰ Ear, Nose and Throat

¹²¹ Canberra Imaging Group has centres with ACT at Belconnen, Bruce, Deakin, Dickson, Garran, Gungahlin and Wanniasa. It also has established centres at Goulburn and Queanbeyan, within NSW.

¹²² Also has a centre at the Ives Complex in Bruce

¹²³ Located within National Capital Private Hospital

Region	Name	Location	Specialty	Number of Practitioners
	National Capital Private Hospital	Garran	▪ Anaesthetics ▪ Bariatric (Obesity) Surgery ▪ Breast Surgery ▪ Cardiology ▪ Colorectal Surgery ▪ ENT¹²⁴ Surgery ▪ Endocrinology ▪ Gastroenterology ▪ General Practitioners ▪ General Surgery ▪ Geriatric Medicine ▪ Gynaecology including IVF ▪ Haematology ▪ Infectious Diseases ▪ Laparoscopic Surgery ▪ Medical Oncology ▪ Nephrology ▪ Neurology ▪ Neurosurgery Obstetrics ▪ Oral and Maxillofacial Surgery ▪ Orthopaedic Surgery ▪ Plastic Surgery ▪ Rehabilitation ▪ Respiratory and Sleep Medicine ▪ Rheumatology ▪ Upper GI Surgery ▪ Urogynaecology ▪ Urology ▪ Vascular Surgery	112

Table 80: Private Hospital and Day Procedure Centres within ACT.

¹²⁴ Ear, Nose and Throat

Appendix 3 – Socioeconomic Indicators for Northside Primary Catchment

Proportion of Total Population	Belconnen		Gungahlin		Molonglo		North Canberra		Northside		ACT	
Population	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Total People	106,061	-	87,682	-	11,435	-	61,188	-	266,366	-	454,499	-
Male	52,533	49.53	43,701	49.84	5,610	49.06	30,179	49.32	132,023	49.56	224,361	49.36
Female	53,530	50.47	43,981	50.16	5,828	50.97	31,002	50.67	134,341	50.43	230,140	50.64
Aboriginal and Torres Strait Islander Community												
Population	2,207	2.08	1,434	1.64	123	1.08	847	1.38	4,611	1.73	8,949	1.97
Median Age	24		24		24		26		24		24	
Earning more than \$2,000 gross weekly income	184	12.02	156	16.18	7	7.78	118	17.15	465	14.21	899	14.32
Highest Year of School Attainment (Year 12)	871	60.82	554	61.97	60	68.97	448	67.98	1,933	62.92	3,422	58.66
Highest Non-School Qualification	842	55.00	543	56.33	56	62.22	373	54.22	1,814	55.42	3,260	51.92
Employed (full time, part time, away from work)	1,045	93.55	663	92.73	63	70.00	459	93.87	2,230	92.49	4,089	92.87
Reported one or more long-term health conditions	1,472	55.67	897	52.86	92	58.60	622	58.62	3,083	55.46	5,908	55.41
Age (years)												
0-14	19,258	18.16	20,227	0.23	2,667	23.32	7,322	11.97	49,474	18.57	82,933	18.25
15-64	70,815	66.77	61,140	0.70	8,346	72.99	46,951	76.73	187,252	70.30	309,356	68.07
65-84	14,319	13.50	5,933	0.07	396	3.46	5,846	9.55	26,494	9.95	55,023	12.11
85 +	1,667	1.57	374	0.00	22	0.19	1069	1.75	3,132	1.18	7181	1.58
Households, Housing Tenure and Income												
Family households	27,775	70.29	23,084	77.77	3,029	72.5	13,192	55.72	67,080	69.12	117,214	69.60
Single (or lone) person	9,792	24.78	5,450	18.36	934	22.4	8,080	34.13	24,256	24.99	43,338	25.74
Owned outright	11,325	28.66	4,926	16.59	322	7.71	5,489	23.18	22,062	22.73	44,831	26.62
Owned with mortgage	15,498	39.22	14,394	48.49	2,707	64.79	7,106	30.01	39,705	40.91	67,754	40.23
Rented	11,767	29.78	9,713	32.72	1,083	25.92	10,517	44.42	33,080	34.08	51,681	30.69
Earning less than \$650 gross weekly income	26,246	30.24	18,669	27.68	1,735	19.78	15,201	28.22	61,851	28.52	103,563	27.87
Earning more than \$2,000 gross weekly income	15,914	18.33	14,510	21.51	2,377	27.10	12,867	23.89	45,668	21.06	82,137	22.11
Education												
Highest Year of School Attainment (Year 12)	62,938	75.40	51,325	79.80	7,348	86.62	43,955	83.82	165,566	79.33	274,747	77.01

Proportion of Total Population	Belconnen		Gungahlin		Molonglo		North Canberra		Northside		ACT	
Tertiary - Certificate, Diploma and Advanced Diploma	21,056	34.57	16,075	33.12	764	21.15	7,008	17.53	44,903	29.34	83,379	31.43
Tertiary - Postgraduate Degree, Graduate Diploma, Graduate Certificate and Bachelor Degree	35,055	57.56	28,941	59.62	2,608	72.18	28,862	72.20	95,466	62.38	159,549	60.15
Socioeconomic Status												
Employed (full time, part time, away from work)	56,414	67.42	49,565	73.48	6,984	79.6	36,571	67.90	149,534	69.95	248,601	66.91
Unemployed (looking for work)	2,488	2.97	1,947	2.89	229	2.6	1,666	3.09	6,330	2.96	9,956	2.68
Not in labour force	24,766	29.60	13,691	20.30	1235	14.1	12377	22.98	52,069	24.36	97,524	26.25
Cultural Diversity												
People born in predominantly non-English-speaking countries	24,353	22.96	29,080	33.17	4,209	36.81	15,446	25.24	73,088	27.44	104,357	22.96
Speaks language other than English at home	25,419	23.97	33,719	38.46	4,897	42.82	13,148	21.49	77,183	28.98	111,660	24.57
Health Status												
Reported one or more long-term health condition(s)	57,587	47.79	33660	36.10	3636	30.6	23148	38.39	118031	41.28	225,434	44.85

Table 81: Summary of demographic characteristics of Belconnen, Gungahlin, Molonglo, North Canberra, Northside region and ACT. Sources: ABS, 2021 Census. Accessed August 2024. Note: ABS notes that small random adjustments have been made to all cell values to protect the confidentiality of data. These adjustments may cause the sum of rows or columns to differ by small amounts from table totals.

Appendix 4 – Detailed table of Separations and Bed days by Hospital and Care Type

Hospital	Care Type	Stay Type	Values	2018-19	2019-20	2020-21	2021-22	2022-23	Variance	Growth2019-2023
TCH	acute	Overnight	Seps	35,086	34,618	35,734	33,482	35,401	315	0.9%
TCH	acute	Overnight	Beds	168,602	173,779	173,441	171,159	178,532	9,930	5.9%
TCH	acute	Same Day	Seps	24,390	24,326	28,101	28,884	26,838	2,448	10.0%
TCH	acute	Same Day	Beds	24,390	24,326	28,101	28,884	26,838	2,448	10.0%
TCH	Total Acute Seps			59,476	58,944	63,835	62,366	62,239	2,763	4.6%
TCH	Total Acute Bed days			192,992	198,105	201,542	200,043	205,370	12,378	6.4%
TCH	subacute	Overnight	Seps	2,581	2,219	2,708	2,442	3,272	691	26.8%
TCH	subacute	Overnight	Beds	32,581	31,132	30,082	31,946	36,141	3,560	10.9%
TCH	subacute	Same Day	Seps	279	130	91	56	47	-232	-83.2%
TCH	subacute	Same Day	Beds	279	130	91	56	47	-232	-83.2%
TCH	Total Sub-Acute Seps			2,860	2,349	2,799	2,498	3,319	459	16.0%
TCH	Total Sub-Acute Bed day			32,860	31,262	30,173	32,002	36,188	3,328	10.1%
Total TCH Seps				62,336	61,293	66,634	64,864	65,558	3,222	5.2%
Total TCH Bed days				225,852	229,367	231,715	232,045	241,558	15,706	7.0%
NCH	acute	Overnight	Seps	13,364	13,119	14,551	12,638	13,275	-89	-0.7%
NCH	acute	Overnight	Beds	49,759	52,130	53,950	54,315	58,591	8,832	17.7%
NCH	acute	Same Day	Seps	13,855	13,882	17,518	12,280	16,078	2,223	16.0%
NCH	acute	Same Day	Beds	13,855	13,882	17,518	12,280	16,078	2,223	16.0%
NCH	Total Acute Seps			27,219	27,001	32,069	24,918	29,353	2,134	7.8%
NCH	Total Acute Bed days			63,614	66,012	71,468	66,595	74,669	11,055	17.4%
NCH	subacute	Overnight	Seps	487	418	584	497	641	154	31.6%
NCH	subacute	Overnight	Beds	5,569	5,528	6,588	7,033	9,540	3,971	71.3%
NCH	subacute	Same Day	Seps	10	8	13	4	7	-3	-30.0%
NCH	subacute	Same Day	Beds	10	8	13	4	7	-3	-30.0%
NCH	Total Sub-Acute Seps			497	426	597	501	648	151	30.4%
NCH	Total Sub-Acute Bed day			5,579	5,536	6,601	7,037	9,547	3,968	71.1%
Total NCH Seps				27,716	27,427	32,666	25,419	30,001	2,285	8.2%
Total NCH Bed days				69,193	71,548	78,069	73,632	84,216	15,023	21.7%
UCH	acute	Overnight	Seps	3	38	50	40	52	49	1633.3%
UCH	acute	Overnight	Beds	20	278	329	353	512	492	2460.0%
UCH	acute	Same Day	Seps		1	4	1	23	23	#DIV/0!
UCH	acute	Same Day	Beds		1	4	1	23	23	#DIV/0!
UCH	Total Acute Seps			3	39	54	41	75	72	2400.0%
UCH	Total Acute Bed days			20	279	333	354	535	515	2575.0%
UCH	subacute	Overnight	Seps	850	1,243	1,034	1,101	1,127	277	32.6%
UCH	subacute	Overnight	Beds	18,140	29,267	30,562	36,881	43,521	25,381	139.9%
UCH	subacute	Same Day	Seps	931	783	461	296	210	-721	-77.4%
UCH	subacute	Same Day	Beds	931	783	461	296	210	-721	-77.4%
UCH	Total Sub-Acute Seps			1,781	2,026	1,495	1,397	1,337	-444	-24.9%
UCH	Total Sub-Acute Bed day			19,071	30,050	31,023	37,177	43,731	24,660	129.3%
Total UCH Seps				1,784	2,065	1,549	1,438	1,412	-372	-20.9%

