CLINICAL SERVICE PLAN

# Austin

# 2025

Austin Health

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# Contents

# Executive Summary

## ABOUT THIS PLAN

**The Austin 2025 Clinical Services Plan (Austin 2025) provides direction and priorities for Austin Health's clinical services for the next ten years. The Plan recommends the future service profile and configuration, clinical service enablers, partnerships and infrastructure required to best meet the needs of Austin Health's local and extended catchment over the next ten years. Its development was informed by extensive consultation with patients, our senior clinical staff and service managers, our primary care partners, and our neighbouring health services.**

## AUSTIN HEALTH NOW

Austin Health provides an extensive range of acute, sub-acute and mental health services and a comprehensive range of specialist outpatient services and outreach services.

In addition to being a major provider of specialist health services to Victoria, Austin Health has a strong commitment to providing community hospital services to its local community.

Austin Health is home to a number of state-wide services, such as the Victorian Spinal Cord Service, Victorian Respiratory Support Service, Victorian Liver Transplant Service, Acquired Brain Injury (ABI) Unit, Child Mental Health Inpatient Unit and Victorian Poisons Information Centre.

Our clinical services are provided from Austin Hospital, Heidelberg Repatriation Hospital (HRH), Royal Talbot Rehabilitation Centre (RTRC) and some community facilities.

## FUTURE ROLE

Austin Health's role will continue to be the provision of:

- Highly specialised services to its broader regional or state-wide catchment population
- An appropriate volume of community hospital-type services to its local catchment population
- Integrated strong education and research programs.

Austin Health also has an important role within the context of the broader health system. Austin Health will:

- Support Primary care services in Austin Health's catchment, to keep people well and out of hospital
- Partner with neighbouring acute health services to ensure a complementary mix of services within the region that are sustainable, well-coordinated, and enable easy movement between them
- Referral hospitals for our state-wide and regional services, for shared care models that enable care close to home.

## PROJECTED POINT OF CARE (POC) REQUIREMENTS

Austin Health's forecast inpatient bed requirements in 2021–22 and 2026–27 are presented in *Table 1*. Projections do not take into account future changes in models of care or health technologies. 31 ICU beds will be required by 2026–27: two more than existing (funded and unfunded) ICU beds.

A 24 bed SSOU will open in 2017 – and will relieve significant pressure on available ED treatment spaces (currently 39, but 47 from 2017). ED treatment space requirements are forecast to increase to 52 and 63 in 20121–22 and 2026–27 respectively. Service model changes and the opening of the SSOU are expected to dampen the forecast growth in demand for ED treatment spaces, and relieve pressure on inpatient beds.

The opening of four refurbished theatres at HRH in 2013 has resulted in an increase in the volume of surgery performed at HRH – and will increase the requirement for multi-day and same-day beds beyond the number projected in this plan.

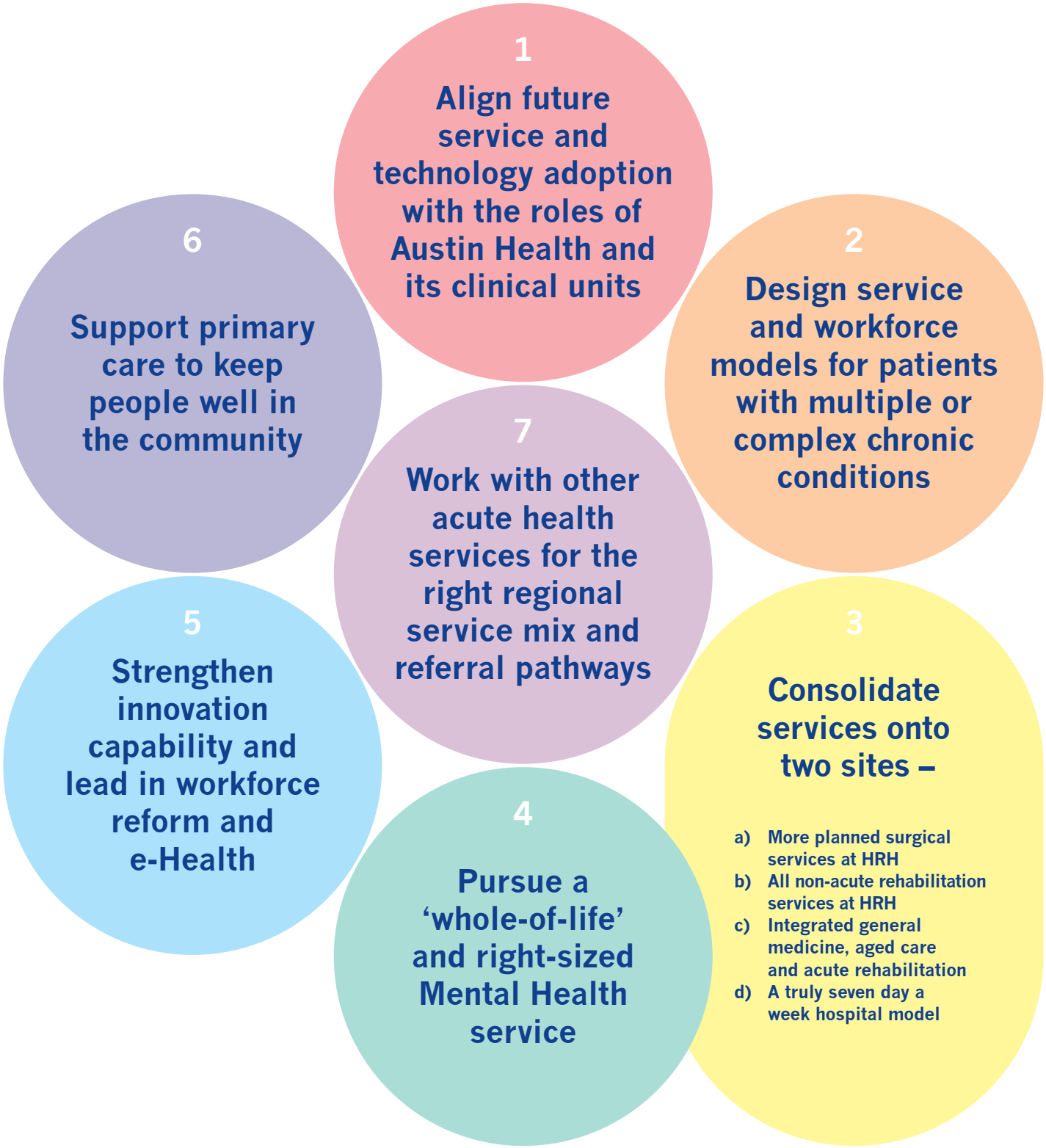
## Table 1: Projected bed requirements to 2026–27 by care type

| CARE TYPE | EXISTING POC* | 2021–22 PROJECTED POC | 2026–27 PROJECTED POC | VARIANCE 2021–22 PROJECTED POC | VARIANCE 2026–27 PROJECTED POC |
|---|---|---|---|---|---|
| ED SSOU | 24 | Forecast ED SSOU beds are not included, as the forecast model is not sensitive to the proposed model of care changes in ED. The current 14 SSOU beds are fully utilised. | | | |
| Renal dialysis satellite | 28 | 27.9 | 32.2 | 0 | -4 |
| Renal dialysis same day | 39** | 29.7 | 32.2 | 9 | 7 |
| Same day acute | 118 | 78.2 | 85.4 | 40 | 33 |
| Multi-day Acute | 491 | 543.7 | 582.2 | -53 | -91 |
| Mental Health | 111 | 87.9 | 94.4 | 23 | 17 |
| Sub-acute | 210 | 212.9 | 230.2 | -3 | -20 |
| Total (excluding SSOU beds) | 997 | 980 | 1,057 | 17 | -60 |

Source: DHHS Inpatient Projection Model 2014 (IPM2014)

* Existing (funded and unfunded) points of care by 2017 following completion of capital works in ED (SSOU) and at HRH
** Includes five home therapies centre chairs

## FUTURE PRIORITIES




[1] See section 8 of this plan

## OUR SERVICES IN FUTURE

Austin Health will continue to provide the same range of services in future, and sees no need to exit any services currently offered.

Austin Health will have a strong planning focus on its highly specialised (i.e. state-wide and regional) services to ensure ongoing leadership and viability of these services.

RECOMMENDATION 1

**That Austin Health continues to develop service stream plans and regularly reviews its highly specialized services to ensure an appropriate referral base, timely uptake of emerging evidence-based health technologies and practices, and ongoing viability.**

## FUTURE MODELS OF CARE

Austin Health has identified the need to review and redesign models of care in response to:

- The growing prevalence of patient with multiple or complex chronic conditions in our catchment
- The evidence of association between patient complexity and patient outcomes and length of stay (LOS)
- Current low level of access to aged care physicians at Austin Hospital
- Evidence that co-location and improved integration of acute and sub-acute care improves patient outcomes and reduces LOS
- Projected demand for an extra 20 Geriatric Evaluation and Medicine (GEM) beds by 2026–27
- Concerns regarding the significant duplication of assessment and review by care coordinators in ED, acute wards and sub-acute wards
- Patient preference for ambulatory services
- Infection and other risks associated with hospital inpatient stays.

RECOMMENDATION 2

**That Austin Health reviews and redesigns models of care for:**

**a) Early identification, clinical management, care planning and, where appropriate, ongoing care coordination for patients with multiple or complex chronic conditions**

**b) An integrated Geriatric, General Medicine and acute rehabilitation service on the Austin Hospital and HRH campuses, with sufficient bed capacity to accommodate the projected growth in demand (an additional 20 beds by 2026–27)**

**c) One integrated care coordination service model and system**

**d) Expansion of ambulatory services and further development of rapid access and community support models as alternatives to inpatient care.**

## ACCOMMODATING SURGERY IN FUTURE

By 2026–27, Austin Health is forecast to require 20.3 operating theatres and 5 endoscopy rooms to meet in-hours demand.

There is an urgent need for redevelopment of Austin Hospital surgical suite due to compromised infrastructure and design. Only ten of the 12 theatres are able to be adequately used. The majority of the operating theatres are 34 years old: the theatre complex was not included in the Austin Hospital redevelopment which opened in 2005. The angiography suite in Medical Imaging no longer has capacity to accommodate endovascular surgery despite a growing demand for hybrid theatres.

In addition, overnight surgical bed capacity currently constrains growth in surgical activity at both the Austin Hospital and the HRH surgery centre sites. The mismatch between theatre capacity and overnight beds is particular concern at the HRH centre and is limiting the full development of this model of care.

New service and workforce models may be required at HRH to ensure appropriate care for higher acuity patients and procedures.

RECOMMENDATION 3

**That Austin Health pursues:**

**a) As a matter of priority, the redevelopment of operating theatres at Austin Hospital to provide twelve contemporary theatres (including 1–2 hybrid theatres) – as described in the Austin Health strategic master plan**

**b) An additional overnight-bed surgical ward at HRH, with appropriate service and workforce models, to accommodate higher acuity surgical patients and procedures and the net transfer of activity from the Austin to the HRH site.**

## RECONFIGURING MENTAL HEALTH

The misaligned Mental Health (MH) catchment boundaries for different age groups compromise *whole of life* care and integration of mental health and physical health care. Austin Health is not funded to provide a service for those aged 65 years and over. Consequently, Austin Health has a significant unfunded workload for *out of catchment* MH patients.

Austin Health is currently transitioning from a *child and adolescent* (0–18) to a *child and youth* (0–25) MH service model.

Austin Health's state-wide MH Child Inpatient Unit (CIU) has a declining occupancy (now 30%). Monash Health will open a MH CIU in 2017.

RECOMMENDATION 4

**That Austin Health works with DHHS to:**

**a) Pursue an Austin Health 'whole of life' Mental Health (MH) service, and funding models to support this – this should include further consideration of catchment boundaries to provide appropriate scale of services**

**b) Move to a new Child and Youth MH service model, and collocate services with other services in the community**

**c) Determine the new model of care for our state-wide Child Inpatient Unit (CIU) for when the Monash CIU opens**

**d) Replace the adolescent (12–18 years) inpatient unit with a youth (12–25 years) inpatient unit to accommodate projected growth.**

## SPECIALIST CLINICS

Specialist clinics are currently located:
- At two locations at HRH: the Centaur building and Tobruk building
- In the Lance Townsend Building at Austin Hospital
- In the ONJ Centre.

The Austin Health Strategic Master Plan (2011) proposed vacating the Tobruk building, and relocating Specialist Clinics to a purpose built space. Specialist clinics are the only remaining services within the Tobruk building. The poor building infrastructure, poor design and space limitations compromise the service quality and efficiency and the patient experience.

Austin Health will pursue one outpatient precinct at HRH that brings together all specialist clinics (where feasible) and provides good proximity to imaging and pharmacy services. This will support:
- Ease of access for patients needing to access multiple outpatient services
- Efficient use of shared spaces and amenities.

RECOMMENDATION 5

**That Austin Health works with DHHS to identify funding options to provide appropriate specialist clinic facilities on the HRH site, and vacate the Tobruk building.**

## SUSTAINABLE SERVICE DISTRIBUTION

Relocation of services from RTRC site to the HRH site has been a long-standing plan of Austin Health. Two campuses instead of three will support safer and more efficient care, and health service sustainability. For example, it is not cost effective to provide onsite after-hours medical cover at the RTC site. This significantly limits the patient case mix that can be cared for on this site.

Inpatient rehabilitation space at HRH is insufficient to meet current demand, and limits the range of therapies that can be provided. Redevelopment of inpatient rehabilitation facilities at HRH will be a critical first step in relocating other rehabilitation inpatient services from RTRC to HRH.

RECOMMENDATION 6

**That Austin Health:**
**a) Explores with DHHS, funding options for the redevelopment of inpatient rehabilitation facilities at HRH**
**b) Pursues the relocation of services on the HRH site and the vacation of services from the RTRC site.**

## HARNESSING ADVANCES IN INFORMATION AND COMMUNICATION TECHNOLOGY

Austin Health will continue to lead the health system in the development of a fully integrated medical record.

Hospital substitution and home and community based care are key areas of pursuit at Austin Health. Austin Health will advance the use of telemedicine, mobile devices, and remote monitoring technologies that support care management outside of hospital.

Development of telemedicine and teleconferencing infrastructure at all Austin Health campuses will be important to support:

- Inter-campus consultation services (clinician to clinician and clinician to patient)
- Remote support of outreach clinics for our state-wide services
- Specialist consultation services to general practice and community health services
- Consultation services to residential aged care facilities
- Inter-campus meetings that obviate the need to travel between campuses.

RECOMMENDATION 7

**That Austin Health progresses the development of telemedicine capability at each of Austin Health's campuses, through the:**

**a) Roll out of telemedicine hardware to all specialist clinic locations**
**b) Adoption of an appropriate software solution**
**c) Development of workflows that support data collection including consent and billing for use of telemedicine in specialist clinics.**

## FUTURE WORKFORCE

Health Workforce Australia indicated the need for workforce reform that focuses on expanding scope of practice, use of assistants, prescribing rights, and promotion of generalism to accommodate future clinical workforce shortages. Austin Health has led some major workforce reforms, and will continue to be a workforce reform leader.

Growing prevalence of patients with multiple or complex chronic conditions may require a more generalist workforce. The high number of vocational medical trainees limits our capacity to respond to this patient group. Furthermore, Australian health system vocational training numbers in some specialties do not correlate well with projected need.

RECOMMENDATION 8

**That Austin Health continue to progress its workforce reform agenda, with a focus on:**

**a) Developing advanced practice and assistant roles**
**b) Medical workforce reform that supports service model reform in relation to patients with multiple or complex chronic conditions**
**c) A review of the balance between vocational medical trainee and service needs.**

## PARTNERING WITH PRIMARY CARE

Austin Health has an important role in supporting primary care to keep people well and out of hospital. Failures in primary care can lead to avoidable ED presentations and hospitalisations.

Our primary care partners are keen to partner with Austin Health to improve the management of people with chronic and complex conditions and chronic mental illness. A significant new opportunity has arisen with the development of the two primary health networks, with which Austin has developed strong relationships.

RECOMMENDATION 9

**That Austin Health works with its primary care partners to develop and pursue a joint strategy to keep people well and out of hospital – especially those with chronic and complex conditions or chronic mental illness.**

## PARTNERING WITH OTHER ACUTE HEALTH SERVICES

Austin Health and other acute health services have identified partnership opportunities to:

- Optimise patient care
- Support care closer to home
- Share clinical, research and staff training expertise
- Achieve critical mass for quality care
- Save costs associated with the delivery of back of house services.

RECOMMENDATION 10

**That Austin Health pursues partnerships with other acute health services for appropriate regional service mix and formalised default referral pathways.**

## PARTNERING WITH CONSUMERS

Austin Health will continue its focus on strengthening partnerships with patients, carers and families in the care relationship.