Hospital	Care Type	Stay Type	Values	2018-19	2019-20	2020-21	2021-22	2022-23	Variance	Growth2019-2023
Total UCH Bed days				19,091	30,329	31,356	37,531	44,266	25,175	131.9%
CHH	acute	Overnight	Seps	3	5	1	5	1	-2	-66.7%
CHH	acute	Overnight	Beds	11	32	10	42	2	-9	-81.8%
CHH	acute	Same Day	Seps		1				0	#DIV/0!
CHH	acute	Same Day	Beds		1				0	#DIV/0!
CHH	Total Acute Seps			3	6	1	5	1	-2	-66.7%
CHH	Total Acute Bed days			11	33	10	42	2	-9	-81.8%
CHH	subacute	Overnight	Seps	385	370	341	328	441	56	14.5%
CHH	subacute	Overnight	Beds	5,828	6,159	5,625	5,099	5,963	135	2.3%
CHH	subacute	Same Day	Seps	13	12	14	9	18	5	38.5%
CHH	subacute	Same Day	Beds	13	12	14	9	18	5	38.5%
CHH	Total Sub-Acute Seps			398	382	355	337	459	61	15.3%
CHH	Total Sub-Acute Bed day			5,841	6,171	5,639	5,108	5,981	140	2.4%
Total CHH Seps				401	388	356	342	460	59	14.7%
Total CHH Bed days				5,852	6,204	5,649	5,150	5,983	131	2.2%
Total CHS Seps				92,237	91,173	101,205	92,063	97,431	5,194	5.6%
Total CHS Bed days				319,988	337,448	346,789	348,358	376,023	56,035	17.5%

Table 82: Separations and Bed days by Care Type and Stay Type and ACT Public Hospitals and CHH, 2018/19-2022/23. Source: ACTHD Data Extract, 2024. Excludes Unqualified Neonates, Chemotherapy and Renal Dialysis SRGs and Organ Procurement and Unknown Care Types, Antenatal and Postnatal Admissions SRGs.

Appendix 5 – Other Models and Options Explored

Throughout the CSP's development, several models and/or options were identified through consultation with CHS and NCH internal and external stakeholders. The table below outlines the models and options that were considered and analysed, however not further pursued based on not meeting safety and quality standards, limited critical mass and/or volumes required to maintain competency and safety and/or limited workforce capacity.

It is important to note that existing and future services must meet minimum quality and safety standards to ensure service delivery and care do not lead to adverse outcomes. Patient safety and good clinical outcomes are key drivers in decision-making.

Model and/or option explored	Commentary
Feasibility for planning for a helipad to facilitate transfer to interstate quaternary services for complex cases.	- All NCH to TCH transfers by Capital Region Retrieval Service are road only and account for 38 transfers in 2023/24. - Total paediatric NCH retrievals to interstate totalled 5 transfers in 2023/24. - Total retrievals from NCH to interstate were 1 for 2023/24 - Total retrieval to NCH by helicopter was 16 for 2023/23. - The capital cost associated with helipads and future proofing for a helipad is extensive.
Establishing a Level 6 Maternity Service at NCH	- This would lead to duplication of TCH's role within the CHS maternity network. - While there is an expected 39.3% growth in those aged 0 yrs which can be used as a proxy for births by 2041, projected volumes and assumed complexity does not support two Level 6 services. - TCH fulfils the role of the tertiary service within the Tiered Perinatal Network Structure. - An additional Level 6 service would not allow TCH to perform at its full RDL capability due to reduced volumes.
Establishing interventional neurology service at NCH	- Volumes across ACT are low with relevant seps at 39 for 2022/23. - Projected activity for relevant DRGs equate to 347 by 2041. - As this requires specialist medical, nursing and allied health workforce, consolidation of this service at TCH is necessary from a workforce perspective. - NCH would require minimum core services at RDL-5, which not aligned to the current strategy for the hospital.
Establishing a paediatric palliative care service for CHS	- Current volumes and demand for paediatric palliative care are very low. - Due to the super-specialist nature of paediatric palliative care, CHS will continue to network with the Sydney Children's Hospital Network, who have capacity to care for this patient cohort.

Table 83: Models and Options Explored by not pursued. As determined by the Northside Hospital Clinical Services and Facility Planning Steering Committee in 2024.

Appendix 6 – Planning Assumptions

Historical Activity was provided by ACTHD as the ABF Admitted Patient (AP), Emergency Department (ED) and Non-Admitted Patient (NAP) Extracts and by CHS as the Canberra Health Performance Profile Series 1, 2024.

Admitted Patient, Emergency Department (ED) and Non-Admitted Patient (NAP) base case projections were provided for NCH and TCH by ACTHD. This included admitted mental health separations and bed days. The methodology, developed by Health Policy Analysis (HPA) for the ACT Health Directorate (ACTHD), makes adjustments for population growth, ageing, average length of stay assumptions and existing public and private activity distribution trends.

Data limitations include:

- Changing to coding practices between historical 2020/21 data which the HPA Base case Projections are based, and historical 2022/23 data.
- In 2022/23, there was a substantial increase in antenatal admissions for both TCH and NCH.
 - Where acute and maternity separations are reported, antenatal and postnatal ESRC activity was omitted due to the unrealistic skew of the activity trend between 2018/19 and 2022/23.
- In 2021/22, chemotherapy was moved to TCH from NCH and this is reflected by the nil activity reported for 2021/22 and 2022/23 for chemotherapy SRG for NCH.
 - Also, it is expected that chemotherapy and infusion activity be captured as non-admitted patient activity and would not appear within the admitted patient data extract.
- Endoscopy separations for TCH in low volumes in the ABF AP extract and likely coded as non-admitted patient activity
- Urgency of Admission category seems have recording inconsistencies with 8,203 records recorded with 9-Urgency status Not known/not reported.
- Variability among planned same day medical activity between 2018/19 and 2022/23, which likely captures activity that could otherwise be coded/classified as non-admitted patient activity such as infusions.
- Coding for qualified and unqualified neonates has been varied at NCH over this trended period.
- Implementation of the DHR across ACT in 2021.
- ABF NAP Extract and 2021/22 HPA NAP Base case Projections have a high degree of variability. ACTHD and CHS noted concern utilising the dataset.
- Transfer data between NCH and TCH was not available during CSP development.
- Medical Imaging data was not available during CSP development
- The theatre fires at NCH in 2022, meaning that planned surgical activity was undertaken at TCH and within the private sector.
- The noted influence of COVID between 2019/20 to 2021/22 in changing how people accessed and utilised health services.

Overarching planning assumptions include:

- Maintaining NCH services within a RDL-4.
- ACT North projected population growth by 2041.
- Increasing networking arrangements at the service level with TCH.
- Demand management and operational efficiencies across NCH services to be realised and supported including reducing LOS across service streams.
- Previous planning undertaken for TCH has accounted for a level of ACT North residents accessing services there, meaning there will be a level of redundancy built into the ACT public health system.

Activity Analysis Assumptions are noted below:

- Excludes 20-Chemotherapy, 23-Renal Dialysis and 74-Qualified Neonates
- Excludes Organ Procurement and Unknown Care (37 seps, 307 bed days excluded)
- Care Type Groupings:
 - Acute-Adult includes Acute and 16 years and over
 - Sub-Acute includes Palliative Care, Rehab, GEM, Psychogeriatric and Maintenance and all ages
 - Acute-Paediatrics include Acute and 0 to 15 years, excluding Newborn Care Type
 - Mental Health includes Mental Health, all ages and excludes age equal 0
 - Unqualified Neonates includes ESRG 741, 0 age
 - Qualified Neonates includes ESRG 731, 0 age
- Clinical Groupings:
 - Medical includes Acute and medical partition
 - Surgical includes Acute and surgical partition
 - Paediatric-Medical includes acute, 00-15 years and medical partition
 - Paediatric-Surgical includes acute, 00-15 years and interventional partition
 - Maternity includes acute, all ages and Obstetrics SRG only.
 - Subacute, mental health, qualified neonates and unqualified neonates aligns to care type grouping above
- Urgency of Admission
 - Emergency includes 1-Emergency
 - Planned include 2-Planned and all other urgency of admission categories

SRG and ESRG mapping for ACTHD ABF AP Extract aligns with HPA allocations.

Scenario model assumptions:

- Reversing 50% of ACT North Residents from TCH from 2031 to 2041 together with ED avoidance strategies, the ACT North population growth was applied to current 2022/23 activity.
- Reversing 50% of ACT North Residents from TCH for selected overnight SRG activity adjustment for length of stay at 3 days and adjusting for the same day activity by applying the total ACT North population growth
- Reversing 50% of ACT North residents planned activity from TCH, accounting for a high-volume low-complexity surgical service at NCH for all ACT residents based on the following procedures outlined by the NCH Executive Director Surgery Division and adjusting ALOS to 3 days.
 - Simple Mastectomy: J07Z Minor Interventions for Breast Disorders
 - Wide Local Excision of Breast: J06B Major Interventions for Breast Disorders, Minor Complexity
 - Laparoscopic Hysterectomy: N08Z Endoscopic and Laparoscopic Interventions, Female Reproductive System
 - Vaginal Hysterectomy: N08Z Endoscopic and Laparoscopic Interventions, Female Reproductive System
 - Anterior/Posterior Vaginal Repair: N06B Female Reproductive System Reconstructive Interventions, Minor Complexity
 - Hernia Repair (excluding incisional hernias): G10B - Hernia Interventions, Minor Complexity
 - Laparoscopic Cholecystectomy: G04B - Laparoscopic Cholecystectomy
 - Haemorrhoid/Anal Fissure Surgery: G10Z - Other Digestive System Procedures
 - Laparoscopic Repair of Hiatus Hernia: G05B - Laparoscopic Hiatus Hernia Procedures
 - Anterior Cruciate Ligament Reconstruction: I29Z - Knee Reconstructions, and

Revisions of Reconstructions

- Knee Replacement: I04B - Knee Replacement
- Total Hip Replacement: I03B - Hip Replacement
- Therapeutic Shoulder Arthroscopy: I24B - Shoulder Procedures
- Bunion Surgery: I20B - Other Foot Interventions-Minor complexity
- Vitrectomy: C11Z - Eye Procedures
- Tonsillectomy: D11Z - Tonsil and Adenoid Procedures
- Tympanoplasty: D12Z - Ear Procedures
- Septoplasty: D14Z - Nasal Procedures
- Mastoidectomy: D15Z - Mastoid Interventions
- Stapedectomy: D10Z - Major Ear Procedures
- Functional Endoscopic Sinus Surgery (FESS): D06Z - Sinus and Complex Middle Ear Interventions
- Transurethral Resection of Prostate (TURP): L05B: Transurethral Prostatectomy for Urinary Disorder, Minor Complexity
- Transurethral Resection of Bladder (TURBT): L06B/C: Minor Bladder Interventions, Intermediate Complexity
- Laser Destruction of Prostate: M61B Benign Prostatic Hypertrophy, Minor Complexity
- Ureteroscopic Destruction of Calculus in Ureter: L06B/C - Minor Bladder Interventions, Intermediate Complexity / Minor Complexity
- Endoscopic Insertion of Prosthesis into Ureter: L06B/C - Minor Bladder Interventions, Intermediate Complexity / Minor Complexity
- Laparoscopic Cholecystectomy (Emergency): H08A - Laparoscopic Cholecystectomy, Minor Complexity
- Appendectomy: G07B - Appendectomy
- Incision and Drainage of Abscess: J08B/C: Other Skin Grafts and Debridement Interventions, Intermediate Complexity / Minor Complexity
- Removal of Products of Conception from Fallopian Tube (Ectopic Pregnancy): O03Z - Ectopic Pregnancy
- Evacuation of Retained Products of Conception: N10Z Diagnostic Curettage and Diagnostic Hysteroscopy
- Open Reduction and Internal Fixation of Mandible: I17B - Maxillo-Facial Surgery, Minor Complexity
- Open Reduction and Internal Fixation of Wrist : I30Z - Hand Interventions
- Open Reduction and Internal Fixation of Ankle: I13B/C Humerus, Tibia, Fibula and Ankle Interventions, Intermediate Complexity / Minor Complexity
- Management of Ureteric Stones (Laser and Stent): L64B Urinary Stones and Obstruction, Minor Complexity
- Applying the overall projected population growth to historical 2022/23 NCH activity and TCH ACT North residents at TCH for planned same day interventional cardiology including those separations in 2022/23 that were transferred to TCH for interventional cardiology services as per ACTHD advice¹²⁵.
- Applying the overall projected population growth rate to the historical 2021/22 activity and apply an average ICU hours stay of 71.3
- Applying projected population growth rate for women aged between 16 and 49 (2.0%) and holding ESRG length of stay to align to the strategies of supporting NCH Maternity services to deliver services to ACT North birthing residents, increase access to the Continuity of Care

¹²⁵ ACTHD, 2022, Review of the temporary arrangement for interventional cardiology between Canberra Health Services, Calvary Public Hospital Bruce and Calvary Bruce Private Hospital.

Model and reduce the caesarean rate to 17.7%.

- For Special Care Nursery, applying an assumption of 29% to ACT North resident vaginal and caesarean delivery activity at NCH and holding length of stay to 5 days.
- Reversing 50% of medical paediatric activity from TCH, reversing 50% of appropriate paediatric surgical activity from TCH and establishing a 5 day a week model for planned care with a focus on workforce planning to ensure sustained weekend cover.
- For Mental Health, applied the projected population growth by age to the overnight admitted mental health activity at NCH and holding length of stay for each age cohort.
- For sub acute, applied the aged population growth rate to 2022/23 historical activity to Maintenance, GEM and Palliative Care, and holding current ALOS for each.
- For HITH, applying the projected population growth rate to historical 2021/22 HITH activity and holding the current length of stay at 4 days.
- For Non-Admitted/ Outpatient services, applying overall projected population growth rate to the NCH NAP 2023/24 activity and utilising the 2021/22 HPA Projection for on-campus proportion.

Appendix 7 – Northside Hospital Clinical Services Plan – Supplementary Analysis - 2022/23 HPA Base case Projections

Introduction

Canberra Health Services (CHS) is undertaking the development of a Clinical Services Plan for the North Canberra Hospital (NCH), in preparation of and to support the facility planning for the Northside Hospital Project, being led by Infrastructure Canberra (iCBR). The collaboration also includes ACT Health Directorate (ACTHD), who bring the Territory-wide health services planning context and are the data custodian of the historical and projected activity data required to complete the Clinical Services Plan (CSP).

In July 2024, the CSP for the Northside Hospital commenced. At this time, the current and available activity projections were the Admitted Patient (AP), Emergency Department (ED) and Non-Admitted Patient (NAP) HPA Base case Projections, developed and based on historical data up to and including the 2020/21. This approach was endorsed by the Northside Hospital Clinical Services and Facility Planning Steering Committee.

In September 2024, ACTHD indicated that new base case projections have been developed and are undergoing user acceptance testing (UAT). At this time, the publication and release of the new AP data is not supported. This means that utilising the most recent HPA Base case Projections that incorporate historical data to 2022/23, cannot occur for the CSP at this time. New ED and NAP base case projections are still under development at this time.

The importance of utilising updated and high-quality data to inform clinical services planning is well understood. Consultation revealed that due to the historical trend of 2018/19 to 2022/23 being inclusive of the COVID pandemic years, implementation of the DHR and the NCH theatre fires, each event had an altering effect on activity trends and patterns which impacts the standardised approaches applied to developing projections. The exclusion of the 2023/24 ABF Extract from the historical trend analysis, also deemed not available for release by ACTHD, has been raised as an issue by key stakeholders.

It has been indicated that changes to models such as hospital avoidance, LOS-reducing initiatives, increased care occurring within the community and overall activity increases due to pressures within the primary care sector, limited access to primary care services and bulk-billing GPs, aging of the population and previous planning undertaken for TCH, are to be considered within future activity estimates and can be modelled against the base case.

The three objectives of this review are:

- To understand the variance between the 2020/21 HPA Base case Projections and the newly developed 2022/23 HP Base case Projections.
- To identify and report potential data quality considerations that will need to be addressed to improve projection integrity.
- To provide justification for the use of the applicable data set for completing the CSP.

Scope

The review covers the unapproved 2022/23 HPA Base case projections, and will examine activity to identify discrepancies across the following variables:

- Urgency of admission
- Care types
- Length of Stay
- Projected annual growth rate trends in separations

The review will exclude episode-level data cleansing and corrections. Identified areas will be collated within this paper and issued to CHS and ACTHD.

Methodology

ACTHD supplied the unapproved 2022/23 HPA Base case Projections as a pivot excel sheet. This is due to the size of the overall projection tool, limiting its performance within an excel spreadsheet, as the volume of the record-level data is greater than the number for data rows within a standard excel spreadsheet. This further limits the ability to analyse the entire dataset, creating test columns and groupings to identify data that may have been allocated codes that may not be applicable. To mitigate this, a series of tests were performed including overall trending, activity by urgency of admissions, day stay, SRG and ESGR and LOS analysis.

The three sources, provided by ACTHD, utilised to inform this review includes:

- Unapproved 2022/23 HPA Base case Projection Tool (TA)
- Approved 2020/21 HPA Base case Projection Tool (TB)
- Current 2022/23 ABF AP Extract (TC)

This test aimed to identify the trend between 2019 to 2041, noting it is the same period utilised for the historical trend analysis for the CSP.

Findings

Overall trend analysis

Variance analysis shows that for historical trends which the projections are based for both 2020/21 and 2022/23 HPA Base case projections, the data and the allocation across acute, mental health and sub-acute care types/streams is consistent. Variations are negligible and can be targeted to individual episode coding and care type allocation at time of patient registration and/or scheduling.

Review of 2021 historical separations by care type and hospital from the three sources shows that there is a consistency in the allocation of activity thus there is a level of confidence with data.

		2021					
		TA-TB		TB-TC		TA-TC	
	Care Types	No.	%	No.	%	No.	%
TCH	Acute	5	0.0%	146	0.2%	151	0.2%
	Mental Health	0	0.0%	2	0.1%	2	0.1%
	Sub Acute	-5	-0.2%	4	0.1%	-1	0.0%
	Total	0	0.0%	152	0.2%	152	0.2%
NCH	Acute	2	0.0%	-113	-0.3%	420	1.3%
	Mental Health	0	0.0%	1	0.1%	1	0.1%
	Sub Acute	-2	-0.3%	1	0.2%	-1	-0.2%
	Total	0	0.0%	-111	-0.3%	-111	-0.3%

Table A: Variance Analysis for 2021 Total Separations by Care Type. Excludes Chemotherapy, Renal Dialysis and Unqualified Neonates.

For historical 2023, variations are noted between the two Base case Projection Tools for NCH for acute and mental health activity demonstrating a significant declining variation between the new 2022/23 and previous 2020/21 Projection Tool.