# Glossary

| | |
|---|---|
| **A** | |
| ABI | Acquired Brain Injury |
| ABS | Australian Bureau of Statistics |
| ACE | Acute Care of the Elderly |
| ACSC | Ambulatory Care Sensitive Condition |
| ALOS | Average Length of Stay |
| APU | Acute Psychiatric Unit |
| **B** | |
| BAROC | Ballarat Austin Radiation Oncology Centre |
| BETRS | Body Image and Eating Disorders Treatment and Recovery Service |
| **C** | |
| CAMHS | Child and Adolescent Mental Health Services |
| CCU | Coronary Care Unit |
| CHSP | Commonwealth Home Support program |
| CIU | Child Inpatient Unit |
| COAG | Council of Australian Governments |
| CRP | Community Recovery Program |
| CSSD | Central Sterilising Services Department |
| CSU | Clinical Service Unit |
| CT | Computed Tomography |
| CYMHS | Child and Youth Mental Health Services |
| **D** | |
| DHHS | Department of Health and Human Services |
| **E** | |
| ECMO | Extracorporeal Membrane Oxygenation |
| ED | Emergency Department |
| EMPHN | Eastern Melbourne Primary Health Network |
| ENB | Electromagnetic Navigation Bronchoscopy |
| **F** | |
| FIM | Functional Independence Measure |
| **G** | |
| GEM | Geriatric Evaluation and Management |
| GP | General Practitioner |
| **H** | |
| HDU | High Dependency Unit |
| HRH | Heidelberg Repatriation Hospital |
| **I** | |
| ICU | Intensive Care Unit |
| IPM | Inpatient Projection Model |
| **L** | |
| LGA | Local Government Area |
| LOS | Length of Stay |
| **M** | |
| MCRG | Major Clinical Related Group |
| MET | Medical Emergency Team |
| MGHA | Melbourne Genomics Health Alliance |
| MH | Mental Health |
| MHAPS | Mental Health and Police Service |
| MRI | Magnetic Resonance Imaging |
| **N** | |
| NBN | National Broadband Network |
| NEPCP | North Eastern Primary Care Partnership |
| NICE | National institute for Health and Care Excellence |
| NSW | New South Wales |
| NWMPHN | North Western Melbourne Primary Health Network |
| **O** | |
| ONJ Centre | Olivia Newton-John Cancer Wellness and Research Centre |
| **P** | |
| PAPU | Psychiatric Assessment and Planning Unit |
| PARC | Prevention and Recovery Care |
| PET | Positron Emission Tomography |
| PHCRIS | Primary Health Care Research and Information Service |
| PTRS | Psychological trauma Recovery Service |
| **R** | |
| RACF | Residential Aged Care Facility |
| RDNS | Royal District Nursing Service |
| RTRC | Royal Talbot Rehabilitation Centre |
| **S** | |
| SECU | Secure Extended Care Unit |
| SLA | Statistical Local Area |
| SSOU | Short Stay Observation Unit |
| **T** | |
| TSC | The Surgery Centre |
| **V** | |
| VAED | Victorian Admitted Episode Dataset |
| VCCC | Victorian Comprehensive Cancer Centre |
| VEMD | Victorian Emergency Minimum Dataset |

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# About Austin 2025

**Austin 2025 Clinical Services Plan (Austin 2025) has been developed to provide direction and priorities for Austin Health's clinical services for the next ten years. The Plan recommends the future service profile and configuration, clinical service enablers, partnerships and infrastructure required to best meet the needs of Austin Health's local and extended catchment over the next ten years.**

Austin 2025 consolidates and builds upon previous planning undertaken at Austin Health. Since the development of the Strategic Services Plan (2009), there have been significant changes to the health policy and funding environment nationally and in Victoria – including a move to activity-based funding for most services (including some state-wide services). The growth in emergency department and inpatient activity has far exceeded the activity forecast in that plan. While considerable progress has been made against the recommendations of that plan, there is still some critical work that remains to be done. These significant challenges require a review of our service profile and service models, and a rethink of our strategic directions.

Over the past seven years Austin Health has developed a range of service stream plans to progress the recommendations of the Strategic Services Plan (2009) and respond to the changing policy and funding environment:

- Mental Health services (2010 and subsequent updates)
- Renal Dialysis satellite service plan (2011)
- Endoscopy Services plan (2011)
- Victorian Spinal Cord services plan (2012)
- Radiology services plan (2012)
- Respiratory services plan (2013)
- Continuing Care services (including Ambulatory and Continuing Care plan 2012 and sub-acute services plan 2014)
- Acquired Brain Injury Unit plan (2014)
- Cancer services plan (2015)
- Emergency Department plan (2015).

An Austin Health Strategic Master Plan was developed in 2011.

A review of progress against the recommendations of our previous clinical services plan (Strategic Services Plan, 2009) is provided in *Appendix 1*.

The development of Austin 2025 was governed by a Steering Committee, with membership from Austin Health and the Department of Health and Human Services (DHHS). It was informed by extensive consultation with patients, our senior clinical staff and service managers, our primary care partners, and our neighbouring health services.

# About Austin Health

**Austin Health is a major tertiary health service located in the North East of Melbourne. We provide an extensive range of acute, sub-acute and mental health services and a comprehensive range of specialist outpatient services and outreach services. In addition to being a major provider of specialist health services to Victoria, Austin Health has a strong commitment to providing community hospital services to its local community. Austin Health also prides itself on providing high quality patient care to a diverse multicultural population and a significant Veteran community.**

Austin Health is home to a number of state-wide services, including the:

- Victorian Spinal Cord Service
- Victorian Respiratory Support Service
- Victorian Liver Transplant Service
- Acquired Brain Injury Unit
- Child Mental Health Inpatient Unit
- Victorian Poisons Information Centre.

Austin Health is also renowned for its specialist work in cancer, neurology, endocrinology, mental health, infectious diseases, rehabilitation, sleep medicine, intensive care, emergency medicine and a range of other specialties.

Austin Health is one of Victoria's largest healthcare providers, employing over 8,000 people over several locations, including the Austin Hospital, Heidelberg Repatriation Hospital (HRH), the Royal Talbot Rehabilitation Centre (RTRC) and the Ballarat Austin Radiation Oncology Centre (BAROC). In addition to these locations, Austin Health provides specialist clinics such as clinical genetics and spinal in a number of rural and regional centres. A range of Austin Health outreach services provide care in the home as an alternative to inpatient care.

Austin Health is an active partner in the Melbourne Genomics Health Alliance (MGHA)[2] and Victorian Comprehensive Cancer Centre (VCCC).[3] These affiliations and linkages are amplified and operationalised through Austin Health's membership in Biomedical Research Victoria.

As an internationally recognised centre of excellence in hospital based research, Austin Health's LifeScience collaborative brings together a multidisciplinary alliance consisting of world class scientific leaders and institutes conducting research in a range of clinical fields.

Our affiliated research centres include:

- Florey Institute for Neuroscience and Mental Health
- Melbourne Brain Centre
- University of Melbourne Departments of Medicine, Surgery, Psychiatry and Physiotherapy
- Olivia Newton-John Cancer Wellness and Research Centre
- Institute for Breathing and Sleep
- Spinal Research Institute
- Parent-Infant Research Institute
- Latrobe University Academic Centre.

Strong affiliations with some of Australia's leading universities and educational providers also support Austin Health in its commitment to providing an environment of teaching, training and education. Austin Health is currently the largest Victorian provider of training for specialist physicians and surgeons.

The Austin School is a Victorian Department of Education service that is located on the Austin Hospital campus and provides a service to child and adolescent inpatients.

[2] The MGHA is an integrated genomic medicine network which links our clinical, research and teaching strengths with those of other centres in Melbourne.

[3] The VCCC is an integrated network of cancer services which links the clinical, research and teaching strengths of cancer centres in Melbourne.

## AUSTIN HEALTH CAMPUSES

Austin Health comprises 3 campuses- the Austin Hospital, Heidelberg Repatriation Hospital (HRH) and Royal Talbot Rehabilitation Centre (RTRC).

The Austin Hospital, originally established in 1882, underwent a major redevelopment which was completed in 2005. Many clinical services are now housed in the Austin tower.

The Olivia Newton-John Cancer Wellness and Research Centre (ONJ Centre) opened in July 2013, consolidating acute cancer and palliative care wards, ambulatory services including radiation oncology, day oncology, apheresis, and multidisciplinary cancer clinics into the one precinct. These are all provided in an environment that integrates research, teaching and training.

HRH has a proud history of caring for veterans and war widows. Originally built in 1941, the hospital amalgamated with the Austin Hospital in 1995. It provides elective surgery, specialist clinics, other ambulatory services, geriatric evaluation and management, rehabilitation, residential aged care and adult mental health services.

The Surgery Centre (TSC) opened at HRH in 2008. Consisting of 8 operating theatres, 2 endoscopy suites and an inpatient unit, TSC provides a quarantined facility for elective surgery. The Travis Review (Travis, 2015), commissioned in 2014 by the Victorian Minister for Health to provide recommendations about how to increase the capacity of Victorian hospitals, recommended that 6 additional points of care be opened at the Surgery Centre with funding from the bed Rescue Fund to expand elective surgery.

RTRC is a specialist provider of intensive rehabilitation programs, providing a comprehensive and coordinated range of medical, nursing, therapy and support services to people with a wide range of disabilities. Areas of specialty include acquired brain injury rehabilitation, amputee rehabilitation, neurological rehabilitation, spinal cord injury rehabilitation, orthopaedic rehabilitation and orthotic and prosthetic services. Services are provided on an inpatient and day patient basis, but case mix is limited by the lack of available on-site medical cover after hours.

**Table 2: Directorates with clinical units/services**

| DIRECTORATE | CLINICAL SERVICE UNIT (CSU) | CLINICAL UNIT/SERVICE | |
|---|---|---|---|
| Acute Operations | Medical and Emergency CSU | • Emergency Medicine<br>• General Medicine<br>• Renal Medicine<br>• Rheumatology<br>• Dermatology<br>• Paediatric Medicine<br>• Endocrinology | • Clinical Pharmacology<br>• Infectious Disease<br>• Respiratory and Sleep Medicine<br>• Toxicology/Victorian poisons Information Centre |
| | Surgical Services CSU | • Orthopaedic Surgery<br>• Plastic and Reconstructive Surgery<br>• Oral and Faciomaxillary Surgery<br>• ENT/Head and Neck Surgery<br>• Ophthalmology<br>• Breast Surgery<br>• Gynaecology and Family Planning<br>• Hepatopancreatobiliary and Transplant | • Urology<br>• Victorian Liver Transplant Unit<br>• Upper GI and Endocrine Surgery<br>• Gastroenterology<br>• Colorectal Surgery<br>• Cardiology<br>• Cardiac Surgery<br>• Thoracic Surgery<br>• Vascular Surgery |
| | Anaesthetic, Peri-operative and Intensive Care CSU | • Anaesthesia<br>• Operating Room | • Intensive care |
| | Cancer and Neurosciences CSU | • Medical Oncology<br>• Radiation Oncology (including BAROC)<br>• Clinical Haematology<br>• Palliative Care | • Clinical Genetics<br>• Spinal<br>• Neurology/Stroke/Epilepsy<br>• Neurosurgery |
| Chief Medical Officer | N/A | • Molecular Imaging and Therapy<br>• Pathology | • Pharmacy<br>• Radiology |
| Ambulatory and Nursing Services | Continuing Care CSU | • Geriatric Evaluation and Management<br>• Rehabilitation<br>• Community Programs | • Ambulatory and Allied Health<br>• Health Independence Program |
| | Mental Health CSU | • Child and Adolescent Mental Health Service<br>• North East Area Mental Health Service<br>• Psychological Trauma Recovery Service | • Brain Disorders<br>• General Hospital Mental Health<br>• Specialised Prevention and Recovery Centre – opens 2016 |

Table 3 outlines the physical bed capacity by care type and campus at Austin Health by mid-2016 (some capital works are underway). A summary of Clinical Services by campus is presented in *Table 4*. As well as services provided at its three main sites.

Austin Health provides a number of services on a satellite and outreach basis including:

- BAROC at the Ballarat Regional Integrated Cancer Centre
- Two renal dialysis satellite services (in Epping and Preston)
- Community Mental Health services
- Residential Mental Health Services
- The Victorian Respiratory Service and Victorian Spinal Cord Injury Service outreach services
- Other consulting services for specialist services on an outreach basis.

**Table 3: Physical points of care/beds at Austin Health by mid-2016**

| CARE TYPE | AUSTIN | HRH | RTRC | OTHER | TOTAL |
|---|---|---|---|---|---|
| Renal Dialysis | 15 | 24** | 0 | 28 (satellite) | 67 |
| Short Stay Observation Unit (SSOU)* | 24 | 0 | 0 | 0 | 24 |
| Same day Acute | 92 | 26 | 0 | 0 | 118 |
| Multi-day Acute | 458 | 33 | 0 | 0 | 491 |
| Sub-acute | 28 | 104 | 8 | 0 | 210 |
| Mental Health | 78 | 20 | 13 | 0 | 111 |
| **Total (excludes SSOU beds)** | **671** | **207** | **91** | **28** | **997** |

* The SSOU will have 24 beds in 2017 following the completion of capital works
** Includes five home therapies centre chairs

## Table 4: Austin Health clinical services by site

| CATEGORY | AUSTIN HOSPITAL | HRH | RTRC | OTHER |
|---|---|---|---|---|
| Acute | • Specialist and general surgery<br>• Specialist and general medicine<br>• Renal dialysis<br>• Cancer services<br>• Emergency Department and After Hours General Practitioner (GP) Clinic<br>• Intensive Care unit (ICU)/ High Dependency Unit (HDU)/Coronary Care Unit (CCU)<br>• Paediatrics<br>• Specialist clinics<br>• Ambulatory Care Centre<br>• Medi-Hotel<br>• Main operating theatres and the Surgical and Endoscopy Centre | • The Surgery Centre<br>• Renal Dialysis<br>• Specialist clinics | | • Ballarat Austin Radiation Oncology Centre at Ballarat<br>• North Eastern Kidney Service at Preston<br>• Epping Dialysis Unit at Epping |
| Sub-acute | • Palliative Care<br>• Health Independence Program services | • Aged Care and Rehabilitation Services<br>• Inpatient/outpatient Rehabilitation<br>• Aged Care Assessment Service<br>• Health Independence Program services<br>• Aged Care Community Services | • Inpatient rehabilitation (Mellor)<br>• ABI Unit<br>• Amputee Services<br>• Victorian Amputee Limb Program<br>• Spinal rehabilitation<br>• Continuing Care ambulatory rehabilitation services<br>• Health Independence Program services | |
| Mental Health | • Adult Inpatient Units<br>• Child and Adolescent Mental Health Service (including inpatient and community services)<br>• Crisis Assessment Team/Emergency Psychiatry Service<br>• Consultant Liaison | • Psychological trauma Recovery Service (including Veteran Psychiatry)<br>• Child and Adult Psychology<br>• Community Teams<br>• Community Recovery Program<br>• Transitional Support Service<br>• Secure Extended Care Unit | • Brain Disorders Unit including inpatient Health Unit, Mary Guthrie House and transition house | • Adult Community Outreach Services – Hawdon St Heidelberg<br>• Prevention and Recovery Centre – Law St Heidelberg Heights |
| Diagnostic and Laboratory services | • Inpatient Diagnostic and Laboratory Services<br>• Outpatient Diagnostic and Laboratory Services | • Outpatient Diagnostic and Laboratory Services | • X-ray | |
| Research/ other | • Bio Resource Centre<br>• Olivia Newton-John Cancer Wellness and Research Centre<br>• Institute for Breathing and Sleep<br>• Austin Medical Research Foundation<br>• Spinal Research Institute<br>• The Florey Institute of Neuroscience and Mental Health | • Parent/Infant Research Institute<br>• Northern Centre Against Sexual Assault<br>• Aged Residential Care (Darley House) | | |

# Planning Context

THE FORCES SHAPING HEALTHCARE IN THE FUTURE

Austin Health clinical services operate within a rapidly changing environment. Key forces confronting healthcare now and in future are described below.

**An ageing population**

Demand for health services is increasing as the population grows, lives longer, and experiences more chronic and disabling conditions as a result of population ageing. Life expectancy in Australia is approximately 25 years longer than a century ago. In 2013, people aged 65 and over comprised 14% of the population compared with 9% in 1973 (Australian Institute of Health and Welfare, 2014).

**Changing population health profile**

Lifestyle factors such as obesity are contributing to a higher prevalence of chronic and disabling conditions. Nearly two thirds of adult Australians and a quarter of children (aged 2–17) are now overweight or obese.

Diabetes is becoming more common in Australia as a result of improved diagnosis and lifestyle factors such as obesity and sedentary lifestyle. As the population ages, the prevalence of chronic conditions – such as chronic respiratory and heart disease and dementia – is increasing.

45% of Australians aged 16–85 will experience a common mental health-related condition such as depression, anxiety or a substance use disorder. There is also a high rate of association (comorbidity) between mental and physical health conditions.

**Health inequalities**

Some population groups in Australia experience marked health inequalities compared with the general population. Indigenous Australians are generally less healthy than other Australians and are more likely to die at younger ages. People from the lowest socioeconomic status groups are likely to have poorer health. People with disability experience significantly poorer health than those without disability. Residents in pockets of the Darebin and Whittlesea Local Government Areas (LGAs) experience lower socio-economic status and have a higher proportion of Aboriginal people relative to the Austin Health catchment overall.

**More informed and engaged consumers**

Consumers and their carers have rightful expectations that they will be actively engaged in decisions about their healthcare, supported in self-management, and given access to the right information about their condition and its management.

**Rapid advances in technology**

The ability to diagnose and treat a much broader range of medical conditions will continue as a result of rapid growth and sophistication in health technologies. Information technology, business intelligence and clinical information systems – like the patient-held electronic medical record – are expected to substantially change the way services are accessed and delivered.

Further advances in telemedicine technology and the national broadband network (NBN) will enable timelier healthcare closer to home – without the need for patients or healthcare workers to travel. Funding reform to reimburse telemedicine consultations is anticipated.

**Rising healthcare costs**

Healthcare costs are increasing more rapidly than the economy can sustain. The funding available for health services and new health technologies will be constrained. New funding models are likely at both state and federal levels – including activity-based funding for sub-acute services and some of Austin Health's quaternary services, and changes to Medicare funding.

### Rising healthcare costs

Healthcare costs are increasing more rapidly than the economy can sustain. The funding available for health services and new health technologies will be constrained. New funding models are likely at both state and federal levels – including activity-based funding for sub-acute services and some of Austin Health's quaternary services, and changes to Medicare funding.