	Care Types	2023					
		TA-TB		TB-TC		TA-TC	
		No.	%	No.	%	No.	%
TCH	Acute	1,047	1.6%	-952	-1.4%	95	0.1%
	Mental Health	112	5.5%	-70	-3.3%	42	2.0%
	Sub Acute	366	12.3%	-350	-10.5%	16	0.5%
	Total	1,525	2.2%	-1,372	-1.9%	153	0.2%
NCH	Acute	-2,122	-6.5%	2,450	8.0%	-112	-0.4%
	Mental Health	-149	-19.9%	159	27.0%	10	1.7%
	Sub Acute	82	14.3%	-76	-11.7%	6	0.9%
	Total	-2,189	-6.4%	2,093	6.6%	-96	-0.3%

Table B: Variance Analysis for 2023 Total Separations by Care Type

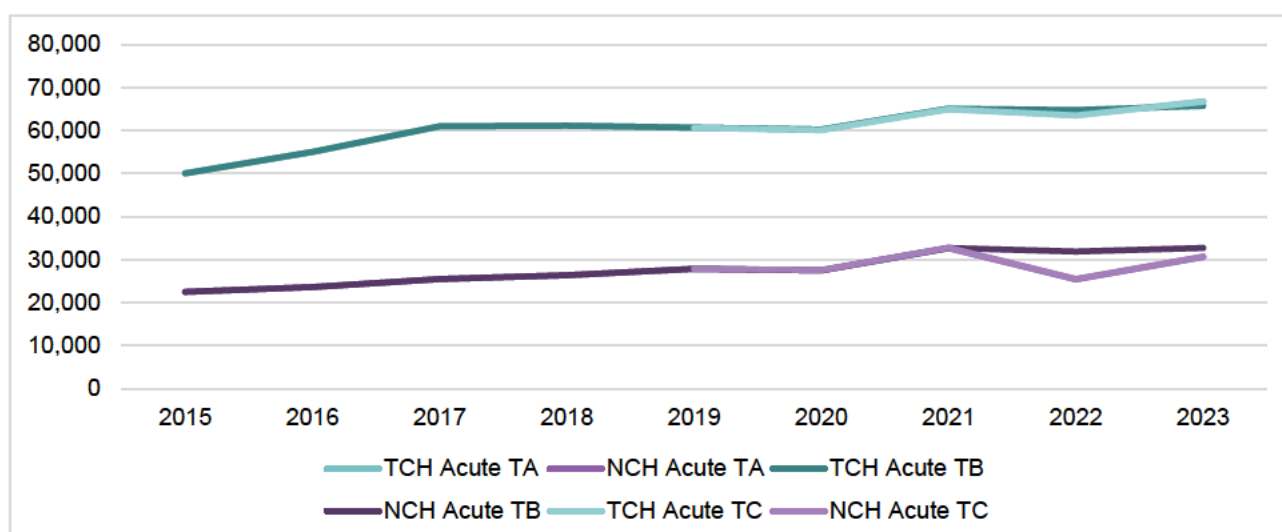


Figure A: Trended Variance Analysis for Total Acute Separations by Projection Methodology

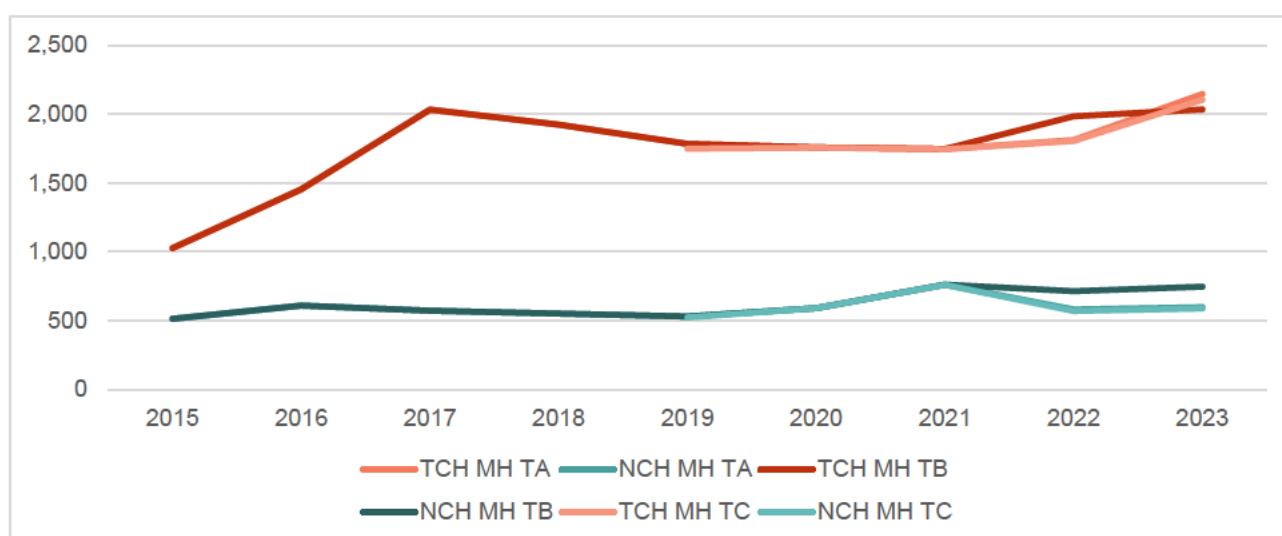


Figure B: Trended Variance Analysis for Total Mental Health Separations by Projection Methodology

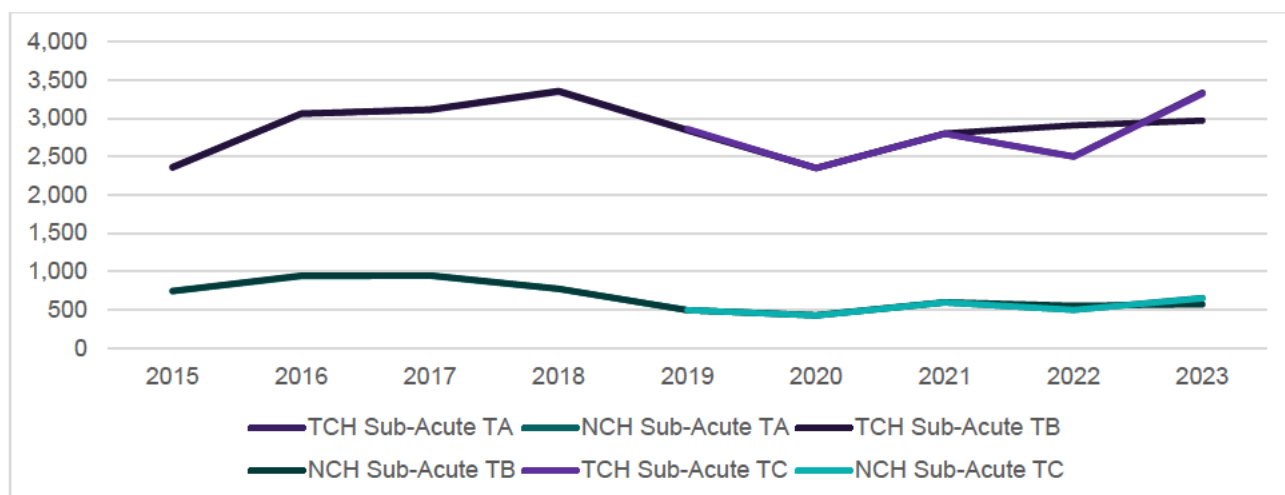


Figure C: Trended Variance Analysis for Total Sub-Acute Separations by Projection Methodology

The cause of this variation will need to be further investigated noting that this reduction in separations, due to COVID and changes in models of care as noted above to care in outpatient and community settings, may influence the growth applied to 2041, leading to overall reduced activity. This notion doesn't specifically align with the current forecasted population growth expected for the ACT North regions, which will be a key driver for increased NCH activity over time, and considered within the CSP.

Furthermore, when comparing the 2023 historical separations with the 2020/21 HPA projected 2023 separations and considering how closely aligned was actual activity to the projection, it can be seen that for TCH, historical/actual separations exceed the projections. For NCH, historical/actual separations did not reach the projected separations noted within the 2020/21 HPA Base case Projections. This could be due operational factors that can be informed by stakeholder consultation.

It is important to note that two significant events occurred across CHS that may have influenced activity levels. Firstly, the implementation of the DHR across the Territory to improve clinical information access, lead to greater transparency of patient information across services and enable better reporting, analysis and interpretation will be a key contributor to future health services planning activities. Secondly, the theatre fires that occurred at NCH that saw the theatre complex non-operational for approximately 9 months, while refurbishment was underway. Consultation as part of the CSP indicated that a majority of planned surgical activity being undertaken at TCH and within ACT private hospitals. Noting that contracted services would likely be assigned to one of the ACT Hospitals for ABF reporting.

High-level data quality tests

To determine the allocation of activity to inform the clinical service planning data analysis, the following tests were undertaken.

Urgency of Admission Analysis for TCH and NCH

Understanding the allocation of emergency and unplanned activity is important in determining potential future infrastructure requirements and future models, particularly as the majority of activity/admissions into a public hospital is through the emergency department. While planned activity influences procedural infrastructure such as operating theatres and procedural rooms including endoscopy.

Noting that current (2022/23) surgical activity has 88% planned and 12% emergency split, the below emergency and planned split is inclusive of all activity including medical, which is likely driving the emergency proportion.

Within the ABF AP extract, 10.4% of TCH separations and 23.6% of NCH separations were allocated to 3-Urgency not assigned and 9-Not known/not reported.

For the historical dataset (TC), this raises the following considerations:

- The majority of 3-Urgency not assigned and 9-Not known/Not reported activity for NCH were for Medical Adult (58%, 4,345), Maternity (24%, 1,799) and Sub-Acute (8%, 613). Thus, raising the validity of utilising the emergency and planned flags to determining assigned activity for scenario modelling.
- Specifically for sub-acute activity which is typically type-changed from acute activity, the unassigned urgency of admission status is influenced by the fact that the activity shows up as unplanned acute before they are type-changed.
- Unallocated Urgency status can potentially also be patients transferring between the two hospitals.

	Source	TC			TC			TB		TA	
	Urgency of Admission	2023 Seps	2023 %		Urgency of Admission	2023 Seps	2023 %	2023 Seps	2023 %	2023 Seps	2023 %
TCH	1 - Urgency status assigned emergency	53,095	73.6%		1- Emergency	53,095	73.6%	55,290	76.7%	53,251	73.8%
	2 - Urgency status assigned elective	11,555	16.0%		9-Planned	19,037	26.4%	15,437	21.4%	19,001	26.3%
	3 - Urgency status not assigned	4,312	6.0%								
	9 - Not known/not reported	3,170	4.4%								
	Total	72,132	100.0%		Total	72,132		70,727		72,252	
NCH	1 - Urgency status assigned emergency	15,905	49.8%		1- Emergency	15,905	49.8%	18,049	56.5%	15,908	49.8%
	2 - Urgency status assigned elective	8,495	26.6%		9-Planned	16,043	50.2%	15,991	50.1%	15,943	49.9%
	3 - Urgency status not assigned	3,226	10.1%								
	9 - Not known/not reported	4,322	13.5%								
	Total	31,948	100.0%		Total	31,948		34,040		31,851	