### Even more focus on performance

A capped funding environment and national health funding reforms will require a strong focus on providing best value for money, and the best use of our resources. In this context, national and state health reforms will drive shorter wait times for emergency care and elective surgery, introduce new clinical safety and quality improvements, and drive increased consumer engagement and performance transparency requirements.

### A preference for ambulatory models of care

Ambulatory or community-based care is increasingly replacing hospital-based care – with clear health benefits to patients. This trend will continue as health technology advances and the health system responds to the demand for best and least disruptive care closer to home.

### Workforce

Health Workforce 2025 (Health Workforce Australia, March 2012) reported the likely continuation of health workforce shortages out to 2025 for doctors and nurses, with the shortage likely to be much more significant for nurses than doctors. They noted the need for:

- Workforce reform focus on expanding scope of practice, use of assistants, prescribing rights and, service based reforms in areas such as cancer care and promotion of generalism
- Workforce and workplace reform to boost productivity, flexibility and retention.

## THE VICTORIAN POLICY AND PLANNING CONTEXT

### Health 2040: The Victorian Health Reform Summit

At the Victorian Health Reform Summit (September 2015) – hosted by the Minister for Health and Minister for Mental Health – health system leaders and experts agreed ten principles to guide future Victorian health system reform:

1) Person-centred care with equitable access – value and respect patients and their preferences, and address disparities in access and outcomes for individuals
2) Integration – ensure that patients experiences the health system as one integrated system
3) Prevention and early intervention – invest in prevention, and ensure that treatment is provided early
4) Technology and data – reduce the barriers to sharing information across providers, and make better use of information to improve services and utilise new technologies
5) Workforce – make better use of the skills of our health care workforce
6) Transparency and accountability – provide greater transparency about system performance and accountability of all health service providers
7) Evidence-based care – ensure interventions are evidence-based, reduce low-value and futile care, and commit to ongoing and rapid translation of new evidence into service delivery
8) Sustainable – ensure our health system remains affordable for both taxpayers and patients
9) Innovation – support a new systemic approach to innovation, to ensure that we make best use of the great ideas developed by individuals working across our health system
10) Medical Research – strengthen medical research, and support the translation of new discoveries into treatments, technologies and tools to improve patient care and outcomes.

### Travis Review

The Travis Review (Travis, June 2015) was commissioned by the Victorian Minister for Health. The review recommends ways to increase the capacity of the Victorian public hospital system, which include:

- Reporting of hospital capacity (including wait times to access care)
- Establishing a state-wide service and infrastructure plan
- Systems for expansion of home-based care
- Establishing a bed rescue fund to release unused capacity
- Establishing an innovation program (Better Care Victoria) and funding to identify, encourage and facilitate dissemination of innovation for increasing health system capacity.

DHHS has indicated a commitment to pursue those recommendations.

### Victorian Health Priorities Framework 2012–2022

The Victorian Health Priorities Framework 2012-2022 (Department of Health, 2011b) describes the state-wide outcomes, principles and priorities of the Victorian healthcare system. Seven reform priorities address the key issues for funding, designing and operating Victoria's health system over the coming ten years:

- Responsiveness to people's needs
- Improving every person's health status and experience of health
- Expanding the capacity of the system, in terms of both services and workforce
- Increasing productivity and financial sustainability of the healthcare system
- Improving and innovating
- Greater accountability and transparency
- Using e-health and communications technology.

### Victorian Public Health and Wellbeing Plan 2015–19

This plan (Victoria State Government, September 2015) has a focus on reducing avoidable burden of disease and injury, and reducing inequalities in health and wellbeing. It promotes partnerships between community health partner organisations for disease prevention, health promotion and health protection strategies focused on six priority areas:

- Healthier eating and active living
- Tobacco free living
- Reducing harmful alcohol and drug use
- Improving mental health
- Preventing violence and injury
- Improving sexual and reproductive health.

### Plan Melbourne

Plan Melbourne (Victorian Government, 2014) is a plan for Melbourne that integrates planning and development in relation to land use, transport, and social and community infrastructure. It is a long-term plan (to 2050) to accommodate Melbourne's future growth in population and employment. The plan is currently being refreshed.

The 2014 plan articulates an enhanced transport network that will link an expanded central city, national employment clusters and state-significant industrial precincts. Six national employment clusters have been identified in the plan, including the 'emerging' La Trobe employment cluster. Austin Health is a key partner in the La Trobe employment cluster, with Banyule City Council, Darebin City Council and La Trobe University. The plan notes proposed service and infrastructure development opportunities within the La Trobe employment cluster: particularly in the La Trobe University precinct, Northland precinct and West Heidelberg.

# Our Catchment Population

## PRIMARY AND SECONDARY CATCHMENT

Austin Health's primary catchment[4] includes all of the Banyule, Darebin and Nillumbik LGAs, as well as the Whittlesea South-East Statistical Local Area (SLA) (*Table 5*). Our primary and secondary catchment[5] combined includes the entire LGAs of Banyule, Darebin, Nillumbik, Whittlesea and Manningham, and four additional SLAs.

73% of admissions in 2013–14 were residents of our primary or secondary catchment.

Our primary and secondary catchment areas extend from densely populated inner urban and residential settings to sparsely populated rural areas and national parks.

The catchment for our state-wide services includes almost 6 million residents of Victoria, residents from southern New South Wales, and in some cases, residents of Tasmania.

Austin Health's mental health services have defined catchments areas determined by DHHS. They differ from our primary and secondary catchments and are different for different age groups.

**Table 5: Austin Health primary and secondary catchment – Austin 2025 Clinical Service Plan**

| SLA | AH ADMISSIONS | VIC ADMISSIONS | AH MARKET SHARE |
|---|---|---|---|
| **Primary catchment** | | | |
| Banyule (C) – Heidelberg | 8817 | 13780 | 63.98% |
| Banyule (C) – North | 5879 | 9347 | 62.90% |
| Darebin (C) – Northcote | 3075 | 10009 | 30.72% |
| Darebin (C) – Preston | 9140 | 21608 | 42.30% |
| Nillumbik (S) – South | 1887 | 3466 | 54.44% |
| Nillumbik (S) – South-West | 1988 | 3376 | 58.89% |
| Nillumbik (S) – Bal | 803 | 1339 | 59.97% |
| Whittlesea (C) – South-East | 4370 | 11243 | 38.87% |
| **Secondary catchment** | | | |
| Whittlesea (C) – South-West | 3404 | 19537 | 17.42% |
| Whittlesea (C) – North | 3125 | 12899 | 24.23% |
| Manningham (C) – West | 4920 | 16565 | 29.70% |
| Manningham (C) – East | 235 | 1651 | 14.23% |
| Boroondara (C) – Camberwell N. | 635 | 4140 | 15.34% |
| Murrindindi (S) – West | 347 | 1815 | 19.12% |
| Yarra Ranges (S) – North | 134 | 3247 | 4.13% |
| Gr. Bendigo (C) – Eaglehawk | 102 | 3747 | 2.72% |
| **Other** | | | |
| Other | 17959 | 1084487 | 1.7% |

Source: VAED 2013-14, excluding dialysis (L61Z) and interstate SLAs

[4] The primary catchment area for Austin Health is defined as the SLAs where Austin Health has the highest percentage of public hospital admissions for those SLAs.

[5] Austin Health's secondary catchment is the SLAs where Austin Health has the second highest percentage of public hospital admissions for those SLAs.

## CATCHMENT PROFILE

Our catchment population is characterised by:

- Areas of high socio-economic disadvantage, particularly in the Darebin and Whittlesea LGAs. These LGAs have high unemployment rates and low numbers of residents with private health insurance. Male life expectancy is lower than the Victorian average in these LGAs
- Significant variation between LGAs in the reported heath status of residents, with a high proportion of residents in Darebin and Whittlesea reporting fair or poor levels of health
- A higher than average proportion of Aboriginal and Torres Strait Islander people in the Darebin LGA
- A higher than average proportion of people aged 0–14 years in Whittlesea and Nillumbik
- A higher than average proportion of people aged 85+ years in the LGAs of Banyule, Darebin, Boroondara and Manningham
- High levels of cultural diversity in many LGAs.

## FORECAST POPULATION GROWTH 2013–14 TO 2023–24

The population of Austin Health's primary catchment population is expected to grow to over 415,000 by 2023–24: a 10% growth in the ten years to 2023–24. This is almost half the rate of growth for Victoria as a whole (*Table 6*). Within our primary catchment, 48% of the growth is forecast to be in the population aged 60–79 years, and a further 29% in the population aged 30–39 years (*Table 7*).

In 2023–24, the proportion of Austin Health's primary catchment population aged:

- 0–19 years will be 23% of total
- 70+ will be 13% of total (*Table 7*).

Austin Health's combined primary and secondary catchment population is projected to exceed 840,000 by 2023–24: the result of a 19% growth in the ten years to 2023–24 (*Table 6*). Over 85% of the growth in this broader catchment will be in the Whittlesea LGA.

In 2023–24, the proportion of Austin Health's combined primary and secondary catchment population aged:

- 0–19 years will be 28% of total
- 70+ will be 25% of total (*Table 7*).

**Table 6: Forecast population growth within Austin Health's primary and secondary catchment areas 2013–14 to 2023–24**

| SLA | 2013–14 | 2018–19 | 2023–24 | CHANGE 2013–14 TO 2018–19 | % CHANGE 2013–14 TO 2018–19 | CHANGE 2013–14 TO 2023–24 | % CHANGE 2013–14 TO 2023–24 |
|---|---|---|---|---|---|---|---|
| **Primary** | | | | | | | |
| Banyule (C) – Heidelberg | 68,068 | 71,142 | 74,224 | 3,073 | 4.5% | 6,156 | 9.0% |
| Banyule (C) – North | 56,412 | 57,697 | 59,843 | 1,286 | 2.3% | 3,431 | 6.1% |
| Darebin (C) – Northcote | 52,542 | 56,518 | 58,979 | 3,976 | 7.6% | 6,437 | 12.3% |
| Darebin (C) – Preston | 94,250 | 101,195 | 109,755 | 6,945 | 7.4% | 15,505 | 16.5% |
| Nillumbik (S) – South | 27,960 | 27,847 | 28,033 | -113 | -0.4% | 73 | 0.3% |
| Nillumbik (S) – South-West | 25,404 | 26,273 | 27,503 | 869 | 3.4% | 2,099 | 8.3% |
| Nillumbik (S) – Bal | 9,366 | 9,413 | 9,569 | 47 | 0.5% | 204 | 2.2% |
| Whittlesea (C) – South-East | 43,738 | 45,139 | 47,332 | 1,401 | 3.2% | 3,594 | 8.2% |
| **Primary Subtotal** | **377,739** | **395,224** | **415,237** | **17,485** | **4.6%** | **37,497** | **9.9%** |
| | | | | | | | |
| **Secondary** | | | | | | | |
| Whittlesea (C) – South-West | 66,167 | 78,697 | 92,990 | 12,530 | 18.9% | 26,823 | 40.5% |
| Whittlesea (C) – North | 69,354 | 99,603 | 121,210 | 30,249 | 43.6% | 51,856 | 74.8% |
| Boroondara (C) – Camberwell N. | 46,416 | 47,349 | 48,461 | 933 | 2.0% | 2,046 | 4.4% |
| Manningham (C) – East | 15,669 | 15,779 | 16,148 | 110 | 0.7% | 479 | 3.1% |
| Manningham (C) – West | 101,858 | 105,858 | 112,144 | 4,001 | 3.9% | 10,287 | 10.1% |
| Yarra Ranges (S) – North | 13,601 | 13,716 | 14,047 | 115 | 0.8% | 446 | 3.3% |
| Murrindindi (S) – West | 7,266 | 7,607 | 8,030 | 341 | 4.7% | 764 | 10.5% |
| Gr. Bendigo (C) – Eaglehawk | 9,627 | 10,791 | 12,130 | 1,164 | 12.1% | 2,503 | 26.0% |
| **Secondary Subtotal** | **329,958** | **379,400** | **425,161** | **49,442** | **15.0%** | **95,203** | **28.9%** |
| | | | | | | | |
| **Primary & Secondary Subtotal** | **707,697** | **774,624** | **840,398** | **66,927** | **9.46%** | **132,700** | **18.75%** |
| **Subtotal Other Metro** | **3,591,999** | **3,971,304** | **4,341,227** | **379,304** | **10.6%** | **749,228** | **20.9%** |
| **Subtotal Other Victoria** | **1,439,644** | **1,531,535** | **1,647,732** | **91,892** | **6.4%** | **208,088** | **14.5%** |
| **Total** | **5,739,340** | **6,277,463** | **6,829,357** | **538,123** | **9.4%** | **1,090,017** | **19.0%** |

Source: Victoria in Future 2014 (VIF2014) – Confidential dataset, SA2 mapped to SLA 2011 using ABS statistics

**Table 7: Forecast population growth by age group and catchment area 2013–14 to 2023–24**

| | PRIMARY CATCHMENT | | | | | PRIMARY AND SECONDARY CATCHMENT | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| AGE GROUP | 2013–14 | % OF POP 2013–14 | 2023–24 | % OF POP 2023–24 | % CHANGE 2013–14 TO 2023–24 | 2013–14 | % OF POP 2013–14 | 2023–24 | % OF POP 2023–24 | % CHANGE 2013–14 TO 2023–24 |
| 0–4 | 22,971 | 6.1% | 25,301 | 6.1% | 10.1% | 44,502 | 6.3% | 55,063 | 6.6% | 23.73% |
| 5–9 | 21,795 | 5.8% | 23,632 | 5.7% | 8.4% | 42,675 | 6.0% | 53,467 | 6.4% | 25.29% |
| 10–14 | 20,139 | 5.3% | 22,048 | 5.3% | 9.5% | 40,413 | 5.7% | 49,749 | 5.9% | 23.10% |
| 15–19 | 21,923 | 5.8% | 22,641 | 5.5% | 3.3% | 43,082 | 6.1% | 49,595 | 5.9% | 15.12% |
| 20–24 | 28,635 | 7.6% | 25,598 | 6.2% | -10.6% | 51,065 | 7.2% | 51,260 | 6.1% | 0.38% |
| 25–29 | 30,001 | 7.9% | 28,139 | 6.8% | -6.2% | 52,568 | 7.4% | 54,234 | 6.5% | 3.17% |
| 30–34 | 28,890 | 7.6% | 33,115 | 8.0% | 14.6% | 50,970 | 7.2% | 62,133 | 7.4% | 21.90% |
| 35–39 | 27,201 | 7.2% | 33,810 | 8.1% | 24.3% | 48,644 | 6.9% | 64,403 | 7.7% | 32.40% |
| 40–44 | 29,035 | 7.7% | 29,523 | 7.1% | 1.7% | 52,935 | 7.5% | 58,199 | 6.9% | 9.94% |
| 45–49 | 25,833 | 6.8% | 25,379 | 6.1% | -1.8% | 48,216 | 6.8% | 50,906 | 6.1% | 5.58% |
| 50–54 | 25,767 | 6.8% | 26,691 | 6.4% | 3.6% | 47,767 | 6.7% | 52,895 | 6.3% | 10.74% |
| 55–59 | 22,605 | 6.0% | 23,932 | 5.8% | 5.9% | 42,143 | 6.0% | 47,210 | 5.6% | 12.02% |
| 60–64 | 19,271 | 5.1% | 23,356 | 5.6% | 21.2% | 36,900 | 5.2% | 45,592 | 5.4% | 23.56% |
| 65–69 | 16,516 | 4.4% | 20,490 | 4.9% | 24.1% | 32,592 | 4.6% | 39,601 | 4.7% | 21.51% |
| 70–74 | 12,155 | 3.2% | 17,257 | 4.2% | 42.0% | 24,656 | 3.5% | 34,157 | 4.1% | 38.53% |
| 75–79 | 9,703 | 2.6% | 14,558 | 3.5% | 50.0% | 19,445 | 2.7% | 29,753 | 3.5% | 53.01% |
| 80–84 | 7,676 | 2.0% | 9,860 | 2.4% | 28.5% | 14,724 | 2.1% | 20,902 | 2.5% | 41.96% |
| 85+ | 7,624 | 2.0% | 9,908 | 2.4% | 30.0% | 14,401 | 2.0% | 21,279 | 2.5% | 47.76% |
| **Total** | **377,739** | | **415,237** | | **9.9%** | **707,697** | | **840,398** | | **18.75%** |

Source: Victoria in Future 2014 (VIF2014) – Confidential dataset, SA2 mapped to SLA 2011 using ABS statistics

**Table 7: Continued**

| | VIC TOTAL | | | | |
|---|---|---|---|---|---|
| AGE GROUP | 2013–14 | % OF POP 2013–14 | 2023–24 | % OF POP 2023–24 | % CHANGE 2013–14 TO 2023–24 |
| 0–4 | 368,931 | 6.4% | 446,227 | 6.5% | 21.0% |
| 5–9 | 349,643 | 6.1% | 429,844 | 6.3% | 22.9% |
| 10–14 | 332,628 | 5.8% | 406,533 | 6.0% | 22.2% |
| 15–19 | 355,781 | 6.2% | 401,024 | 5.9% | 12.7% |
| 20–24 | 415,614 | 7.2% | 421,722 | 6.2% | 1.5% |
| 25–29 | 443,057 | 7.7% | 474,604 | 6.9% | 7.1% |
| 30–34 | 424,421 | 7.4% | 525,409 | 7.7% | 23.8% |
| 35–39 | 392,650 | 6.8% | 518,623 | 7.6% | 32.1% |
| 40–44 | 417,169 | 7.3% | 462,796 | 6.8% | 10.9% |
| 45–49 | 380,506 | 6.6% | 406,670 | 6.0% | 6.9% |
| 50–54 | 377,864 | 6.6% | 421,865 | 6.2% | 11.6% |
| 55–59 | 340,421 | 5.9% | 381,995 | 5.6% | 12.2% |
| 60–64 | 301,680 | 5.3% | 374,027 | 5.5% | 24.0% |
| 65–69 | 264,280 | 4.6% | 330,534 | 4.8% | 25.1% |
| 70–74 | 194,042 | 3.4% | 283,309 | 4.1% | 46.0% |
| 75–79 | 150,544 | 2.6% | 237,350 | 3.5% | 57.7% |
| 80–84 | 115,653 | 2.0% | 156,443 | 2.3% | 35.3% |
| 85+ | 114,455 | 2.0% | 150,383 | 2.2% | 31.4% |
| **Total** | **5,739,340** | | **6,829,357** | | **19.0%** |

# Current Activity

## INPATIENT SEPARATIONS

In 2013–14, there were 95,136 inpatient separations at Austin Health (*Table 8*). 76.7% of separations were at the Austin Hospital, and only 0.7% at RTRC.

55.1% of separations were from our primary catchment and 21.45% from our secondary catchment in 2013–14 (*Table 9*).

**Table 8: Separations by campus 2013–14 including dialysis, excluding ED only**

| CAMPUS | 2013–14 | % OF TOTAL |
|---|---|---|
| Austin Hospital | 72,972 | 76.7% |
| HRH | 21,530 | 22.6% |
| RTRC | 634 | 0.7% |
| **Total** | **95,136** | **100.0%** |

Source: Department of Health Inpatient Projection Model 2014

**Table 9: Austin Health separations by catchment 2013–14 including dialysis, excluding ED only**

| CATCHMENT | 2013–14 | % OF TOTAL |
|---|---|---|
| Primary | 52,431 | 55.1% |
| Secondary | 20,380 | 21.4% |
| Other Metro | 17,101 | 18.0% |
| Other Victoria | 4,421 | 4.6% |
| Interstate/Other | 803 | 0.8% |
| **Total** | **95,136** | **100.0%** |

Source: IPM

## EMERGENCY DEPARTMENT PRESENTATIONS

In 2013–14 there were 75,366 emergency department presentations to Austin Health (*Table 10*). Presentations from the Banyule and Darebin LGAs accounted for 51.3% of presentations in 2013–14, and the top 8 LGAs accounted for 91.5% of presentations in that year.

In 2013–14, 35% of ED presentations to Austin Health were admitted, either to a ward (23% of presentations) or to SSOU (12% of presentations) (*Table 11*).

**Table 10: ED presentations by top 8 LGAs 2009–10 to 2013–14**

| LGA NAME | 2013–14 | % OF TOTAL |
|---|---|---|
| Banyule (C) | 22,387 | 29.7% |
| Darebin (C) | 16,277 | 21.6% |
| Whittlesea (C) | 11,456 | 15.2% |
| Manningham (C) | 6,619 | 8.8% |
| Nillumbik (S) | 6,546 | 8.7% |
| Moreland (C) | 2,237 | 3.0% |
| Boroondara (C) | 1,814 | 2.4% |
| Hume (C) | 1,644 | 2.2% |
| Other | 6,386 | 8.5% |
| **Total** | **75,366** | **100.0%** |

**Table 11: 2013–14 ED activity**

| ATTENDANCES | AMBULANCE ARRIVALS | ADMITTED TO WARD | % ADMITTED TO WARD | ADMITTED TO SSOU | % ADMITTED TO SSOU | TOTAL ADMITTED | % ADMITTED |
|---|---|---|---|---|---|---|---|
| 75,356 | 21,699 | 17,457 | 23.2% | 8,893 | 11.8% | 26,350 | 35.0% |

Source: Performance Reporting System

## INPATIENT ACTIVITY BY MAJOR CLINICAL RELATED GROUPS (MCRG)

In 2013–14, excluding the dialysis MCRG,[6] the Chemotherapy and Radiotherapy MCRG had the highest number of separations (*Table 12*). There has been little change in the ranking of activity in the top 10 Major Clinical Related Groups (MCRGs) at Austin Health for the last 5 years.

The sub-acute and mental health MCRGs ranked highest for numbers of bed days in 2013–14 (*Table 13*). The Orthopaedic, Neurology, Respiratory Medicine, and Non Subspecialty Medicine and Surgery MCRGs each rank in the top 10 in activity for both separations and bed days.

**Table 12: Top 10 MCRGs based on separations excluding dialysis 2013–14**

| MCRG DESCRIPTION | SEPARATIONS |
|---|---|
| Chemotherapy and Radiotherapy | 7,342 |
| Non Subspecialty Medicine | 4,787 |
| Orthopaedics | 4,753 |
| Non Subspecialty Surgery | 4,507 |
| Diagnostic GI Endoscopy | 4,116 |
| Neurology | 3,828 |
| Respiratory Medicine | 3,480 |
| Clinical Cardiology | 3,326 |
| Urology | 3,243 |
| Haematology | 3,029 |
| Other | 25,147 |
| **Total** | **67,558** |

Source: Department of Health Inpatient Projection Model 2014 (IPM 2014)

**Table 12: Top 10 MCRGs based on bed days excluding dialysis 2013–14**

| MCRG DESCRIPTION | SEPARATIONS |
|---|---|
| Rehabilitation Sub Acute | 33,699 |
| Mental Health | 27,538 |
| GEM | 27,175 |
| Orthopaedics | 17,900 |
| Neurology | 16,659 |
| Non Subspecialty Surgery | 14,044 |
| Respiratory Medicine | 14,638 |
| Non Subspecialty Medicine | 10,336 |
| Chemotherapy and Radiotherapy | 9,484 |
| Oncology | 9,281 |
| Other | 112,819 |
| **Total** | **293,573** |

Source: Department of Health Inpatient Projection Model 2014 (IPM 2014)

[6] An MCRG groups up similar Diagnostic Related Groups (DRGs) to represent broad specialty groupings

## AMBULATORY CARE SERVICES

Austin Health has a range of ambulatory care programs which aim to support the provision of care in the home, or other community settings close to home – in accord with patient preference. These ambulatory care services help reduce demand on inpatient services. Current and forecast future demand for these services, and specialist clinics, is discussed in section 6.5.

## AMBULATORY CARE SENSITIVE CONDITIONS

Ambulatory Care Sensitive Conditions (ACSCs) are those for which hospitalisation is thought to be avoidable with the application of preventive care and early disease management, usually delivered in a primary care setting.

In 2013–14 there were 10,868 separations of patients with ACSC at Austin Health (*Table 14)*, an increase of 27% since 2009–10. 53% of ACSC admissions were for diabetes related complications. Other high volume categories were generally for chronic conditions.

**Table 14: 2013–14 ACSC admissions by category and catchment area**

| CATCHMENT AREA | SEPARATIONS | DIABETES COMPLICATIONS | IRON DEFICIENCY ANAEMIA | CONGESTIVE HEART FAILURE | PYELONEPHRITIS | CHRONIC OBSTRUCTIVE PULMONARY DISEASE | CONVULSIONS AND EPILEPSY | OTHER VACCINE PREVENTABLE | CELLULITIS | ASTHMA | EAR, NOSE AND THROAT INFECTIONS | INFLUENZA AND PNEUMONIA | OTHER |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Primary | 6,349 | 3,309 | 558 | 573 | 426 | 480 | 270 | 179 | 291 | 222 | 115 | 112 | 423 |
| Secondary | 1,901 | 1,014 | 179 | 140 | 121 | 93 | 77 | 125 | 61 | 52 | 55 | 23 | 159 |
| Other Metro | 1,996 | 1,110 | 241 | 88 | 101 | 72 | 133 | 178 | 46 | 18 | 36 | 24 | 116 |
| Other Victoria | 511 | 335 | 19 | 14 | 18 | 8 | 47 | 28 | 8 | 1 | 7 | 8 | 39 |
| Interstate/Other | 111 | 39 | 5 | 3 | 11 | 1 | 39 | 4 | 0 | 2 | 1 | 3 | 9 |
| **Total** | **10,868** | **5,807** | **1,002** | **818** | **677** | **654** | **566** | **514** | **406** | **295** | **214** | **170** | **746** |

Source: Department of Health Inpatient Projection Model 2014

## SELF-SUFFICIENCY

DHHS defines self-sufficiency as a measure of a health service's ability to provide a minimum and appropriate level of service, both in amount and type, required by its local community. A benchmark level of 70% public self-sufficiency is proposed by DHHS as the level of self-sufficiency required in an area to meet the minimum appropriate levels of services (Department of Health, 2011a).

In 2013–14 Austin Health achieved self-sufficiency in its primary catchment of:

- Greater than 70% for the dialysis MCRG only
- 60% or greater for 12 MCRGs (*Table 15*).

The low self-sufficiency for:

- Psychiatry and Mental Health MCRGs reflects the constraints afforded by the prescribed catchment boundaries for Mental health services that are poorly aligned with Austin Health primary catchment
- Gynaecology MCRG reflects the very limited services provided by Austin Health and the co-location of Mercy Hospital for Women
- Ophthalmology MCRG reflects the limited role for this service, and the role of the Royal Victorian Eye and Ear Hospital
- ENT and Dermatology MCRGs may need redress, particularly given the role delineation (*see Appendix 2*) of those services.

In 2013–14, private hospital utilisation by Austin Health's primary catchment was highly variable across MCRGs. The highest rate of utilisation of private hospitals by residents of our primary catchment was in the Dentistry, Diagnostic GI Endoscopy and Gynaecology MCRGs. The highest volume of private hospital separations was for the Diagnostic GI endoscopy, Dialysis, orthopaedic and gynaecology MCRGs.

## Table 15: 2013–14 Austin Health self-sufficiency by MCRG – primary catchment

| MCRG DESCRIPTION | AUSTIN HEALTH | OTHER PUBLIC | PRIVATE | TOTAL | % PRIVATE | SELF SUFFICIENT |
|---|---|---|---|---|---|---|
| Dialysis | 16,475 | 6,001 | 5,957 | 28,433 | 21.0% | 73.3% |
| Chemotherapy and Radiotherapy | 3,568 | 2,079 | 4,219 | 9,866 | 42.8% | 63.2% |
| Orthopaedics | 2,863 | 1,946 | 5,713 | 10,522 | 54.3% | 59.5% |
| Non Subspecialty Surgery | 2,622 | 1,893 | 1,786 | 6,301 | 28.3% | 58.1% |
| Non Subspecialty Medicine | 2,587 | 2,044 | 4,541 | 9,172 | 49.5% | 55.9% |
| Diagnostic GI Endoscopy | 2,273 | 1,151 | 10,079 | 13,503 | 74.6% | 66.4% |
| Clinical Cardiology | 2,243 | 1,396 | 758 | 4,397 | 17.2% | 61.6% |
| Respiratory Medicine | 2,084 | 1,427 | 1,756 | 5,267 | 33.3% | 59.4% |
| Neurology | 1,879 | 1,269 | 477 | 3,625 | 13.2% | 59.7% |
| Haematology | 1,536 | 1,546 | 1,130 | 4,212 | 26.8% | 49.8% |
| Urology | 1,474 | 1,007 | 2,319 | 4,800 | 48.3% | 59.4% |
| Immunology and Infections | 1,074 | 774 | 271 | 2,119 | 12.8% | 58.1% |
| Oncology | 1,050 | 481 | 766 | 2,297 | 33.3% | 68.6% |
| GEM | 1,011 | 624 | | 1,635 | 0.0% | 61.8% |
| Plastic and Reconstructive Surgery | 886 | 765 | 2,560 | 4,211 | 60.8% | 53.7% |
| Interventional Cardiology | 804 | 497 | 1,049 | 2,350 | 44.6% | 61.8% |
| Gastroenterology | 804 | 653 | 452 | 1,909 | 23.7% | 55.2% |
| Rehabilitation Sub Acute | 678 | 296 | 1,355 | 2,329 | 58.2% | 69.6% |
| Upper GIT Surgery | 645 | 315 | 614 | 1,574 | 39.0% | 67.2% |
| Mental Health | 564 | 792 | 1,366 | 2,722 | 50.2% | 41.6% |
| Ear, Nose and Throat | 560 | 776 | 1,497 | 2,833 | 52.8% | 41.9% |
| Renal Medicine | 502 | 454 | 311 | 1,267 | 24.5% | 52.5% |
| Ophthalmology | 463 | 1,308 | 2,975 | 4,746 | 62.7% | 26.1% |
| Endocrinology | 437 | 433 | 303 | 1,173 | 25.8% | 50.2% |
| Rheumatology | 426 | 332 | 186 | 944 | 19.7% | 56.2% |
| Colorectal Surgery | 400 | 293 | 736 | 1,429 | 51.5% | 57.7% |
| Vascular Surgery | 370 | 231 | 627 | 1,228 | 51.1% | 61.6% |
| Neurosurgery | 369 | 307 | 645 | 1,321 | 48.8% | 54.6% |
| Drug and Alcohol | 354 | 246 | 108 | 708 | 15.3% | 59.0% |
| Palliative Care | 296 | 176 | 5 | 477 | 1.0% | 62.7% |
| Breast Surgery | 190 | 131 | 516 | 837 | 61.6% | 59.2% |
| Cardiothoracic Surgery | 174 | 106 | 159 | 439 | 36.2% | 62.1% |
| Psychiatry | 171 | 923 | 34 | 1,128 | 3.0% | 15.6% |
| Dermatology | 142 | 245 | 110 | 497 | 22.1% | 36.7% |
| Gynaecology | 129 | 2,433 | 5,009 | 7,571 | 66.2% | 5.0% |
| Head and Neck Surgery | 126 | 99 | 339 | 564 | 60.1% | 56.0% |
| Tracheostomy | 73 | 54 | 5 | 132 | 3.8% | 57.5% |
| Unallocated | 39 | 41 | 103 | 183 | 56.3% | 48.8% |
| Obstetrics | 28 | 4,520 | 1,540 | 6,088 | 25.3% | 0.6% |
| Transplantation | 18 | 16 | | 34 | 0.0% | 52.9% |
| Extensive Burns | 17 | 37 | 3 | 57 | 5.3% | 31.5% |
| Dentistry | 11 | 288 | 2,136 | 2,435 | 87.7% | 3.7% |
| Rehabilitation Acute | 1 | 2 | 1 | 4 | 25.0% | 33.3% |
| **Total** | **52,431** | **44,202** | **64,712** | **161,345** | **40.1%** | |

Source: Department of Health Inpatient Projection Model 2014

## MARKET SHARE

Significant numbers of patients from our primary catchment seek care at health services elsewhere.

In 2013–14:

- The largest proportion (25%) of patient outflows from our primary catchment area was to Northern Health: a reflection of our shared catchment
- A significant proportion of patient outflows from our primary catchment were to St Vincent's Hospital (15%), Melbourne Health (12%) and RCH (8%)
- Health services providing specialist care – in particular obstetrics, gynaecology and neonatal care – also provide a large proportion of care for patients in our primary catchment (*Table 16*).

It is important to note that Mental Health Services catchment areas are determined by DHHS. Austin Health provides:

- Child and adolescent MH services to those aged 0–18 living in the LGAs of Banyule, Darebin, Nillumbik, Whittlesea, Yarra and Boroondara
- Adult MH services for those aged 18–64 living in Banyule and Nillumbik LGAs only
- No funded MH services for those aged 65 and older – with those services provided by Northern Health, however Austin Health has a significant unfunded workload for this group.

Many patients from outside Austin Health's primary catchment seek inpatient care at Austin Health (*Table 17*). Inflows into Austin Health from outside our primary catchment exceed outflows from Austin Health's primary catchment to other health services overall, and specifically for haemodialysis and chemotherapy. Austin Health participates in a number of cancer clinical trials, offering chemotherapy regimens that are not available elsewhere. For this reason we would expect a broader catchment for the Chemotherapy CRG.

**Table 16: 2013–14 episodes of inpatient care provided by other health services for patients from the Austin Health primary catchment by Clinical Related Group (CRG)[7] and Health Service**

| CRG | NORTHERN HEALTH | ST VINCENT'S HEALTH | MELBOURNE HEALTH | RCH | ALFRED HEALTH | PMC | EASTERN HEALTH | OTHER | TOTAL |
|---|---|---|---|---|---|---|---|---|---|
| Haemodialysis | 2,033 | 1,742 | 1,819 | | 93 | | 215 | 91 | **5,993** |
| Acute, Adult Mental Health Service | 503 | 60 | 15 | | 11 | | 11 | 17 | **617** |
| Chemotherapy | 488 | 348 | 167 | 140 | 67 | 547 | 51 | 217 | **2,025** |
| Chest Pain or Acute Coronary Syndrome W/O Invasive Cardiac Diagnostic Procedures | 330 | 161 | 49 | 3 | 33 | | 45 | 35 | **656** |
| Other Clinical Cardiology | 249 | 125 | 39 | 16 | 46 | 1 | 8 | 34 | **518** |
| GEM – Other | 237 | 83 | 48 | | 4 | | 11 | 26 | **409** |
| Colonoscopy | 211 | 139 | 39 | 6 | 19 | 13 | 18 | 14 | **459** |
| Other Orthopaedics – Surgical | 200 | 99 | 102 | 103 | 36 | 4 | 26 | 45 | **615** |
| Other Non-Subspecialty Medicine | 166 | 119 | 78 | 336 | 63 | 19 | 45 | 358 | **1,184** |
| Invasive Procedure W/O AMI | 157 | 44 | 44 | 6 | 20 | | 1 | 4 | **276** |
| Red Blood Cell Disorders | 156 | 115 | 81 | 51 | 16 | 94 | 25 | 302 | **840** |
| Other Orthopaedics – Non-Surgical | 148 | 116 | 53 | 27 | 85 | 4 | 11 | 26 | **470** |
| Digestive System Diagnoses including GI Obstruction | 141 | 114 | 29 | 61 | 55 | 4 | 19 | 40 | **463** |
| Respiratory Infections/ Inflammations | 141 | 114 | 34 | 72 | 10 | 6 | 19 | 21 | **417** |
| Other Neurology | 136 | 191 | 261 | 91 | 50 | 1 | 63 | 44 | **837** |
| Level 2–3 Rehabilitation | 134 | 85 | 15 | | 21 | | 13 | 12 | **280** |
| Other | 5,364 | 3,122 | 2,295 | 2,443 | 961 | 603 | 657 | 12,698 | **28,143** |

Source: Department of Health Inpatient Projection Model 2014 (IPM 2014)

[7] A Clinical Related Group (CRG) comprises a group of similar DRGs to represent specialty groupings. MCRGs represent groupings of CRGs to form much broader specialty groupings.