Table C: Variance Analysis for separations by Urgency of Admission, 2023

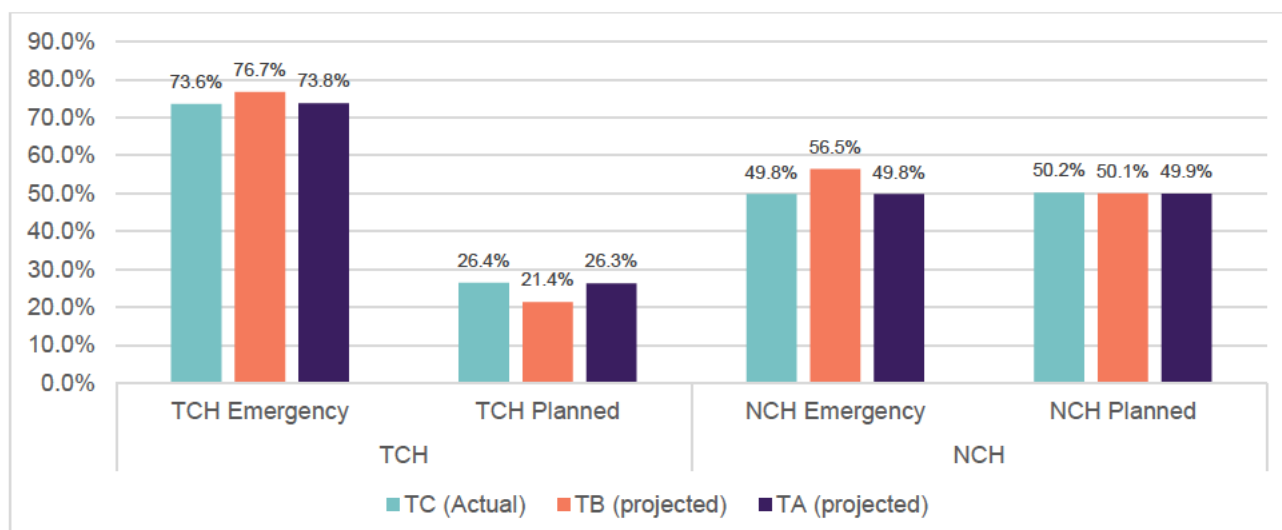


Figure D: Variance Analysis for 2023 Emergency and Planned Separations by Projection Methodology

For the 2020/21 HPA Base case Projection (TB) and 2022/23 HPA Base case Projections Tools (TA), ACTHD confirmed that HPA allocated all emergency separations to 1 – Emergency and allocated planned, urgency not assigned and not known/not reported to 9-Planned. There appears to be a correction within the projection tools as the projected years in the respective tools shows a change with more emergency activity than planned activity.

Source	Urgency of Admission	2021	2023	2026	2031	2036	2041
TA	TCH 1-Emergency	54,261	53,251	59,129	68,869	75,586	80,697
	9-Planned	15,370	19,001	18,453	21,108	23,032	24,810
	NCH 1-Emergency	18,916	15,908	18,889	24,183	28,009	31,156
	9-Planned	15,116	15,943	17,215	20,318	22,491	24,852
TB	TCH 1-Emergency	54,261	55,290	62,053	69,936	75,861	81,198
	9-Planned	15,370	15,437	17,104	18,882	20,577	21,959
	NCH 1-Emergency	18,916	18,049	21,034	25,460	29,340	32,478
	9-Planned	15,116	15,991	17,831	20,045	22,307	24,223

Table D: Base case Projection Tool Comparison for separations by Urgency of Admission. Note: For TB, 2023 represents projected activity and for TA, 2023 is historical activity.

Clinical Stream Analysis

To assist in understanding the clinical activity undertaken at a hospital, clinical groupings are applied to the activity to enable the analysis of separations and bed days by medical, surgical, maternity, mental health, qualified neonates and sub-acute activity. Each of these clinical groupings utilise resources and infrastructure in different ways and for clinical service planning purposes, allows for the tailored analysis.

For the ABF AP Extract, this involved considerable review of patient-level data to enable assignment, as per the table below. While the table below excludes Chemotherapy, Renal Dialysis and Unqualified Neonates SRG, the presence of extremely small volumes of unqualified neonate separations indicates that separations with an age of 0 have been allocated to other SRGs. This further demonstrates the complexity of DRG and SRG allocation overall as aligned to ABF Care Types, and in this instance, the activity is negligible so would be excluded.

Hospital	Clinical Grouping	2019	2020	2021	2022	2023
TCH	Medical-Adult	30,867	30,240	32,799	33,006	31,670
	Surgical-Adult	16,382	17,100	18,620	17,540	17,665
	Acute-Paediatrics	7,898	7,325	8,131	7,537	8,837
	Maternity	4,589	4,629	4,528	4,606	7,727
	Sub-Acute	2,863	2,349	2,799	2,498	3,319
	Mental Health	1,749	1,757	1,744	1,806	2,104
	Qualified Neonates	878	796	858	825	771
	Unknown	1	-	-	-	24
	Organ Procurement	-	-	9	8	9
	Unqualified Neonates	-	-	-	-	6
	TCH Total	65,227	64,196	69,488	67,826	72,132
NCH	Medical-Adult	15,696	15,946	19,319	13,299	18,810
	Surgical-Adult	9,000	8,438	9,688	8,905	7,739
	Maternity	2,257	2,223	2,478	2,343	2,982
	Acute-Paediatrics	476	502	769	427	741
	Sub-Acute	497	426	597	501	648
	Mental Health	524	591	761	571	589
	Qualified Neonates	432	491	531	530	438
	Unknown	-	-	-	-	1
	Unqualified Neonates	1	2	-	-	-
	Organ Procurement	-	-	2	-	-
	NCH Total	28,883	28,619	34,145	26,576	31,948

Table E: 2022/23 ABF AP ACTHD Extract (TA) for Separations by Clinical Grouping.

The same approach is applied to the 2020/21 HPA Base case Projection (TB) and 2022/23 HPA Base case Projections Tools (TA), however there is even more nuanced as only three care type categories are utilised acute, mental health and sub-acute. In this instance, the newborn care type is combined with acute, making extractions difficult when utilising age, SCN and NICU flags alone. Furthermore, no access to the raw patient-level data set to enable manual creation of a Clinical Grouping field also impacts service/discipline-level services planning.

Also, the pre-determined age groupings where separations with age=16 are included in paediatric grouping of 5 to 16, also impacts the ability to extract that activity into the same age groupings utilised for paediatric and adult groups as per the CSP.

Overarchingly as observed in Table A and Table B, the alignment of activity by the care types demonstrates small variances between the three key clinical groupings of acute, mental health and subacute, thus more nuanced analysis that features within the clinical service plan have enabled alignment to the current-state/historical clinical groupings.

A cross-comparison analysis has been undertaken by ACTHD comparing the 2022/23 HPA Base case Projections, showing changes between TA and TB for ACT.

Hospitals	2022	2023	2024	2025	2026	2031	2036	2041
810000082 - TCH	0%	2%	2%	1%	0%	3%	4%	4%
810000083 - NCH	-19%	-6%	-5%	-5%	-6%	-2%	-2%	-1%
810000087 - UCH	-24%	-26%	-17%	-22%	-22%	-16%	-6%	-8%
810000083_CHH	-8%	16%	8%	13%	-1%	10%	7%	4%
Interstate Patients	-28%	-27%	-24%	-26%	-27%	-25%	-25%	-22%
Public in Private Activity	-3%	2%	0%	-1%	-1%	0%	-1%	-1%

Table F: Variation Comparison across ACT. Source: ACTHD, 2024.

Length of Stay Analysis

The table below shows the overnight ALOS for acute activity across the three sources. There are minimal variances among the three indicating at a high-level that the projections have accounted for historical trends with minimal change over time. It is expected that base case projections will reflect a degree of improved length of stay consistent with historic trends which, account for model of care changes or reduction in separations redistribution of acute activity to non-admitted activity.

However, it is recognised that non-admitted activity projections are complex, given that underlying

data quality issues within historical non-admitted activity so a direct reconciliation between admitted and non-admitted projections is not possible at this stage.

Source	2019	2020	2021	2022	2023	2026	2031	2036	2041
TA			3.7	4.3	4.4	4.0	4.1	3.9	4.0
TB			3.7	3.7	3.7	3.7	3.6	3.7	3.7
TC	3.6	3.8	3.6	4.1	4.2				

Table G: Length of Stay Analysis (days) for NCH

Antenatal and postnatal admissions increased activity in historical 2022/23 for TCH and NCH

In the ABF AP Extract, there was a significant increase in separations for TCH and NCH in ESRG 721-Antenatal admission and ESRG 724-Postnatal admissions from 2021/22 to 2022/23. This activity is commonly captured as non-admitted activity, thus it likely there has been a coding practice changes contributing to this increase.

As shown, as the 2020/21 HPA Base case Projection Tool (TB) projected from the 2021 base year for this activity, the projection better reflects the trend for this type of activity, and this has been used for the CSP.

	Source	TC		TA		TB	
	ESRG v6	2022	2023	2022	2023	2022	2023
TCH	721 Antenatal admission	962	4,092	961	4,089	945	919
	724 Postnatal admission	191	349	187	347	224	213
NCH	721 Antenatal admission	485	1,066	485	1,066	567	594
	724 Postnatal admission	105	293	101	291	126	127

Table H: Variance Analysis for 2022 and 2023 Antenatal and Postnatal Admission ESRG Separations

	ESRG v6	2022	2023	2026	2031	2036	2041
TCH	721 Antenatal admission	961	4,089	3,613	3,948	4,091	4,272
	724 Postnatal admission	187	347	354	403	436	438
NCH	721 Antenatal admission	485	1,066	1,375	1,545	1,782	1,885
	724 Postnatal admission	101	291	287	315	322	371

Table I: 2022/23 HPA Base case Projections for Antenatal and Postnatal Admission ESRG Separations, 2022-2041

As observed in Table D, the proposed 2022/23 HPA Base case Projections have maintained the same high-volume trend for these ESRGs, which is very unlikely to persist into the future.

ICU Flags and Hours for NCH

In the ABF AP Extract for NCH, ICU data was not supplied. The CSP utilised the 2020/21 HPA Base case Projection Tool (TB) to understand the historical trend from 2019 to 2021, as shown below.

		2019	2021	2023	2026	2031	2036	2041
NCH	ICU Flag = 1	786	743	672	813	907	987	1,154
	ICU Hours	55,242	49,394	46,271	58,894	64,649	70,632	89,174

Table J: 2020/21 HPA Base case Projection for ICU Activity

In the 2022/23 HPA Base case Projection Tool (TA), represents the following trend for ICU-flagged separations and hours, showing that by 2041, ICU-flagged separations are to have an annual change of 1.1% and ICU hours to have a 2.2% annual change from 2023.