## Table 17: Austin Health inflows by CRG and catchment, excludes ED only episodes

| CRG DESCRIPTION | 2013–14 |
|---|---|
| **Secondary** | |
| Haemodialysis | 7,478 |
| Chemotherapy | 1,658 |
| Other Non-Subspecialty Medicine | 432 |
| Other Neurology | 479 |
| Medical Oncology | 365 |
| Other Gastroscopy | 298 |
| Colonoscopy | 285 |
| Chest Pain or Acute Coronary Syndrome W/O Invasive Cardiac Diagnostic Procedures | 296 |
| Respiratory Infections/Inflammations | 259 |
| Red Blood Cell Disorders | 304 |
| Other | 8,526 |
| **Subtotal Secondary catchment** | **20,380** |
| | |
| **Other Metro** | |
| Haemodialysis | 3,258 |
| Chemotherapy | 1,576 |
| Other Non-Subspecialty Medicine | 623 |
| Other Neurology | 546 |
| Other Gastroenterology | 479 |
| Medical Oncology | 470 |
| Invasive Procedure W/O AMI | 327 |
| Rheumatology | 300 |
| Other Urological Procedures | 337 |
| Other Respiratory Medicine | 311 |
| Other | 8,874 |
| **Subtotal Other Metro** | **17,101** |
| | |
| **Subtotal Other Vic** | **4,421** |
| **Total** | **41,902** |

Source: Department of Health Inpatient Projection Model 2014 (IPM 2014)

# Meeting Future Demand – Projected Activity

## PROJECTED EMERGENCY DEPARTMENT ACTIVITY

ED activity forecasting has been performed using the Department of Health Emergency Model 2014 (EM14) data (Department of Health and Human Services, 2015). Detail about the methodology is available in *Appendix 3*.

Emergency Department (ED) presentations at Austin Health are projected to increase by 3.6% per annum to 116,748 presentations for the period 2012–13 to 2026–27. This is an overall increase in activity of 63.5% – an increase surpassed by projected Northern Hospital and Casey Hospital growth only (*Table 18*).

Paediatric presentations (0–14 years) at Austin Health are projected to increase at a higher rate than for adults.

In 2013–14, 39 treatment spaces were used to accommodate up to 63 patients (95$^{th}$ percentile) or up to 56 patients (80$^{th}$ percentile) at the peak activity time of day. Procedure rooms, multidisciplinary treatment rooms, waiting room and other available spaces were used to accommodate the peaks in demand. Assuming a similar ratio between treatment spaces and peak activity as in 2013–14 and no changes to models of care:

- 52 treatment spaces would be required to accommodate growth in activity to 2021–22
- 63 treatment spaces would be required to accommodate growth in activity to 2026–27 (*Table 19*).

With no change to models of care – even with growth in treatment spaces per those projected – there will be significant extra burden on non-treatment areas during periods of peak activity.

### Table 18: ED presentations by health service forecast to 2026–27

| HEALTH SERVICE | 2012-13 | 2016-17 | 2021-22 | 2026-27 | %P.A. | GROWTH | % GROWTH |
|---|---|---|---|---|---|---|---|
| Alfred (Prahran) | 58,825 | 67,260 | 79,399 | 92,165 | 3.3% | 33,340 | 56.7% |
| **Austin Hospital (0–14 years)** | **11,769** | **14,310** | **17,598** | **20,671** | **4.1%** | **8,902** | **75.6%** |
| **Austin Hospital (15+ years)** | **59,615** | **68,078** | **81,388** | **96,077** | **3.5%** | **36,462** | **61.2%** |
| **Austin Hospital Total** | **71,384** | **82,388** | **98,986** | **116,748** | **3.6%** | **45,364** | **63.5%** |
| Eastern Health – Angliss Hospital | 41,053 | 42,023 | 44,725 | 47,615 | 1.1% | 6,562 | 16.0% |
| Eastern Health – Box Hill Hospital | 47,796 | 52,477 | 59,082 | 65,870 | 2.3% | 18,074 | 37.8% |
| Eastern Health – Maroondah Hospital | 53,934 | 59,954 | 68,053 | 77,100 | 2.6% | 23,166 | 43.0% |
| Monash Health – Casey Hospital | 49,677 | 59,765 | 73,974 | 88,332 | 4.2% | 38,655 | 77.8% |
| Monash Health – Dandenong Campus | 58,245 | 64,738 | 74,076 | 84,060 | 2.7% | 25,815 | 44.3% |
| Monash Health – Monash Medical Centre | 72,446 | 80,313 | 91,838 | 104,198 | 2.6% | 31,752 | 43.8% |
| Northern Hospital | 68,259 | 78,290 | 95,787 | 117,241 | 3.9% | 48,982 | 71.8% |
| Royal Melbourne Hospital – City Campus | 61,133 | 67,271 | 76,726 | 86,299 | 2.5% | 25,166 | 41.2% |
| St Vincent's Hospital | 41,254 | 45,812 | 50,582 | 55,477 | 2.1% | 14,223 | 34.5% |
| Western Hospital | 36,455 | 38,846 | 42,840 | 47,569 | 1.9% | 11,114 | 30.5% |
| **All Vic** | **1,496,392** | **1,656,370** | **1,897,400** | **2,158,123** | **2.7%** | **661,731** | **44.2%** |

Source: Department of Health EM14

### Table 19: projected requirement for ED treatment spaces

| | 95TH PERCENTILE | 80TH PERCENTILE | TREATMENT SPACES (FOR 80TH PERCENTILE) |
|---|---|---|---|
| **2013–14** | 63 | 56 | 39 |
| **2021–22** | 89 | 79 | 52 |
| **2026–27** | 106 | 95 | 63 |

## PROJECTED INPATIENT SEPARATIONS

Inpatient activity was forecast using the Department of Health Inpatient Forecasting Model 2014 (Department of Health, 2014). A summary of the forecasting methodology is provided in *Appendix 3*.

The most significant growth in numbers of projected inpatient separations at Austin Health from 2013–14 to 2026–27 is expected in the 70–84 year age group (*Figure 2*).The highest rate of growth of 73% during this period is expected in the 85 and over age group. By 2026–27, inpatients aged 70 and over are projected to account for 43% of all admissions.

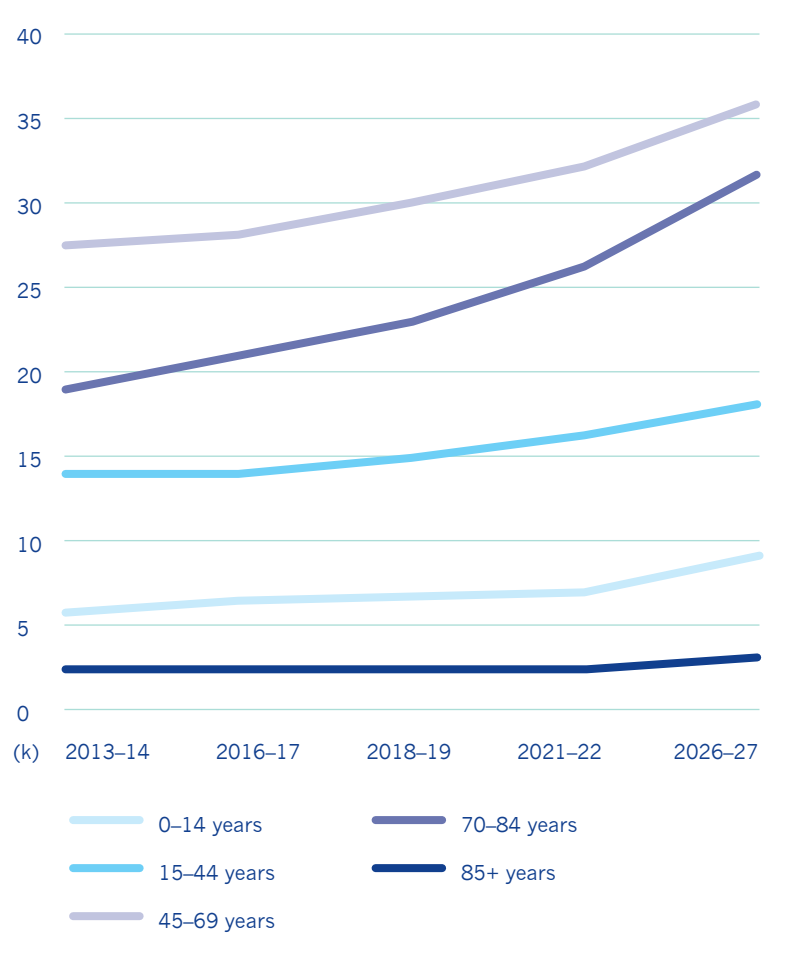
In contrast, inpatient admissions in the 0–14 year age group are projected to increase by 14% during this period, and account for 2.2% of admissions.

Projected inpatient separations are forecast to grow by 43.3% from 2013–14 to 2026–27 (*Table 20*).

The eleven highest volume MCRGs in 2013–14 accounted for approximately 74% of all separations in that year and will account for approximately 76% in 2026–27. There is no significant expected change in the ranking of activity by volume in the top 11 MCRGs.

Austin Health clinical units with the largest forecast growth in inpatient separations from 2013–14 to 2026–27 include: Renal Dialysis, Oncology, General Medicine, Emergency Medicine (short stay unit), Urology, Gastroenterology and Haematology (*Table 21*).

**Figure 2: Austin Health projected admissions by age group to 2026–27 excluding dialysis**




Source: Department of Health Inpatient Projection Model 2014)

## Table 20: Projected inpatient growth in separations by MCRG 2013–14 to 2026–27

| MCRG DESCRIPTION | 2013–14 | 2021–22 | 2026–27 | GROWTH | % GROWTH |
|---|---|---|---|---|---|
| Dialysis | 27,516 | 35,856 | 40,070 | 12,554 | 45.6% |
| Chemotherapy and Radiotherapy | 7,298 | 9,323 | 10,884 | 3,586 | 49.1% |
| Non Subspecialty Medicine | 4,747 | 5,685 | 6,658 | 1,911 | 40.3% |
| Orthopaedics | 4,707 | 5,641 | 6,504 | 1,797 | 38.2% |
| Non Subspecialty Surgery | 4,455 | 5,756 | 6,811 | 2,356 | 52.9% |
| Diagnostic GI Endoscopy | 4,086 | 5,106 | 5,796 | 1,710 | 41.8% |
| Neurology | 3,752 | 4,589 | 5,272 | 1,520 | 40.5% |
| Respiratory Medicine | 3,452 | 4,211 | 4,695 | 1,243 | 36.0% |
| Clinical Cardiology | 3,301 | 4,267 | 4,980 | 1,679 | 50.9% |
| Urology | 3,197 | 3,961 | 4,738 | 1,541 | 48.2% |
| Haematology | 3,006 | 3,716 | 4,194 | 1,188 | 39.5% |
| Oncology | 2,132 | 2,551 | 2,823 | 691 | 32.4% |
| Interventional Cardiology | 1,744 | 2,170 | 2,364 | 619 | 35.5% |
| Immunology and Infections | 1,712 | 2,246 | 2,751 | 1,039 | 60.7% |
| Gastroenterology | 1,800 | 1,964 | 2,221 | 421 | 23.4% |
| GEM* | 1,424 | 1,929 | 2,147 | 723 | 50.7% |
| Plastic and Reconstructive Surgery | 1,504 | 1,896 | 2,190 | 686 | 45.6% |
| Upper GIT Surgery | 1,363 | 1,774 | 2,028 | 665 | 48.8% |
| Ear, Nose and Throat | 1,279 | 1,390 | 1,593 | 314 | 24.6% |
| Renal Medicine | 1,059 | 1,323 | 1,522 | 463 | 43.7% |
| Mental Health | 1,115 | 1,308 | 1,482 | 367 | 32.9% |
| Rheumatology | 927 | 1,292 | 1,499 | 572 | 61.7% |
| Rehabilitation Sub Acute* | 1,242 | 1,024 | 1,137 | -105 | -8.4% |
| Neurosurgery | 1,006 | 1,235 | 1,464 | 458 | 45.5% |
| Ophthalmology | 751 | 1,181 | 1,443 | 692 | 92.2% |
| Vascular Surgery | 789 | 1,061 | 1,191 | 402 | 50.9% |
| Endocrinology | 758 | 892 | 997 | 239 | 31.5% |
| Colorectal Surgery | 757 | 970 | 1,141 | 384 | 50.7% |
| Cardiothoracic Surgery | 525 | 645 | 718 | 193 | 36.8% |
| Palliative Care | 466 | 516 | 588 | 122 | 26.3% |
| Drug and Alcohol | 471 | 471 | 517 | 46 | 9.9% |
| Breast Surgery | 394 | 456 | 516 | 122 | 30.8% |
| Head and Neck Surgery | 323 | 425 | 510 | 187 | 57.9% |
| Psychiatry | 279 | 356 | 400 | 121 | 43.2% |
| Dermatology | 237 | 337 | 377 | 140 | 58.9% |
| Gynaecology | 242 | 293 | 337 | 95 | 39.3% |
| Tracheostomy | 206 | 262 | 277 | 71 | 34.4% |
| Unallocated | 87 | 148 | 164 | 77 | 89.0% |
| Transplantation | 90 | 104 | 118 | 28 | 31.0% |
| Dentistry | 33 | 46 | 50 | 17 | 51.6% |
| Obstetrics | 49 | 35 | 38 | -11 | -23.0% |
| Qualified Neonate | 25 | 42 | 48 | 23 | 92.6% |
| Extensive Burns | 24 | 20 | 24 | 0 | 0.9% |
| Rehabilitation Acute | 3 | 2 | 2 | -1 | -31.7% |
| **Total** | **94,333** | **118,474** | **135,277** | **40,944** | **43.4%** |

Source: Department of Health Inpatient Projection Model 2014

* Sub-acute activity projections are based on the transfer rates from acute to sub-acute services rather than trends in sub-acute activity. A full description of the projections modelling is provided in the Inpatient Forecast Model User Manual (Department of Health, 2012).

## Table 21: Inpatient Separations 2013–14 to 2026–27 by Clinical Specialty

| CLINICAL UNIT | 2013–14 | 2021–22 | 2026–27 | GROWTH | % GROWTH |
|---|---|---|---|---|---|
| Anaesthetics | 1 | 2 | 2 | 1 | 58.8% |
| Breast Surgery | 566 | 636 | 713 | 147 | 26.0% |
| Cardiac Surgery | 446 | 548 | 627 | 182 | 40.7% |
| Cardiology | 2,465 | 3164 | 3,488 | 1,023 | 41.5% |
| Clinical Pharmacology | 59 | 73 | 79 | 19 | 32.4% |
| Colorectal | 1,301 | 1658 | 1,938 | 637 | 49.0% |
| Dermatology | 39 | 55 | 57 | 18 | 45.5% |
| Emergency Medicine | 7,048 | 8126 | 9,717 | 2,669 | 37.9% |
| Endocrinology | 295 | 377 | 401 | 105 | 35.6% |
| ENT/H&N | 1,247 | 1388 | 1,575 | 328 | 26.3% |
| Gastroenterology | 6,671 | 7955 | 9,038 | 2,367 | 35.5% |
| General Medicine | 4,191 | 6129 | 7,317 | 3,126 | 74.6% |
| Geriatric Medicine | 1,541 | 2071 | 2,310 | 770 | 50.0% |
| Gynaecology | 135 | 203 | 235 | 99 | 73.3% |
| Haematology | 4,008 | 5029 | 5,804 | 1,796 | 44.8% |
| Hepatobiliary and Transplant | 1,918 | 2419 | 2,769 | 852 | 44.4% |
| Infectious Diseases | 348 | 439 | 508 | 161 | 46.1% |
| Intensive Care | 19 | 21 | 23 | 4 | 20.0% |
| Liver Transplant Unit | 1,192 | 1335 | 1,460 | 268 | 22.5% |
| Maxillary Facial Surgery | 396 | 502 | 590 | 195 | 49.1% |
| Neurology | 1,651 | 2246 | 2,638 | 987 | 59.8% |
| Neurosurgery | 826 | 984 | 1,133 | 308 | 37.3% |
| Nuclear Medicine | 32 | 32 | 32 | 0 | 0.7% |
| Oncology | 7,877 | 9829 | 11,253 | 3,376 | 42.9% |
| Ophthalmology | 688 | 1114 | 1,361 | 672 | 97.7% |
| Orthopaedics | 2,945 | 3398 | 3,951 | 1,006 | 34.2% |
| Paediatric Medicine | 887 | 930 | 1,016 | 130 | 14.6% |
| Paediatric Surgery | 262 | 240 | 253 | -9 | -3.6% |
| Palliative Care | 569 | 642 | 733 | 163 | 28.7% |
| Plastic Surgery | 2,425 | 2832 | 3,224 | 799 | 32.9% |
| Psychiatry | 1,171 | 1381 | 1,560 | 389 | 33.3% |
| Radiation Oncology | 40 | 31 | 34 | -6 | -13.9% |
| Radiology | 1 | 1 | 1 | 0 | -15.8% |
| Rehabilitation | 568 | 419 | 475 | -93 | -16.4% |
| Rehabilitation – Talbot | 576 | 526 | 579 | 3 | 0.5% |
| Renal | 1,854 | 2377 | 2,682 | 828 | 44.7% |
| Renal Dialysis | 27,496 | 35835 | 40,050 | 12,554 | 45.7% |
| Respiratory and Sleep Med | 1,659 | 2094 | 2,360 | 701 | 42.2% |
| Rheumatology | 806 | 1164 | 1,317 | 511 | 63.4% |
| Spinal | 400 | 443 | 481 | 81 | 20.2% |
| Stroke | 777 | 955 | 1,029 | 252 | 32.4% |
| Thoracic Surgery | 533 | 624 | 670 | 137 | 25.7% |
| Upper GI-Endo | 1,502 | 1919 | 2,209 | 708 | 47.1% |
| Urology | 4,270 | 5498 | 6,643 | 2,373 | 55.6% |
| Vascular | 633 | 830 | 943 | 310 | 49.1% |
| **Total** | **94,333** | **118,474** | **135,277** | **40,944** | **43.4%** |

Source: Department of Health Inpatient Projection Model 2014 with CRG Mapped to Austin Health Clinical Specialty

While the Veteran community remains an important stakeholder for Austin Health, the number of inpatient Veteran separations continues to decline. In 2013–14, there were 1,793 Veteran separations at Austin Health – only 3.7% of total Veteran separations for that year (*Table 22*). 63% of Veteran separations in 2013–14 were at private hospitals. Since 2008–09, there has been an average 12% per annum decline in veteran separations at Austin Health. While there is no forecasting data specific to inpatient Veteran separations, it is likely that the current trend will continue.