		2019	2021	2022	2023	2026	2031	2036	2041
NCH	ICU Flag = 1	786	743	610	622	552	630	703	756
	ICU Hours	55,242	49,394	49,220	50,082	53,416	68,757	65,685	73,709

Table K: 2022/23 HPA Base case Projection Tool for ICU Activity

Endoscopy Activity at TCH

In the ABF AP Extract for TCH, there appears to be an under-representation of endoscopy activity assigned to TCH, which would typically be allocated to SRG 16 Diagnostic GI. Given the historical volumes, it is assumed that this activity for TCH may be captured within the non-admitted stream. The main impact of this occurred for surgical services scenario modelling to reflect the role of NCH becoming the high-volume low-complexity surgical centre for the ACT.

Between the ABF AP Extract (TC) and 2022/23 HPA Base case Projection Tool (TA), for NCH, there is a considerable variance in separations of 473, meaning the projection tool underreported the 2023 historical activity for endoscopy.

	Source	TC		TB		TA		TC-TA Variance
	SRG v6	2021	2023	2021	2023	2021	2023	2023
TCH	16 Diagnostic GI	841	615	785	670	785	543	72
NCH	16 Diagnostic GI	2,013	1,751	1,560	1,756	1,560	1,278	473

Table L: Variance analysis for SRG 16-Diagnostic GI separations. Note: all care types selected

Source	2021	2023	2026	2031	2036	2041	CARG 2021-2041
TA	1,560	1,278	1,693	1,922	2,351	2,582	2.6%
TB	1,560	1,756	1,909	2,097	2,274	2,602	2.6%

Table M: SRG16-Diagnostic GI separations for NCH

Summary

Based on the objectives outlined in the Introduction, this data review and analysis has indicated the following:

- The variation between the current 2020/21 HPA Projections and unapproved 2022/23 HPA Projections is minimal.
- LOS variance is minimal and is reflective of current activity trends, which shows increasing LOS. Overall, LOS will be addressed within the CSP for specific areas, where improvement is anticipated in the coming years.
- Ongoing work to refine data capture and coding practices may address variances observed across antenatal activity and endoscopy.
- Review of the CSP within 18 to 24 months to enable the trended analysis involving 2023/24, 2024/25 and 2025/26.

Appendix 8 – Canberra Health Services Operating Theatre Requirements Analysis

Introduction

On 5th December 2024, the Northside Hospital Clinical Service Plan (CSP) was presented at the Northside Hospital Clinical Services and Facility Planning Project Steering Committee and endorsed by CHS. On 19th December 2024, the CSP was presented to the Project Board for noting, where it was requested that a Territory-wide review of operating theatre requirements to 2041 be undertaken.

The purpose of the review was to determine if there be adequate theatre capacity to meet the needs of CHS by 2041, specifically considering the theatre infrastructure requirements for Northside Hospital to satisfy this.

In January 2025, CHS issued three location-based theatre data extracts for North Canberra Hospital (NCH) and The Canberra Hospital (TCH). The following were provided to Linéaire Projects:

- ACTPAS for The Canberra Hospital (TCH) for 1/01/2019 to 10/11/2022 (72,525 records)
- IPM for North Canberra Hospital (NCH) for 1/07/2019 to 10/11/2022 (36,205 records)
- DHR for TCH and NCH for 12/11/2022 to 9/01/2025 (71,347 records)

A data cleanse activity was undertaken to consolidate the three data sets into a single modified data set. Table 1 outlines the outcomes of the data cleanse activity to produce the single data set that formed the basis of the analysis.

Data cleanse activity	Record Number
Total Records	180,077
Step 1 – Missing variables, duplications, other data quality issues in ACTPAS and DHR excluded	8,393
Combined three extracts to create new single extract	171,684
Step 2 – Records with nil surgery end time excluded	3,571
Step 3 – Records with surgery start time later than surgery end time	554
Records retained for analysis	167,559
<i>Total unique records excluded</i>	<i>12,518</i>

Table 1: Data Cleanse Activity. Sources: ACTPA, IPM and DHR provided by CHS Decision Support Unit (DSU), 2025.

Limitations and Clarifications

The following limitations and clarifications were noted for the analysis:

- Data provided is location-based i.e. activity undertaken at TCH or NCH.
- Place of residence data was not available within the three source data sets.
 - This limits the ability to distinguish between place of residence. The analysis utilised the CSP proportion of ACT North and ACT South residents at the respective hospitals to test the CSP Theatre Scenario Model.
- Financial class data noted as unreliable as translation between public and insured/private patients was not possible within current data extracts.
- Specialities across the three data sources are varied and was not adjusted.
 - The analysis focused on all surgery and procedures irrespective of speciality for this reason.
- Due to variability of the data elements, the following key elements have informed the analysis:
 - Age
 - Urgency Of Admission
 - Procedure Start Date and Time
 - Procedure End Date and Time

- Due to the NCH Theatre Fires that occurred in December 2022, theatre activity was undertaken at TCH and in private hospitals till October 2023, when the NCH theatre suite refurbishment was completed.
 - The analysis revealed 379 records of NCH activity undertaken in a private hospital, which was allocated to NCH for the analysis.
 - After the initial analysis, CHS DSU provided an extract for planned surgical activity including contracted care activity.
- Inconsistency with Check In Date and Time resulted in its exclusion from analysis.
- As Wheels In (wi) and Wheels Out (wo) Times were not available in the three source data sets, surgery start and surgery end date time was utilised to determine average case time per year and used in the analysis.
- Due to the difficulty in identifying endoscopy data within the three source data sets, a separate operational activity report for scope procedures was provided by CHS DSU, to aid analysis.

Initial Analysis

The current state of theatres across the CHS represented in Table 2. This was confirmed by consultation with CHS and NCH as part of the CSP development and during this analysis.

Clarifications include:

- Building 5 has 16 general theatres, 4 hybrid theatres and 2 Interventional Radiology suites.
- Building 12 theatres are for unplanned caesarean cases only. No planned work undertaken.
- The remaining Building 12 theatres will be decommissioned in the future to allow for 6 endoscopy rooms.
- NCH has 4 planned theatres and 0.5 theatre for unplanned cases.

Facility	Theatre Type	Theatre Location	Current (2024)	
			Available	Built
TCH	Operating Theatres	Building 5	11(+2)	20(+2)
		Building 12	2	2
	Procedural Rooms	Endoscopy (Building 1)	2	3
		Neurostim (Building 25)	1	1
TCH Total excluding IR, Neurostim			15	25
NCH	Operating Theatres	Theatre Suite	4.5 (5)	7
	Procedural Rooms	Theatre Suite	1	1
NCH Total			5.5	8

Table 2: Current Available and Built Theatres, NCH and TCH. Source: CHS, 2024.

Table 3 presents the total cases and calculated average case time by unplanned and planned urgency of admission. Between 2019/20 to 2023/24:

- Theatre activity at NCH shows a reducing trend overall, while TCH theatre activity had an increasing trend particularly for planned cases.
- NCH had a higher proportion of planned cases compared to unplanned cases, while this is reverse for TCH with a greater proportion of unplanned cases compared to unplanned cases.
- For NCH, the average case time for unplanned cases ranged from 43.3 minutes in 2019/20 to 51.1 minutes in 2023/24. While planned cases ranged from 33.5 minutes to 42/7 minutes for the same period.
- While for TCH, average case time for planned cases remained relatively stable at 77.3 minutes in 2023/24. While unplanned average case time increased from 49.9 minutes in 2019/20 to 60.2 minutes in 2023/24.

Facility	Urgency of Admission	2019/20	2020/21	2021/22	2022/23	2023/24	2023/24 Proportion	Variance	Growth	CAGR 2020-2024
NCH	Unplanned Cases	1,881	2,040	2,044	1,477	1,525	20.0%	(356.0)	(18.9)%	(5.1)%
	Unplanned Average Case Time	43.3	44.1	41.7	45.6	51.1		7.8	18.0%	4.2%
NCH	Planned Cases	8,111	9,547	8,726	5,504	6,093	80.0%	(2,018.0)	(24.9)%	(6.9)%
	Planned Average Case Time	33.5	35.5	36.1	38.9	42.7		9.2	27.6%	6.3%
NCH Total Cases		9,992	11,587	10,770	6,981	7,618		(2,374.0)	(23.8)%	(6.6)%
TCH	Unplanned Cases	12,194	12,602	12,107	11,367	12,349	61.2%	155.0	1.3%	0.3%
	Unplanned Average Case Time	49.9	49.9	51.0	58.5	60.2		10.3	20.5%	4.8%
TCH	Planned Cases	6,491	6,963	6,364	7,056	7,825	38.8%	1,334.0	20.6%	4.8%
	Planned Average Case Time	77.5	76.1	75.3	76.9	77.3		(0.2)	(0.3)%	(0.1)%
TCH Total Cases		18,685	19,565	18,471	18,423	20,174		1,489.0	8.0%	1.9%
CHS		28,677	31,152	29,241	25,404	27,792		(885.0)	(3.1)%	(0.8)%

Table 3: Theatre Cases and Average Case Time, NCH and TCH. Sources: ACTPA, IPM and DHR provided by CHS Decision Support Unit (DSU), 2025. Excludes NULL values. Includes all ages, all specialities.

Modified Base Case Analysis

A modified base case projection exercise was undertaken, which includes applying the age-specific population growth rates for ACT North for NCH to reflect that NCH will provide services predominately to its local catchment (ACT North suburbs). For TCH, the age-specific population growth rates were applied to reflect that some residents from ACT North will continue to go to TCH into the future. This exercise does not any patient flow changes between the two hospitals.

Table 4 shows that by 2031, NCH is estimated to perform 9,166 unplanned and planned cases and TCH is estimated to perform 22,660 cases. This estimates a growth of 20.3% for NCH and 12.3% for TCH between 2024 and 2031.

By 2041, it is estimated that NCH will have a 49.1% growth in total theatre cases with TCH having a 28.4% growth rate.