**Table 22: Veteran Separations by Health Service, 2008–09 to 2013–14**

| PROVIDER GROUP | 2008–09 | 200–10 | 2010–11 | 2011–12 | 2012–13 | 2013–14 | CHANGE | % CHANGE | % CHANGE P.A. |
|---|---|---|---|---|---|---|---|---|---|
| Austin Health | 3,454 | 3,313 | 3,098 | 2,939 | 2,387 | 1,793 | -1,661 | -48.1% | -12% |
| % Austin Health | 5.1% | 5.0% | 5.0% | 4.9% | 4.5% | 3.7% | 0 | -27.9% | |
| Other public | 27,003 | 24,290 | 23,309 | 22,022 | 17,594 | 16,385 | -10,618 | -39.3% | -10% |
| Private | 37,444 | 38,072 | 36,093 | 34,960 | 32,784 | 30,729 | -6,715 | -17.9% | -4% |
| **Total** | **67,901** | **65,675** | **62,500** | **59,921** | **52,765** | **48,907** | **-18,994** | **-28.0%** | **-6%** |

Source: Department of Health Inpatient Projection Model 2014 (IPM 2014)

## PROJECTED INPATIENT POINT OF CARE (POC) REQUIREMENTS

Bed projections to 2021–22 and 2026–27 were forecast using the Department of Health Inpatient Forecasting Model 2014 (Department of Health, 2014) (refer *Appendix 3* for methodology).

Bed projections indicate the following variances between existing bed capacity and the projected bed requirements (*Table 23*):

- A surplus of 33 same-day acute beds in 2026–27
- A deficit of 53 multi-day acute beds in 2021–22 and 91 multi-day acute beds in 2026–27
- A deficit of 20 sub-acute beds in 2026–27.

Projections do not take into account future changes in models of care or the use of health technologies and clinical innovations.

A 24 bed SSOU will open in 2017 – and will relieve significant pressure on available ED treatment spaces (currently 39, but 47 from 2017). ED treatment space requirements are forecast to increase to 52 and 63 in 20121–22 and 2026–27 respectively. Service model changes and the opening of the SSOU are expected to dampen the forecast growth in demand for ED treatment spaces, and relieve pressure on inpatient beds.

The opening of four refurbished theatres at HRH in 2013 has resulted in an increase in the volume of surgery performed at HRH. A further increase in activity as a result of the transfer of additional theatre lists from the Austin Hospital to HRH will increase the requirement for multi-day and same day beds beyond the number projected in this plan.

**Table 23: Projected bed requirements to 2026–27 by care type**

| CARE TYPE | EXISTING POC* | 2021–22 PROJECTED POC | 2026–27 PROJECTED POC | VARIANCE EXISTING TO 2021–22 PROJECTED POC | VARIANCE EXISTING TO 2026–27 PROJECTED POC |
|---|---|---|---|---|---|
| ED SSOU | 24 | Forecast ED SSOU beds are not included, as the forecast model is not sensitive to the proposed model of care changes in ED. 14 SSOU beds are currently fully utilised. | | | |
| Renal dialysis satellite | 28 | 27.9 | 32.2 | 0 | -4 |
| Renal dialysis same day | 39** | 29.7 | 32.2 | 9 | 7 |
| Same day acute | 118 | 78.2 | 85.4 | 40 | 33 |
| Multi-day Acute | 491 | 543.7 | 582.2 | -53 | -91 |
| Mental Health | 111 | 87.9 | 94.4 | 23 | 17 |
| Sub-acute | 210 | 212.9 | 230.2 | -3 | -20 |
| **Total (excluding SSOU beds)** | **997** | **980** | **1,067** | **17** | **-60** |

Source: Source: DHHS Inpatient Projection Model 2014 (IPM2014) – projections by CRG, apportioned to Austin Health clinical specialties based on data from 1 July 2012 to 31 March 2015

* Existing beds by mid-2016 following completion of capital works in ED and at HRH – includes funded and unfunded beds
** Includes five home therapies centre chairs at HRH

## PROJECTED INTENSIVE CARE UNIT BED REQUIREMENTS

The ICU has 29 points of care, and is currently funded to 20 ICU equivalents. The most recent increase in ICU bed funding occurred in June 2013, when one additional bed was opened. Two beds are managed by ICU during weekdays in Recovery High Dependency.

Table 24 details the projected requirements for ICU beds at Austin Health to 2026–27, adjusted to include estimated additional bed requirements for patients currently refused admission to ICU (including elective surgery patients, transfers from other health services) due to no beds. These projections indicate that in 2026–27 30.9 ICU beds will be required, which is beyond existing capacity.

In addition to current levels of unmet need, there is a view that there will be additional requirements for ICU beds related to the following:

- The commencement of the Allogeneic bone marrow transplant service at Austin Health
- Increasing rates of Medical Emergency Team (MET) calls, where the international benchmark for ICU admissions after MET is about 25 %. (We run currently at approximately 12%)
- Expansion of the Extracorporeal Membrane Oxygenation (ECMO) service in response to an increased caseload and clinical indications for ECMO.

It is important to note that outside the ICU, there are areas of the hospital with high levels of patient acuity, and there can be a significant additional workload for clinical staff in those areas. Workforce models to support and sustain the delivery of high quality and safe care in areas with a high acuity case mix into the future need to be considered.

**Table 24: Projected ICU beds to 2026–27 adjusted for current unmet need**

| | EXISTING BEDS | 2021–22 | 2026–27 | VARIANCE |
|---|---|---|---|---|
| ICU beds | 29 | 27.9 | 30.9 | -1.9 |

Source: Department of Health Inpatient Projection Model 2014 and ICU Alarta database

## PROJECTED OPERATING SUITE REQUIREMENTS

Projections were undertaken to determine future operating suite and endoscopy suite requirements (refer *Appendix 3* for methodology).

The projections indicate that to meet demand to 2026–27 (*Table 25*):

- 20.3 operating suites will be required to meet in-hours activity. There are currently 18 functional operating suites at Austin Health
- A fifth endoscopy rooms will be required
- The current number of procedure rooms is sufficient.

It is important to also note that access to surgical inpatient beds at Austin Hospital and at HRH currently limits growth in surgery activity – not the availability of operating theatres.

At least one of the operating theatres at Austin Hospital will need to be a hybrid theatre to accommodate the current volume of endovascular work and to enable us to have capacity for emerging forms of endovascular work and to provide a location for endovascular and open procedures being done as one procedure. Some endovascular work is currently being undertaken in the angiography suites in Radiology, which are currently running at capacity. Development of a hybrid theatre will free up some capacity in radiology to accommodate some of the expected growth in the volume and complexity of interventional procedures.

**Table 25: Operating suite projections to 2026–27**

| THEATRE TYPE | EXISTING FUNCTIONAL NUMBER OF THEATRES | THEATRES REQUIRED IN 2021–22 | THEATRES REQUIRED IN 2026–27 |
|---|---|---|---|
| Operating Suite | 19 | 17.7 | 20.3 |
| Endoscopy Suite | 4 | 3.9 | 4.5 |
| Procedure room | 2 | 1.1 | 1.2 |

## TRENDS IN DEMAND FOR AMBULATORY CARE SERVICES AND SPECIALIST CLINICS

Demand for ambulatory care services and specialist clinics are likely to continue to grow – especially with a focus on hospital avoidance and early discharge to the community.

### Hospital in the Home

Redesign work in 2014-15 has resulted in an increased scope of work undertaken by HITH; however activity is constrained by caps on capacity (*Figure 3*). Future growth in HITH activity and scope is anticipated as models of care are reviewed.

### Residential Outreach Service (ROS)

The Residential Outreach Service (ROS) is a DHHS funded service that aims to review aged care residents within their facilities, to provide a timely, person-centred management approach for acute medical conditions.

In 2013–14, to address the increasing numbers of patients referred to ROS presenting to ED/fast track, there was a change to model of care. ROS became a geriatrician led model, moving away from the traditional use of ED consultants. Operational hours increased to 7 days a week, a full time Aged Care Registrar was employed (Feb 15) and the ward based Aged Care Clinical Nurse Consultant (CNC) role was moved into the ROS team.

This model created a three tiered approach which:

- Prevents ED admissions via triaging referrals within Residential Aged Care Facilities (RACFs) – (ROS)
- Prevents inpatient admission through triaging patients in ED (registrar and CNC)
- Facilitates the early discharge of patients back to RACFs and Residential Care Units via the Aged Care CNC.

Since the implemented changed there has been a 14% decrease in ED admission from RACFs in our LGA when adjusted for RACF bed growth. Service demand is likely to continue to grow, as there is still a significant number of residential aged care facilities in the Austin Health catchment that under-utilise or do not use this service.

**Figure 3: HITH activity 2010–11 to 2015–16 (FYE)**

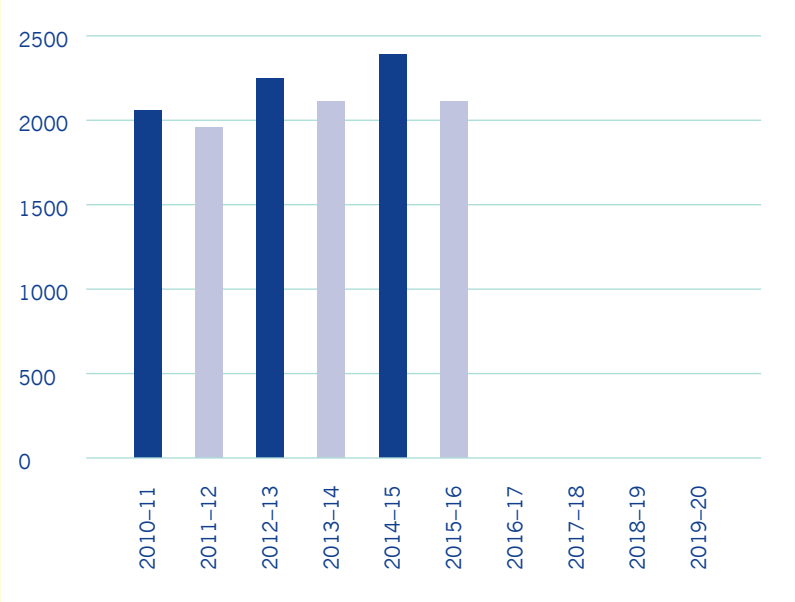
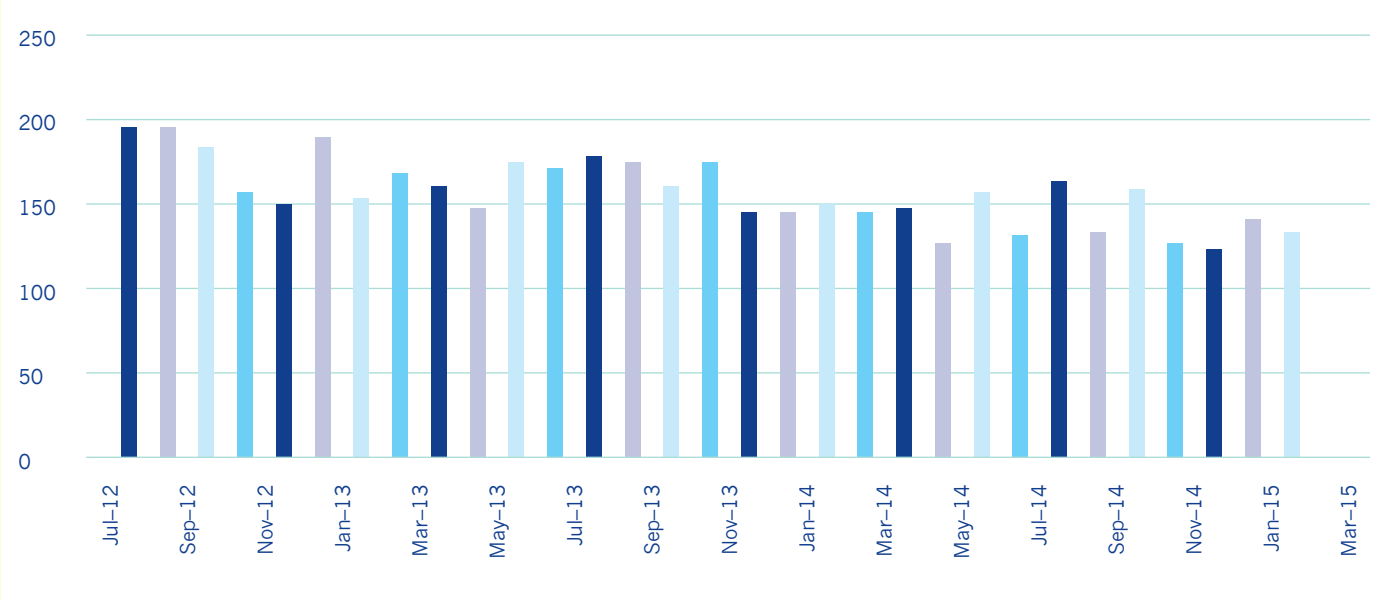



**Figure 4: RACF presentations to ED 2012–2015 (adjusted for bed growth in RACFs)**



## HEALTH INDEPENDENCE PROGRAM

The Health Independence Program (HIP) aims to provide hospital substitution and diversion services by supporting people in the community, in ambulatory settings and in people's homes. Programs include:

- Post-Acute Care (PAC)
- Sub-acute Ambulatory Care Services (SACS)
- Hospital Admission Risk Program (HARP).

Clinical streams include:

- Rehabilitation services
- Specialist services
- Complex care management
- Intake and fast track care management.

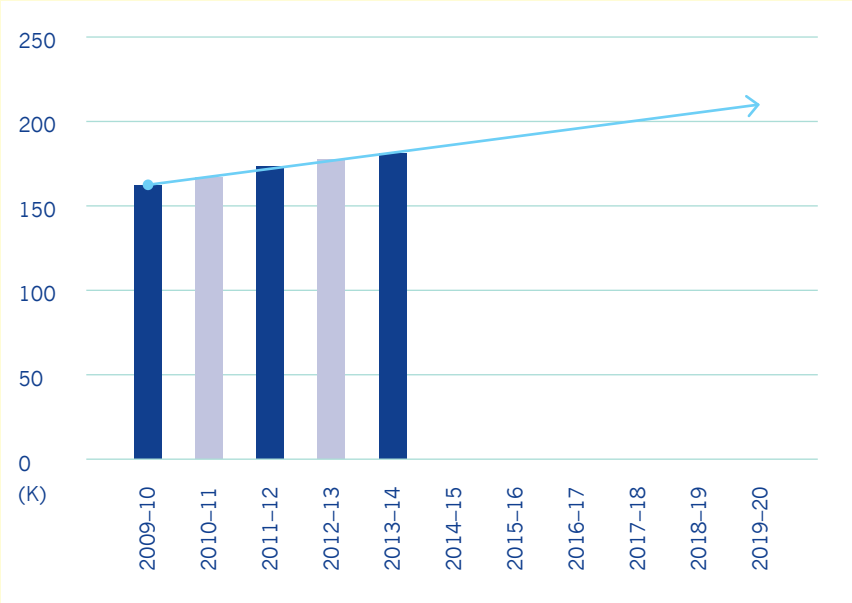
From 2011–12 to 2013–14, there was a 27% increase in HIP contacts, and linear projections indicate significant future growth in this ambulatory service (*Figure 5*).

**Figure 5: Health Independence Program contacts 2011–12 to 2013–14 with linear projection to 2016–17**

## SPECIALIST CLINICS

Our specialist clinics have experienced 12.6% growth during the period 2009–10 to 2013–14, and linear projections to 2019–20 indicate that without any change to our model of care, this trend is likely to continue (*Figure 6*).

**Figure 6: Specialist clinic attendances 2009–10 to 2013–14 with linear projection to 2019–20**



# Future Trends in the Delivery of Acute Health Services

## INPATIENT SEPARATIONS

In 2013–14, there were 95,136 inpatient separations at Austin Health (*Table 8*). 76.7% of separations were at the Austin Hospital, and only 0.7% at RTRC.

55.1% of separations were from our primary catchment and 21.45% from our secondary catchment in 2013–14 (*Table 9*).

Emerging trends in service models include:

- *Generalist* inpatient models of care for patients with multiple or complex chronic conditions
- A focus on hospital avoidance – partnering with primary care, residential outreach services, ambulance and police for early community-based responses as an alternative to ED. Examples include specialist hot lines and hot clinics to support GPs in patient care management, aged care residential outreach services, and hospital in the home services
- ED diversion strategies – direct transfer of relevant patient cohorts from triage to the appropriate specialist unit.

## Table 26: Emerging technologies by specialty

| SPECIALTY | TECHNOLOGY |
|---|---|
| Cardiovascular | • Radial Percutaneous Coronary Intervention<br>• Fenestrated stents<br>• Trans-catheter aortic valve implantation |
| Diagnostic Imaging | • Dual-energy Computed Tomography (CT)<br>• Positron Emission Tomography (PET)/ Magnetic Resonance Imaging (MRI)<br>• Diffusion tensor MRI<br>• Peptide receptor radiotherapy (Lu-177-DOTATATE therapy for neuroendocrine tumours and Lu-177 PSMA therapy for prostate cancer |
| Neurosciences | • Portable sleep monitoring<br>• Transcranial magnetic stimulation<br>• Deep brain stimulation<br>• Clot retrieval for stroke |
| Oncology | • Stereotactic body radiation therapy<br>• Targeted therapy (enabled by genomics)<br>• Radiofrequency ablation |
| Orthopaedics | • Unicompartmental knee replacement<br>• Minimally invasive hip replacement |
| Surgical services | • Stretta – for gastro-oesophageal reflux disease<br>• LINX® – for gastro-oesophageal reflux disease<br>• EndoBarrier – for obesity<br>• Single-site robotic surgery |
| Respiratory services/ thoracic surgery | • New generation ventilators and continuous positive airway pressure(CPAP) machines with remote monitoring<br>• Bronchoscopy: cryobiopsy and pulmonary valves |
| Pathology | • RNA-based Next Generation Sequencing<br>• Digital pathology and image analysis<br>• Circulating tumour cell assays<br>• Point-of-care testing in the home and remote monitoring |
| Allied Health | • Exoskeleton technology<br>• Computer aided design of orthotics<br>• Ossointegration new amputee technology |
| Intensive Care | • Extracorporeal membrane oxygenation for cardiac arrest, septic shock and organ failure<br>• Non-invasive haemodynamic monitoring of global and regional blood flow<br>• Automated predictive scoring systems for patient deterioration |
| Organ donation/transplant | • Transplant organ optimization through extracorporeal organ perfusion<br>• Organ and tissue donation from extended criteria donors |
| Anaesthesia | • Improved monitoring and more automated anaesthesia delivery systems, with a move away from volatile anaesthetics<br>• More sophisticated minimally invasive neuromodulation technologies for chronic pain and neurosurgery<br>• Targeted analgesia based on genomics for acute pain |
| Overall | • 3D printing |

# Austin Health's Role and Future Service Mix

## AUSTIN HEALTH ROLE

Austin Health will continue to provide:

- Complex tertiary and state-wide services
- An appropriate volume of community hospital-type services
- Integrated strong education and research programs.

## FUTURE SERVICE PROFILE

Austin Health currently comprises nine state-wide services,[8] 22 regional services[9] (of which five are mental health services) and 27 local services[10] (*Table 27*). Some regional services provide one or more services to a state-wide population. Over half the local services provided one or more discrete services to a regional referral base.

The key foci of our current and future state-wide and regional services include:

- Oncology and surgical oncology services – some tumour streams (brain, lung and mesothelioma, melanoma, upper gastrointestinal cancer and allogeneic bone marrow transplant)
- Neurosciences – particularly epilepsy
- Hepatopancreatobiliary services
- Liver and intestinal transplant services
- Spinal services
- Specialist mental health services
- Specialist respiratory services
- Some specialist cardiology services (with proposed future expansion of the range of specialist cardiology services).

While some of the regional services (e.g. spinal surgery) are a product of the co-located state-wide services, others (e.g. epilepsy services) are a product of the particular expertise of our clinicians.

The role delineation of our current services is provided in *Appendix 2*.

Austin Health's current and proposed future service level for each of its clinical services was reviewed, and a future service level for each was determined (*Table 27*). This will:

- Guide the development of new services – including all appropriate supporting and complementary services
- Ensure that the focus of future service development and investment within each existing clinical service is appropriate for the proposed service level, and that variations are appropriate for supporting higher level services at Austin Health
- Clarify individual service catchments and tailor services and communication accordingly.

[8] A state-wide service (or subspecialty within a service) is generally only available at one or two health services and provides a service for a state-wide catchment. Quaternary referrals are received from many other Victorian health services with lower role delineation.

[9] A regional service is a service (or subspecialty within a service) that serves a broader regional catchment, including the local catchments of one or more of our neighbouring health services. Subspecialist medical staff are required to provide the service. Referral pathways to the service are available for neighbouring health services with lower role delineation.

[10] A local service is one that is provided primarily to a Health Service's local catchment. Similar services will usually be provided by most surrounding Health Services. Referral pathways are available to and from other health services that provide a higher level service or service to more complex or higher risk patients.

All Austin Health's state-wide services were reviewed in relation to the following required state-wide service attributes:

- Fills a critical service gap within Victoria
- Best for patients
- Sustainable demand
- Affordable – in the longer term (10 years)
- Has the critical mass for optimal quality, safety and efficiency
- Capacity to be the best in the world – including in clinical care, research and education
- High level of broad clinician support/passion
- Required support services have the necessary role delineation
- Does not negatively impact on other critical services (including other clinical and clinical support services).

All our existing state-wide services will remain, however:

- There will be a need to determine the new model of care for our state-wide Child Inpatient Unit (CIU) for when the Monash CIU opens
- The cost of the state-wide Electromagnetic Navigation Bronchoscopy (ENB) service provided by the Thoracic Surgery Department may not be affordable in the short-term.

All Austin Health current regional services (or regional sub-specialty within a local service) were reviewed in relation to the following required regional service attributes:

- Required to support one of our state-wide services or fills an important service gap in the region
- Best for patients
- Capacity to be the best in Australia/Victoria
- The service has the research capability to support research and its publication
- Affordable – in the longer term (10 years)
- The service would have the critical mass for optimal quality, safety and efficiency
- An equivalent service is not available at both Eastern Health and Northern Health (or planned for both)
- Required support services have the required role delineation
- Does not negatively impact on other critical services (including other clinical and clinical support services).

Austin Health's current regional services will remain as regional in the future. However:

- DHHS is currently reviewing family planning services in Victoria, and this may impact on the level of family planning service provided by our Gynaecology service in future
- Mental Health service will transition its Child and Adolescent Mental Health Service (up to 18 years old) to a Child and Youth Mental Health Service (up to 25 years old).

All Austin Health's current local services were assessed against the following required attributes of a local service:

- Fills a necessary acute service gap
- Best for patients
- The service would have the critical mass for optimal quality, safety and efficiency
- Affordable – in the longer term (10 years)
- Does not negatively impact on other critical services (including clinical support services).

All local services currently will remain as local services in the future, with the exception of:

- The melanoma service, which is developing its service to a regional level
- Cardiology which will expand its regional service offerings.

The continued provision of limited family planning services, in the absence of other obstetrics and gynaecology services at Austin Health, is under review with DHHS. The review will have regard to the state-wide requirements for these services and growth in alternative service providers.

In addition, Austin Health will seek DHHS support to provide a local aged mental health service as part of a *whole of life* mental health service. This service is currently provided by the North Western Mental Health Service.

Austin Health will have a strong planning focus on its highly specialised (i.e. state-wide and regional) services to ensure ongoing leadership and viability of these services.

RECOMMENDATION 1

**That Austin Health continues to develop service plans and regularly reviews its highly specialized services to ensure an appropriate referral base, early uptake of emerging evidence-based health technologies and practices, and ongoing viability.**

DESIRED OUTCOME

- Leadership in designated highly specialized services
- Viability of highly specialized services
- Growth in referrals from other hospitals for highly specialised state-wide and regional services.

INDICATOR

- Number of referrals from other hospitals for specialist services.

## Table 27: Current and proposed service level of Austin Health clinical services

| CLINICAL UNIT | CURRENT | PROPOSED | COMMENT |
|---|---|---|---|
| Liver and Intestinal Transplant Unit<br>*– variations* | State-wide | State-wide | • Includes Tasmania and southern NSW |
| | *National catchment for Intestinal Transplant* | *National* | • *Includes NZ* |
| Rehab (ABI) | State-wide | State-wide | • The impact on our state-wide role, of the recent opening of the Caulfield Rehabilitation Centre is currently being monitored<br>• To date occupancy has been maintained by broadening the case mix of patients and accepting more stroke patients |
| Respiratory Medicine – Vic. Resp. Support Service (VRSS) | State-wide | State-wide | |
| Respiratory Medicine – Victorian Weaning Unit (VWU) | State-wide | State-wide | |
| Toxicology – Victorian Poisons Information Centre | State-wide | State-wide | |
| Victorian Spinal Cord Service | State-wide | State-wide | • Risk to acute service due to issues with late referrals from the trauma service at the Alfred<br>• The impact on our state-wide role, of the recent opening of the Caulfield Rehabilitation Centre is currently being monitored |
| Mental Health Services (Brain Disorders Unit) | State-wide | State-wide | |
| Mental Health (Psychological Trauma Recovery Service) | State-wide | State-wide | |
| Mental Health Child Inpatient Unit | State-wide | To be determined | • State-wide level of service criteria will likely be unable to be met following the opening of the child inpatient unit at Monash Health |
| Thoracic Surgery<br>*– variations* | Regional | Regional | |
| | *State-wide for ENB* | *To be advised* | • *State-wide level of service compromised in the short term due to funding* |
| Gastroenterology | Regional | Regional | |
| Neurosurgery<br>*– variations* | Regional | Regional | |
| | *State-wide for epilepsy surgery* | *State-wide* | |
| Apheresis service | Regional and local | Regional and local | |
| Mental Health Services (CAMHS – community) | Regional | Regional | • Subject to change if DHHS changes catchment boundaries<br>• Goal is to pursue *whole of life* MH service |
| Mental Health (adolescent inpatient unit) | Regional | Regional | • Subject to change if DHHS changes catchment boundaries<br>• Goal is to pursue *whole of life* MH service |
| Mental Health (inpatient Secure Extended Care Unit) | Regional | Regional | |
| Mental Health – Body Image and Eating Disorders Treatment and Recovery Service (BETRS) | Regional | Regional | |
| Mental Health (Parent and infant inpatient program) | Regional | Regional | |
| Clinical Pharmacology | Regional | Regional | |
| Infectious Diseases<br>*– variations* | Regional | Regional | |
| | *National for Hand Hygiene Australia* | *National* | |
| Renal transplant<br>*– variations* | Regional | Regional | |
| | *State wide for paediatric live donor transplant (adult nephrectomy surgery)* | *State-wide* | • *Done at RCH and MMC only (MMC do own adult nephrectomy surgery)* |

**Table 27: Continued**

| CLINICAL UNIT | CURRENT | PROPOSED | COMMENT |
|---|---|---|---|
| Genetics Service | Regional | Regional | |
| Radiation Oncology (BAROC) | Regional | Regional | |
| Cardiac Surgery | Regional | Regional | |
| ENT, Head and Neck Surgery | Regional | Regional | |
| Gynaecology/Family planning | Regional | To be guided by state-wide plan | • State-wide planning for family planning currently underway |
| Hepatopancreatobiliary and Transplant | Regional | Regional | |
| Maxillofacial Surgery | Regional | Regional | |
| Ophthalmology | Regional | Regional | |
| Upper GI Surgery | Regional | Regional | |
| Medical Oncology – Head and Neck cancer | Regional | Regional | |
| Medical Oncology – CNS cancer | Regional | Regional | |
| Medical Oncology – Lung cancer and mesothelioma | Regional | Regional | |
| Medical Oncology – Upper GI cancer | Regional | Regional | |
| Medical Oncology – melanoma | Local | Regional | |
| Medical Oncology – Breast cancer | Local | Local | |
| Medical Oncology – Colorectal cancer | Local | Local | |
| Medical Oncology – Genitourinary cancer | Local | Local | |
| Medical Oncology – Thyroid and other endocrine cancer | Local | Local | • Cancer Clinical Trials attract a broader catchment |
| Plastic Surgery<br>*– variations* | Local | Local | |
| | *State-wide for tendon transfer surgery* | *State-wide* | |
| | *Regional for breast reconstruction surgery* | *Regional* | |
| Endocrinology<br>*– variations* | Local | Local | |
| | *Regional for obesity clinic and men's and women's clinics* | *Regional* | |
| Paediatric Medicine<br>*– variations* | Local | Local | |
| | *Regional for epilepsy* | *Regional* | |
| | *Regional for endocrine* | *Regional* | |
| | *Regional for eating disorders* | *Regional* | |
| Respiratory Medicine (Gen)<br>*– variations* | Local | Local | |
| | *Regional for EBUS* | *Regional* | |
| | *State-wide for ENB* | *To be advised* | • *State-wide level of service compromised in the short term due to funding* |
| | *Regional for sleep studies* | *Regional* | |
| | *Regional for interstitial lung disease* | *Regional* | |
| | *Regional for allergy service* | *Regional* | |
| Haematology<br>*– variations* | Local | Local | |
| | *Regional for Bone Marrow Transplant* | *Regional* | |

**Table 27: Continued**

| CLINICAL UNIT | CURRENT | PROPOSED | COMMENT |
|---|---|---|---|
| Neurology<br>*– variations* | Local | Local | |
| | *Regional for stroke service and clot retrieval* | *Regional* | |
| | *Regional for epilepsy* | *Regional* | |
| Radiation Oncology (Austin Hospital)<br>*– variations* | Local | Local | |
| | *Regional for gynae-brachytherapy patients and for stereotactic radiation therapy* | *Regional* | |
| Cardiology | Local | Local | |
| Cardiology Laboratory<br>*– variations* | Local | Local | |
| | *Regional for some complex interventions* | *Regional* | |
| Gastroenterology (Endoscopy)<br>*– variations* | Local | Local | |
| | *Regional for complex endoscopy and interventional endoscopy* | *Regional* | |
| Orthopaedic Surgery<br>*– variations* | Local | Local | |
| | *Regional for spinal surgery* | *Regional* | |
| Urology<br>*– variations* | Local | Local | |
| | *Regional for testicular cancer surgery* | *Regional* | |
| Breast Surgery<br>*– variations* | Local | Local | |
| | *Regional for breast reconstruction surgery* | *Regional* | |
| Colorectal Surgery<br>*– variations* | Local | Local | |
| | *Regional for incontinence and other complex colorectal surgery* | *Regional* | |
| Vascular Surgery<br>*– variations* | Local | Local | |
| | *Regional for renal transplant surgery* | *Regional* | |
| | *Regional for combined cardiac and vascular surgery* | *Regional* | |
| | *Regional for complex endovascular intervention* | *Regional* | |
| Vascular Laboratory<br>*– variations* | Local | Local | |
| | *Regional for management of venous diseases* | *Regional* | |
| Rehabilitation<br>*– variations* | Local | Local | |
| | *Regional for prosthetics service* | *Regional* | |
| Nephrology | Local | Local | |
| Nephrology – Renal Dialysis | Local | Local | • Provides satellite services |
| Palliative Care | Local | Local | |
| Dermatology | Local | Local | |
| Emergency Medicine | Local | Local | |

**Table 27: Continued**

| CLINICAL UNIT | CURRENT | PROPOSED | COMMENT |
|---|---|---|---|
| Toxicology – general | Local | Local | |
| General Medicine | Local | Local | |
| Geriatric Medicine | Local | Local | |
| Mental Health (NEAMHS – inpatient and community) | Local | Local | • Very small catchment. Subject to change if DHHS changes catchment boundaries<br>• Goal is to pursue *whole of life* MH service |
| Mental Health (aged inpatient and community) | NIL | Local | • Want to provide a local service to meet service demand and provide continuity of care |
| Mental Health (General Hospital MH) | Local | Local | |
| Rheumatology<br>– *variations* | Local<br>*Regional for complex auto-immune disorders* | Local<br>*Regional* | |
| Anaesthesia | All | All | • Extended referral base to support the operating and procedural caseloads of state-wide services |
| ICU | All | All | • Extended referral base to support state-wide services<br>• Referral base also influenced by Adult Retrieval Victoria patient allocation processes |
| Medical imaging | All | All | • Extended referral base to support state-wide services<br>• A broader regional base for neuro-intervention and Sir-spheres |
| Molecular Imaging and Therapy | All | All | • Extended referral base to support state-wide service<br>• A broader regional and state-wide base for PET in neurology and oncology, and specific therapies (e.g. Thyroid cancer, SIRs spheres, theranostics and radionuclide therapy)<br>• A broader regional and state-wide referral base for specific imaging modalities and clinical trials for colorectal and genitourinary cancer |
| Pathology | All | All | • Extended referral base to support state-wide services<br>• Provides contracted services to some other health services, and referred test requests from other pathology providers |
| Pharmacy | All | All | • Extended referral base to support state-wide and specialist services<br>• Referral base also influenced by patients outside our catchment accessing clinical trials that provides them with drug therapies otherwise not available to them |
| Nutrition and Dietetics | All | All | • Provides clinical care for relevant state-wide, regional and local services<br>• This includes inpatients and ambulatory care services |
| Occupational therapy | All | All | • Provides clinical care for relevant state-wide, regional and local services<br>• This includes inpatients and ambulatory care services |
| Physiotherapy | All | All | • Provides clinical care for relevant state-wide, regional and local services<br>• This includes inpatients and ambulatory care services |
| Social Work | All | All | • Provides clinical care for relevant state-wide, regional and local services<br>• This includes inpatients and ambulatory care services |

**Table 27: Continued**

| CLINICAL UNIT | CURRENT | PROPOSED | COMMENT |
|---|---|---|---|
| Speech Pathology | All | All | • Provides clinical care for relevant state-wide, regional and local services<br>• This includes inpatients and ambulatory care services |
| Pastoral Care | All | All | • Provides clinical care for relevant state-wide, regional and local services<br>• This includes inpatients and ambulatory care services |
| Tracheostomy Review and Management Service (TRAMS) | All | All | • Provides clinical care for relevant state-wide, regional and local services<br>• This includes inpatients and ambulatory care services |
| Orthotics/prosthetics | All | All | • Provides clinical care for relevant state-wide, regional and local services<br>• This includes inpatients and ambulatory care services. Provides services to external referrers and third party providers |
| Podiatry | All | All | • Supports a limited service to manage patients with high risk foot conditions only<br>• Limited Podiatry care to bed based services |
| Psychology and Neuropsychology (TALBOT) | All | All | • Provides clinical care for relevant state-wide, regional and local services based at Talbot |
| Community Integration Leisure and Creative Therapies Talbot | All | All | • Provides clinical care for relevant state-wide, regional and local services based at Talbot<br>• Creative therapies service is supported by fundraising |

# Our Services in Future

## HEALTHCARE PRINCIPLES

The following healthcare principles will guide future health service development and delivery:

- Consumer and carer driven care
- Evidence-based practice – and service models and health technologies that support this
- Right care, right place, right provider, right time
- The right workforce for today and in future
- Care in the community and close to home, where appropriate
- Seamless care transitions – including acute to sub-acute, and transition home
- Evaluating the impact and outcomes of what we do.