Facility	Age	Urgency of Admission	2024	2025	2026	2031	2036	2041	CAGR 2024-2031	CAGR 2024-2041
NCH	00-15	Unplanned	1	1	1	1	1	1	2.2%	2.2%
	16-49	Unplanned	1,096	1,119	1,142	1,267	1,406	1,559	2.1%	2.1%
	50-64	Unplanned	180	185	191	220	254	293	2.9%	2.9%
	65-74	Unplanned	119	122	125	142	162	184	2.6%	2.6%
	75+	Unplanned	129	134	139	166	198	237	3.6%	3.6%
	Total	Unplanned	1,525	1,561	1,598	1,797	2,021	2,275	2.4%	2.4%
	00-15	Planned	83	85	87	97	108	120	2.2%	2.2%
	16-49	Planned	1,933	1,974	2,015	2,235	2,479	2,750	2.1%	2.1%
	50-64	Planned	1,367	1,407	1,448	1,671	1,929	2,227	2.9%	2.9%
	65-74	Planned	1,305	1,339	1,374	1,563	1,777	2,021	2.6%	2.6%
	75+	Planned	1,405	1,456	1,509	1,804	2,156	2,577	3.6%	3.6%
	Total	Planned	6,093	6,260	6,432	7,369	8,449	9,696	2.8%	2.8%
Total NCH Cases			7,618	7,821	8,030	9,166	10,471	11,971	2.7%	2.7%
TCH	00-15	Unplanned	1,560	1,584	1,608	1,736	1,874	2,023	1.5%	1.5%
	16-49	Unplanned	5,576	5,664	5,753	6,221	6,726	7,273	1.6%	1.6%
	50-64	Unplanned	2,063	2,097	2,131	2,313	2,510	2,723	1.6%	1.6%
	65-74	Unplanned	1,387	1,405	1,423	1,518	1,619	1,727	1.3%	1.3%
	75+	Unplanned	1,763	1,805	1,847	2,077	2,334	2,624	2.4%	2.4%
	Total	Unplanned	12,349	12,555	12,764	13,864	15,063	16,369	1.7%	1.7%
	00-15	Planned	1,027	1,043	1,059	1,143	1,234	1,332	1.5%	1.5%
	16-49	Planned	2,406	2,444	2,482	2,684	2,902	3,138	1.6%	1.6%
	50-64	Planned	1,576	1,602	1,628	1,767	1,917	2,080	1.6%	1.6%
	65-74	Planned	1,373	1,391	1,409	1,503	1,603	1,709	1.3%	1.3%
	75+	Planned	1,443	1,477	1,512	1,700	1,911	2,148	2.4%	2.4%
	Total	Planned	7,825	7,957	8,091	8,796	9,566	10,407	1.7%	1.7%
Total TCH Cases			20,174	20,511	20,854	22,660	24,629	26,776	1.7%	1.7%
Total CHS			27,792	28,332	28,884	31,826	35,100	38,747	2.0%	2.0%

Table 4: Modified Base case Theatre Cases to 2041, NCH and TCH. Sources: ACTPA, IPM and DHR provided by CHS Decision Support Unit (DSU), 2025; ACT Population Projections, CMTEDD, 2022. Excludes NULL values. Includes all ages, all specialities. Rounding has been applied.

Scenario Model

To replicate the CSP scenario model undertaken for theatres, the following assumptions to the modified base case output were applied:

- 50% of ACT North Residents from TCH flow back to NCH for planned low complex surgery from 2026.
- 50% of ACT South Residents from TCH flow back to NCH for planned low complex surgery from 2031.
- 50% of ACT North Residents from TCH flow back to NCH for unplanned surgery from 2031.

Table 5 shows the output of the scenario model for NCH and TCH from 2024 to 2041. It shows the redistribution of cases from TCH to NCH, aligned to the strategic directions of CHS for surgery across the Territory.

Facility	Age	Urgency of Admission	2024	2025	2026	2031	2036	2041	CAGR 2024-2031	CAGR 2024-2041
NCH	00-15	Unplanned	1	1	1	1	1	1	2.2%	2.2%
	16-49	Unplanned	1,096	1,119	1,142	1,849	2,035	2,240	7.8%	4.3%
	50-64	Unplanned	180	185	191	437	489	548	13.5%	6.8%
	65-74	Unplanned	119	122	125	285	314	346	13.3%	6.5%
	75+	Unplanned	129	134	139	360	416	482	15.8%	8.1%
	Total	Unplanned	1,525	1,561	1,598	2,932	3,256	3,618	9.8%	5.2%
	00-15	Planned	83	85	87	97	108	120	2.2%	2.2%
	16-49	Planned	1,933	1,974	2,178	2,578	2,850	3,151	4.2%	2.9%
	50-64	Planned	1,367	1,407	1,555	1,897	2,174	2,493	4.8%	3.6%
	65-74	Planned	1,305	1,339	1,467	1,754	1,982	2,240	4.3%	3.2%
	75+	Planned	1,405	1,456	1,609	2,021	2,400	2,851	5.3%	4.3%
	Total	Planned	6,093	6,260	6,896	8,346	9,513	10,854	4.6%	3.5%
Total NCH Cases			7,618	7,821	8,494	11,278	12,769	14,472	5.8%	3.8%
TCH	00-15	Unplanned	1,560	1,584	1,608	1,736	1,874	2,023	1.5%	1.5%
	16-49	Unplanned	5,576	5,664	5,753	5,638	6,097	6,592	0.2%	1.0%
	50-64	Unplanned	2,063	2,097	2,131	2,096	2,275	2,468	0.2%	1.1%
	65-74	Unplanned	1,387	1,405	1,423	1,376	1,468	1,565	-0.1%	0.7%
	75+	Unplanned	1,763	1,805	1,847	1,882	2,116	2,379	0.9%	1.8%
	Total	Unplanned	12,349	12,555	12,764	12,729	13,829	15,027	0.4%	1.2%
	00-15	Planned	1,027	1,043	1,059	1,143	1,234	1,332	1.5%	1.5%
	16-49	Planned	2,406	2,444	2,319	2,342	2,532	2,738	-0.4%	0.8%
	50-64	Planned	1,576	1,602	1,521	1,541	1,672	1,815	-0.3%	0.8%
	65-74	Planned	1,373	1,391	1,316	1,311	1,398	1,491	-0.7%	0.5%
	75+	Planned	1,443	1,477	1,412	1,483	1,667	1,874	0.4%	1.5%
	Total	Planned	7,825	7,957	7,627	7,819	8,503	9,249	0.0%	1.0%
Total TCH Cases			20,174	20,511	20,391	20,548	22,331	24,275	0.3%	1.1%
Total CHS			27,792	28,332	28,884	31,826	35,100	38,747	2.0%	2.0%

Table 5: Scenario Theatre Cases to 2041, NCH and TCH. Sources: ACTPA, IPM and DHR provided by CHS Decision Support Unit (DSU), 2025; ACT Population Projections, CMTEDD, 2022. Excludes NULL values. Includes all ages, all specialities. Rounding has been applied.

To determine the theatre requirements based on the scenario model, the following assumptions were applied and approved following consultation with CHS:

- Assuming that theatres are available for 8 hours per day.
- Unplanned occupancy set at 50% to reflect the nature of emergency cases presenting over a day, maintenance periods, cleaning between cases and preparing the theatre.
- Planned occupancy set at 80%, reflecting the scheduled nature of cases, maintenance periods, cleaning between cases and preparing the theatre.
- Unplanned average case time for NCH of 51.1 minutes based on 2023/24 data.
- Planned average case time for NCH of 42.7 minutes based on 2023/24 data.
- Unplanned average case time for TCH of 60.2 minutes based on 2023/24 data.
- Planned average case time for NCH of 77.3 minutes based on 2023/24 data.
- A 15% adjustment was applied to capture the proportion of unplanned cases that occur out of normal hours.
- A 20% adjustment was applied to reflect the proportion of cases that have a wheels in and wheels out time greater than surgery start and surgery end time. This was to capture time that couldn't be determined due to the datasets' limitations.

- Stage 1 recovery spaces calculated at 1.5 spaces per theatre and procedure room requirement.
- Stage 2/3 recovery spaces calculated at 3 spaces per theatre and procedure room requirement.

Table 6 shows that by 2031, NCH has a calculated requirement of 7.1 (8) theatres and 9.1 (10) theatres by 2041.

NCH	2024	2025	2026	2031	2036	2041
Unplanned	1.1	1.1	1.1	2.0	2.3	2.5
Planned	2.8	2.9	3.2	3.9	4.4	5.0
Total Theatres	3.9	4.0	4.3	5.9	6.7	7.6
Total Recovery Spaces	17	18	19	27	30	34
<i>Adjustment if wi/wo > start-end time</i>	20%	20%	20%	20%	20%	20%
Adjusted theatres - Unplanned	1.3	1.3	1.3	2.5	2.7	3.0
Adjusted theatres - Planned	3.4	3.5	3.8	4.6	5.3	6.0
Adjusted theatres - Total	4.7	4.8	5.2	7.1	8.0	9.1
Adjusted Recovery Spaces - Total	21	22	23	32	36	41

Table 6: Scenario Theatre Requirements to 2041, NCH. Sources: ACTPA, IPM and DHR provided by CHS Decision Support Unit (DSU), 2025; ACT Population Projections, CMTEDD, 2022. Excludes NULL values. Includes all ages, all specialities. Rounding has been applied.

Table 7 shows that by 2031, TCH has a calculated requirement of 20.4 (21) theatres and 24.1 (25) theatres by 2041.

TCH	2024	2025	2026	2031	2036	2041
Unplanned	10.1	10.3	10.5	10.4	11.3	12.3
Planned	6.6	6.7	6.4	6.6	7.1	7.8
Total Theatres	16.7	17.0	16.9	17.0	18.5	20.1
Total Recovery Spaces	75	76	76	76	83	90
<i>Adjustment if wi/wo > start-end time</i>	20%	20%	20%	20%	20%	20%
Adjusted theatres - Unplanned	12.1	12.4	12.6	12.5	13.6	14.8
Adjusted theatres - Planned	7.9	8.0	7.7	7.9	8.6	9.3
Adjusted theatres - Total	20.0	20.4	20.2	20.4	22.2	24.1
Adjusted Recovery Spaces - Total	90	92	91	92	100	108

Table 7: Scenario Theatre Requirements to 2041, TCH. Sources: ACTPA, IPM and DHR provided by CHS Decision Support Unit (DSU), 2025; ACT Population Projections, CMTEDD, 2022. Excludes NULL values. Includes all ages, all specialities. Rounding has been applied.

Additional Analysis

Understanding that there are inherent data limitations with the datasets provided, CHS DSU supplied additional summary data for elective surgery which included contracted care data at NCH and TCH.

The same modified base case exercise and scenario was applied at a high level to test the theatre requirement outputs. Also, age-specific population growth rates could not be applied due to the summary nature of the data provided. Thus, the high-level test applied the overall population annual growth rate for the ACT North region of 2.4% for NCH and the overall population annual growth rate for the whole ACT of 1.6% for TCH.

Table 8 reflects the outputs from this test, where by 2041, NCH is projected to perform 14,862 cases and TCH is estimated to perform 24,720 cases. The difference between Table 5 outputs and Table 8 outputs is approximately an additional 400 cases for NCH and 500 cases for TCH, a variance of 2.7% and 1.8% respectively.

Facility	Age	Urgency of Admission	2024	2025	2026	2031	2036	2041	CAGR 2024-2031	CAGR 2024-2041
NCH	All ages	Unplanned	1,525	1,562	1,599	3,092	3,425	3,796	10.6%	5.5%
	All ages	Planned	6,411	6,565	7,321	8,825	9,881	11,066	4.7%	3.3%
NCH	All ages	Total	7,936	8,126	8,920	11,917	13,307	14,862	6.0%	3.8%
TCH	All ages	Unplanned	12,349	12,547	12,747	12,509	13,542	14,660	0.2%	1.0%
	All ages	Planned	8,804	8,945	8,489	8,583	9,292	10,059	(0.4%)	0.8%
TCH	All ages	Total	21,153	21,491	21,236	21,092	22,834	24,720	0.0%	0.9%
Total CHS			29,089	29,618	30,157	33,008	36,140	39,582	1.8%	1.8%

Table 8: High-level Test Scenario Theatre Cases to 2041, NCH and TCH. Sources: Elective Surgery Summary Data Table provided by CHS Decision Support Unit (DSU), 2025; ACT Population Projections, CMTEDD, 2022. Excludes NULL values. Includes all ages, all specialities. Rounding has been applied.

Table 9 shows the projected theatres requirements from this high-level test, with NCH projecting a requirement of 7.5 (8) by 2031 and 9.3 (10) by 2041.

NCH	2024	2025	2026	2031	2036	2041
Unplanned	1.1	1.1	1.1	2.2	2.4	2.6
Planned	3.0	3.0	3.4	4.1	4.6	5.1
Total Theatres	4.0	4.1	4.5	6.2	7.0	7.8
Total Recovery Spaces	18	19	20	28	31	35
Adjustment if wi/wo > start-end time	20%	20%	20%	20%	20%	20%
Adjusted theatres - Unplanned	1.3	1.3	1.3	2.6	2.9	3.2
Adjusted theatres - Planned	3.6	3.7	4.1	4.9	5.5	6.2
Adjusted theatres - Total	4.8	5.0	5.4	7.5	8.4	9.3
Adjusted Recovery Spaces - Total	22	22	24	34	38	42

Table 9: High-level Test Scenario Theatre Requirements to 2041, NCH. Sources: Elective Surgery Summary Data Table provided by CHS Decision Support Unit (DSU), 2025; ACT Population Projections, CMTEDD, 2022. Excludes NULL values. Includes all ages, all specialities. Rounding has been applied.

Table 10 shows that by 2031, TCH has a calculated requirement of 20.9 (21) theatres and 24.5 (25) theatres by 2041.

TCH	2024	2025	2026	2031	2036	2041
Unplanned	10.1	10.3	10.5	10.3	11.1	12.0
Planned	7.4	7.5	7.1	7.2	7.8	8.4
Total Theatres	17.5	17.8	17.6	17.5	18.9	20.5
Total Recovery Spaces	79	80	79	79	85	92
Adjustment if wi/wo > start-end time	20%	20%	20%	20%	20%	20%
Adjusted theatres - Unplanned	12.1	12.3	12.5	12.3	13.3	14.4
Adjusted theatres - Planned	8.9	9.0	8.5	8.6	9.4	10.1
Adjusted theatres - Total	21.0	21.3	21.1	20.9	22.7	24.5
Adjusted Recovery Spaces - Total	95	96	95	94	102	110

Table 10: High-level Test Scenario Theatre Requirements to 2041, NCH. Sources: Elective Surgery Summary Data Table provided by CHS Decision Support Unit (DSU), 2025; ACT Population Projections, CMTEDD, 2022. Excludes NULL values. Includes all ages, all specialities. Rounding has been applied.

CHS DSU also supplied a separate operational activity report for scope procedures, which allowed for an understanding of endoscopy room requirements specifically. The same methodology as the High-level Test for planned activity was applied, noting the limitations with the Initial Analysis underrepresenting endoscopy activity though some was included. Therefore, it is recognised that some double-counting has occurred.

Table 11 shows the potential endoscopy and other scopes procedure room requirements for NCH of 2.5 (3) and TCH of 5.3 (6) by 2041.

Facility		2024	2025	2026	2031	2036	2041
NCH	Endoscopy room requirement	1.4	1.4	1.6	2.0	2.2	2.5
	Endoscopy recovery space requirement	6	6	7	9	10	11
TCH	Endoscopy room requirement	4.6	4.7	4.5	4.5	4.9	5.3
	Endoscopy recovery space requirement	21	21	20	20	22	24

Table 11: High-level Test Scenario Endoscopy Room Requirements to 2041, NCH. Sources: CHS GEHU Endoscopy Operational Activity Dashboard provided by CHS Decision Support Unit (DSU), 2025; ACT Population Projections, CMTEDD, 2022. Rounding has been applied.

Consultation

Consultation with CHS and ACT Health Directorate (ACTHD) on 3rd February 2025 noted confidence with this analysis as well as an alignment between the aforementioned methodology undertaken by Linéaire Projects, and a separate analysis undertaken by ACTHD. The following points were noted:

- Ten (10) theatres at NCH to reflect that there is no further planned theatre infrastructure at TCH to 2041
- The Territory-wide requirement of nine (9) endoscopy rooms is satisfied by the future building of six (6) endoscopy rooms at TCH, and three (3) endoscopy rooms planned for NCH as part of the Northside Hospital Project.

The above was presented and endorsed at the Northside Hospital Clinical Services and Facility Planning Project Steering Committee on 6th February 2025.

Summary

Based on the purpose of this review outlined in the Introduction, this data review and analysis indicated that to meet the future theatre requirements for the Territory, the following theatre requirements are indicated for NCH/Northside Hospital:

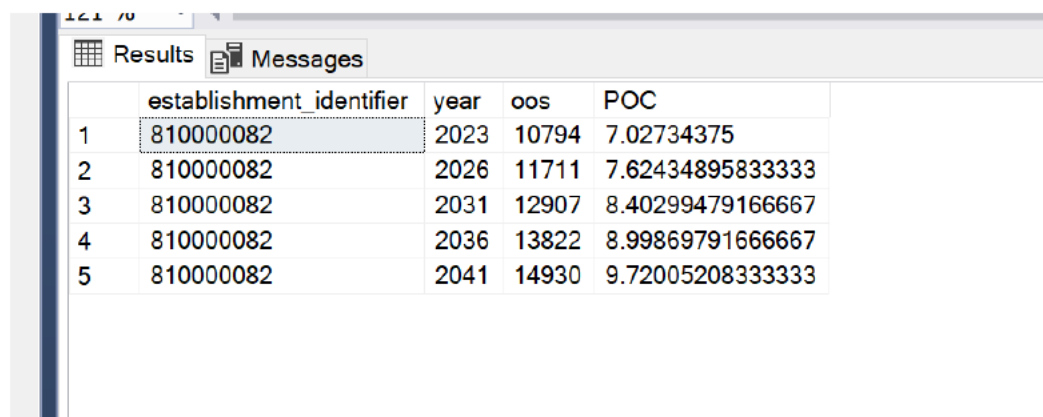
- By 2031, there is a projected theatre requirement of 8 theatres and 2 endoscopy rooms.
- By 2031, there is a projected recovery requirement of a total of 45 recovery spaces based on projected theatres and endoscopy rooms.
- By 2041, there is a projected theatre requirement of 10 theatres and 3 endoscopy rooms.
- By 2041, there is a projected recovery requirement of a total of 59 recovery spaces based on projected theatres and endoscopy rooms.

This has been endorsed by the Northside Hospital Clinical Services and Facility Planning Project Steering Committee.

Appendix 9 – Canberra Health Services Ambulatory Care Analysis

ACTHD undertook an analysis of ambulatory care requirements, with the analysis outlined below, to accommodate the transfer of ophthalmology services from The Canberra Hospital to the North Canberra Hospital.

ACTHD provided the outcomes of the analysis on 3rd February and 7th February 2025 respectively. Figure 1 provides the data source for the analysis.



	establishment_identifier	year	oos	POC
1	810000082	2023	10794	7.02734375
2	810000082	2026	11711	7.62434895833333
3	810000082	2031	12907	8.40299479166667
4	810000082	2036	13822	8.99869791666667
5	810000082	2041	14930	9.72005208333333

Figure 1: ACTHD Extract from HPA NAP forecasting version 20241105, hospital-based ophthalmology (tier 2: 20.17) occasions of service, with CSP-aligned non-admitted throughput of 1,536 OOS per room per year. Issued via email on 3/02/2025.

The approach outlined by ACTHD includes a Demand Transfer Adjustments, using FY 2022–23 as the base year, transfer all future OOS increases at The Canberra Hospital to Northside Hospital, and keeping the University of Canberra forecasting unchanged.

Through the CSP Steering Committee, CHS and ACTHD agreed upon an increase in ambulatory services by 10 points of care (POC), to accommodate this transfer. This is an additional 10 spaces to the 2041 ambulatory and non-admitted care requirement outlined within the CSP of 99. This takes the total Outpatient/HITH/Allied Health/Community Health POC to 109. (Table1)

	NCH Current Built 2024	NCH CSP 2031 Projected	NCH CSP 2041 Projected	CHS and ACTHD Agreed Amendment
Outpatient Rooms/Spaces	19	57	72	82
HITH spaces	16	21	27	27
Total NAP Spaces incl HITH	35	78	99	109

Table 1: CHS and ACTHD Agreed Amendment to Total Outpatient/HITH/Allied Health/Community Health POC. Sources: Canberra Health Performance Profile Series 1, 2024, CHS, 2024; HPA NAP forecasting version 20241105. Rounding has been applied.