## MODELS OF CARE TO DELIVER BEST CARE

**Rethinking care for patients with multi-morbidity**

The Primary Health Care Research and Information Service (PHCRIS) (Erny-Albrecht and McIntyre, August 2013) reported estimates of prevalence of chronic disease and multi-morbidity in Australia. Sourcing data from a number of studies, they reported that:

- Australian estimates of chronic disease prevalence vary between 50–80% of the adult population
- Overall prevalence rates for multi-morbidity (where eight or more chronic conditions were included) were approximately:
  - 50% of all adults aged between 45 and 65 years
  - 66% of adults aged 60 years or older
  - 80% of adults aged 75 years and older.

The US Agency for Healthcare Quality and Research (Steiner, Barrett, Weiss, and Andres, 2014) published data regarding the growing percentage of US hospital patients with multi-morbidity:[11]

- 64% in 2003
- 78% in 2014.

The trend to increasing co-morbidity in Australian hospitals is likely to be similar.

The organisation of services at Austin Health, like many other health services, is defined by clinical specialties. Clinical guidelines and care pathways are largely single-disease focused. The healthcare system is not well designed to manage the complexity of patients with multi-morbidity – and the increased bed day resources and service coordination this group frequently needs.

There is strong interest among Austin Health clinicians to review the health service approach to patients with multi-morbidity – and rethink how we organise, configure and deliver care. There is recognition that a new model of care is needed to support provision of the right care in the right place by the right provider at the right time.

[11] Using the definition of *any combination of chronic disease with at least one other disease (acute or chronic) or bio-psychosocial factor (associated or not) or somatic risk factor.*

A revised model of care will need to include:

- A strong multifaceted hospital diversion / avoidance program run in partnership with General Practice, community and ambulatory services informed by local and overseas (e.g. New Zealand and U.K.) experience and current subspecialty chronic disease guidelines
- Support for patient self-management and early identification of clinical and functional deterioration in the community that can trigger appropriate and timely intervention Early identification (at ED or specialist clinic) of clinical, social and psychological risk
- Subsequent streaming of clients to care that is appropriate for the level of need, such as non-bed based models, hot clinics
- Complexity streaming in ED (and specialist clinic) to guide specialist versus generalist admission and referral decisions to ensure safest and most appropriate care
- Consideration of more *generalist* models of care for the patients with multi-morbidity as the default option
- New models of care to better manage the complexities of multi-morbidity for medical, surgical and mental health patients – ensuring overall generalist coordination whilst delivering the best of specialist care based on clinical and whole of person need
- Engagement of primary and community care in care planning and community-based case management for the more complex of the patients with multiple or complex chronic conditions.

The Advisory Board (International Clinical Operations Board, 2015) has recently published a report on models of care that have improved outcomes for patients with multiple chronic conditions. This resource will assist in guiding development of appropriate models of care.

**Sub-acute funded services**

Whilst we now accept that movement from a traditional acute to a sub-acute program should occur along an admission continuum, the separation of acute and sub-acute campuses compromises the capacity to provide seamless care.

The lack of overnight and weekend medical cover at RTRC and the limited support services at both HRH and RTRC means that only medically stable patients can be accommodated on these campuses. Consequently, access to services at HRH and RTRC is delayed – sometimes quite substantially. Colocation of acute and sub-acute services is optimal but, for the most part, not entirely feasible given established infrastructure. There is strong support from clinicians to expedite earlier access to rehabilitation and GEM inpatient services to optimise outcomes, prevent deconditioning of patients and reduce overall LOS.

The level of inpatient rehabilitation intensity is relatively low in Australia (approximately 37 minutes every second day) (Poulos, 2010) and clinical advice suggests that Austin Health is no exception. There is a correlation between rehabilitation intensity and functional gain for stroke, orthopaedic and debility. The Australasian Faculty of Rehabilitation Medicine has specified that: An appropriate amount of therapy that patients receive ranges from a minimum of three hours for patients who have the capacity to tolerate this amount of therapy, down to lesser amounts, based on patient need and capacity to participate. This should occur on a minimum of five days per week.

Access to rehabilitation is constrained by no allied health cover on weekends, no leave cover for allied health staff, and HRH rehabilitation facilities currently used to capacity during business hours. The inpatient rehabilitation facilities and equipment at HRH are insufficient to meet the current rehabilitation needs of HRH inpatients, and fall far short of those required to meet the anticipated growth in demand over the next ten years. The therapy area – previously a ward area – is not fit for purpose (e.g. no wheelchair access to some patient treatment areas, doorways are too low for movement of equipment) and therefore limits the range of therapies provided.

The future service model will be as follows:

- Establish an integrated (Aged Care and General Medicine) service with expertise in acute, multi-morbid and generalist rehabilitation skills on the Austin Hospital and HRH campuses, with sufficient bed capacity to accommodate the projected growth in complex, multi-morbid demand, (including an additional 20 GEM beds by 2026–27)
- Default to community-based or home-based rehabilitation, and only provide inpatient rehabilitation where community-based and home-based rehabilitation is not feasible
- Engaging all clinical staff in the rehabilitation of inpatients by utilising every staff-patient encounter as a rehabilitation opportunity, will be an important strategy in increasing rehabilitation intensity
- Nurse practitioner or advanced practice roles to support the assessment and care of the older complex care patients.

Austin Health will continue to pursue the relocation of all services on the RTRC site to HRH to improve patient care quality and safety and improve care efficiency. In the interim Austin Health will pursue greater use of tele-health for inter-campus consultation and review.

Sub-acute bed requirements have been projected as follows:

- 213 beds by 2021–22 – an additional 3 beds over our current capacity
- 230 beds by 2026–27 – an additional 20 beds over our current capacity.

With current bed occupancy at between 95.3% and 99.5% in all sub-acute wards (except ABI ward) there is little capacity to accommodate this estimated increase in demand within existing capacity.

### Care coordination

The Emergency Department, acute inpatient services and sub-acute inpatient services currently have separate care coordination systems and workforce. There is a lack of clarity about roles in relation to patient assessment and decisions regarding transfers between acute and sub-acute services, care coordination and discharge planning, which leads to inefficiencies in processes and delays in transfer of patients. There is opportunity to streamline transfers from ED to acute wards, acute wards to sub-acute wards, and discharges to primary care programs by developing an integrated approach to care coordination.

### Ambulatory service models

To enable us to respond to the expected increase in demand for our services and to accommodate patient preference, Austin Health will continue to expand ambulatory care options in three areas:

- Hospital avoidance – identifying those at high risk of ED presentation or hospital admission, and supporting primary care partners to prevent this (e.g. through the use of Residential Outreach Program, MHAPS, hotline for GPs to access timely specialist advice, and hot clinics that provide an alternative to ED for patients requiring specialist review within 24–48 hours). This also includes ED bypass strategies that would divert some patient groups (such as patients receiving ongoing therapies at Austin Health) at the point of triage to the relevant specialist unit
- Hospital substitution – providing an alternative to hospital care where feasible for patients requiring acute healthcare (e.g. through the use of programs such as Hospital in the Home and the Residential Outreach Service)
- Assisted discharge – facilitate the provision of the right package of community based healthcare on discharge from hospital to assist the recovery of patients and prevent re-admissions (e.g. through the use of the Health Independence Program and engaging with and supporting primary care partners to provide ongoing care). There will be a heavy emphasis on providing patients with the skills and tools for staying well, and identifying, and responding appropriately to signs of deterioration.

Where possible, the use of ambulatory care services will be built into the clinical care pathways for a broader range of conditions in order to substitute for, or reduce, inpatient stays for patients with those conditions.

RECOMMENDATION 2

**That Austin Health reviews and redesigns models of care for:**

**a) Early identification, clinical management, care planning and, where appropriate, ongoing care coordination for patients with multiple or complex chronic conditions**

**b) An integrated Geriatric, General Medicine and acute rehabilitation service on the Austin Hospital and HRH campuses, with sufficient bed capacity to accommodate the projected growth in demand (an additional 20 beds by 2026–27)**

**c) One integrated care coordination service model and system**

**d) Expansion of ambulatory services and further development of rapid access and community support models as alternatives to inpatient care.**

DESIRED OUTCOME

- Care targeting patients with multiple or complex chronic conditions, with early assessment and initiation of discharge planning in acute units
- Decreased total LOS for specified patient groups
- Reduced readmission rates
- Direct admission to sub-acute ward for complex older patients with higher level of acuity
- Increased % of patients discharged to community-based services rather than inpatient sub-acute services
- No increase in number of transfers from sub-acute to acute services in spite of increased acuity
- Additional capacity to meet projected GEM demand
- Improved care continuity across ED, acute services, sub-acute services and primary care
- Improved patient satisfaction
- Increased use of ambulatory care services.

INDICATOR

- Inpatient LOS for specified patient groups
- Unplanned readmission rates
- LOS for GEM patients
- Number of inter-campus transfers
- Utilisation rates of Hospital in the Home, Residential Outreach Service, and other hospital substitution programs.

## SURGICAL SERVICES

The future surgical service model at Austin Health will be as follows:

- Emergency surgery, and elective surgery for patients likely to need intensive care or access to technologies (including hybrid theatre) not available at HRH, will be provided at Austin Hospital
- All other elective surgery will be provided from the HRH site
- The peri-operative model of care has a focus on the identification and medical management of co-morbidities to optimise the patient's condition pre and post-surgery
- Agreed surveillance systems are in place at HRH post-surgery to identify deterioration and patients requiring transfer to Austin Hospital
- There are agreed care pathways that guide patient care and the patient journey for all surgical procedures
- Patients are provided with timely information about the procedure and pre-and post-surgical care
- Endoscopy patient flow is disentangled from the surgical patient flow: enabling pre and post-procedure management of endoscopy patients by endoscopy nurses
- Consolidation of all Austin Hospital operating theatres onto a hot floor comprising Radiology, ICU, operating theatres, separate endoscopy suite, and CSSD, as outlined in the Austin Health Strategic Master Plan, 2011. This will require the relocation of CSSD to level 2 of the Harold Stokes Building.

To accommodate expected growth in surgical activity over the next 10 years, our operating suite requirements include:

- 20.3 operating suites including one or two hybrid theatres for growth in endovascular work
- A 5th endoscopy room to be located at HRH.

Currently Austin Health has:

- 18 effective theatres that are able to be used: ten at Austin Hospital and eight at HRH
- 4 endoscopy rooms: two at Austin Hospital and two at HRH.

Currently endovascular procedures are performed in the Angiography suites located in Medical Imaging. These facilities are currently at capacity, with no room for growth.

Importantly, access to surgical inpatient beds at Austin Hospital and at HRH currently limits growth in surgery activity. Additional surgical bed capacity at HRH will be required to support the future model of care, and optimise the use of the redeveloped operating theatres at that site.

The capacity for increased efficiency at Austin Hospital is compromised by the current layout of the theatre suite due to a number of design infrastructure issues:

- Theatre 12 is no longer able to be used due to significant infrastructure issues and a lack of anaesthetic bay. Also, theatre 11 is used sparingly due to infrastructure limitations
- Endoscopy integration with theatres
  - Which works against efficient endoscopy patient flow
- Workflow and patient safety within the Austin Hospital theatre suite is compromised by:
  - The position of the recovery rooms (which are not central)
  - Inadequate and poorly located storage
  - The *front of house*, where pre-operative, post-operative area, procedure rooms and relatives waiting areas are all in together
  - Overcrowded staff areas and inadequate office space
  - Location of the Central Sterilising Services Department (CSSD) on a different floor
  - Leakage through ceiling tiles, old air conditioning system and poor air exchange capacity.

The majority of the operating theatres are 34 years old; the theatre complex was not included in the Austin Hospital redevelopment opened in 2005.There is an urgent need to redevelop the Austin Hospital theatres.

The eight operating theatres at HRH have been redeveloped over recent years and are in good operating condition. The air flow at the endoscopy/procedure rooms at HRH limits their use to endoscopic and small procedural work that does not require prostheses. Ophthalmology surgery is not able to be performed in those rooms.

Planning for an additional endoscopy suite will be required well in advance of 2025.

RECOMMENDATION 3

**That Austin Health pursues:**

**a) As a matter of priority, the redevelopment of operating theatres at Austin Hospital to provide twelve contemporary theatres (including 1–2 hybrid theatres) – as described in the Austin Health strategic master plan**

**b) An additional overnight-bed surgical ward at HRH, with appropriate service and workforce models, to accommodate higher acuity surgical patients and procedures and the net transfer of activity from the Austin to the HRH site.**

DESIRED OUTCOME

- Meet current and future surgical demand
- Safe surgical environment
- Downgrade of clinical risk
- Efficient use of theatres
- Improved patient experience
- Reduce surgical wait times.

INDICATOR

- Theatre utilisation rate
- Number of critical incidents
- Elective surgery access KPIs
- Surgical wait times.

## MENTAL HEALTH SERVICES

Austin Health is a major provider of local, regional and state-wide mental health (MH) services.

Key issues for mental health services include:

- Misaligned catchment boundaries for MH services for different age groups – compromising *whole of life* care and integration of mental and physical healthcare
- A significant unfunded workload for *out of catchment* patients
- The Austin MH service is not funded to provide services to those aged 65+
- The Austin MH child inpatient unit has declining occupancy (currently approximately 30%) and will be unsustainable in its current form once the Monash MH child inpatient unit is operating in 2017.

Implementation of a new model of care (defined in the MH Service Plan, 2010) is currently underway. It includes:

- Transitions from a Child and Adolescent MH Service (CAMHS) model of care to Child and Youth MH Service (CYMHS), and relocate the services from Austin Hospital campus to collocate with other services in the community
- An adult mental health community service (for those aged 18+) provided from a facility that is collocated with other community services (i.e. an expanded Hawdon street or other facility).

The MHCSU will also pursue the following service model changes:

- Activity-based funding that enables the patient to choose providers and funding to follow the patient
- MH governance of aged MH service and integration with the adult MH service
- Establishing the Mental Health and Police Service (MHAPS) for a collaborative and community-based intervention which prevents avoidable presentations to hospital emergency department
- Establishing the specialist Prevention and Recovery Centre (PARC) at the HRH site for consumers with dual disability (i.e. intellectual and mental health disabilities) for recovery and transition to community living and relocate the 3-bed Step 2 service to this facility
- A new model of care for our state-wide Child Inpatient Unit (CIU) in the context of the development of the Monash CIU. This may include participation in the development of a pilot child MH model of care in which residential services are provided in the community by a non-government organisation, and Austin Health may provide the therapeutic service for dislocated and troubled families
- Replacement of the 11 bed adolescent (12–18 years) inpatient unit with a 25 bed (or more) youth (12–25 years) inpatient unit to accommodates projected growth – and collocate this service, and the BETRS eating disorders inpatient service. (The current facility is too small and not fit-for-purpose)
- Introduce a Psychiatric Assessment and Planning Unit (PAPU) model of care to the redeveloped SSOU – with the service focused on diagnosis, treatment and linkages
- Pursue an ED model whereby MH patients receive care in a safe place, and by MH trained staff
- Move to shorter stays in the Brain Disorders Program – enabling earlier transition back into the community – No change in bed numbers required
- Expansion of the acute adult psychiatric unit (APU) to accommodate future demand by those aged 18+ (including aged mental health clients) – reaping additional capacity through the relocation of BETRS eating disorders inpatient unit
- The Psychological Trauma Recovery Service (PTRS) pursue a lead state-wide role in recognising and responding to the experience of trauma – collaborating with other MH services in a collaborative hub and spoke model
- Provision of Electroconvulsive Therapy services in the APU
- Model of care improvements in partnership with other clinical services, in relation to the drug and alcohol inpatient referral service.

The model of care and bed base will remain the same for Community Recovery Program (CRP), PARC and Secure and Extended Care Unit (SECU), although development of a forensic Secure and Extended Care Unit (SECU) at HRH may be pursued (per the MH Service Plan 2010).

RECOMMENDATION 4

**That Austin Health works with DHHS to:**

**a) Pursue an Austin Health 'whole of life' Mental Health (MH) service, and funding models to support this – this should include further consideration of catchment boundaries to provide appropriate scale of services**

**b) Move to a new Child and Youth MH service model, and collocate services with other services in the community**

**c) Determine the new model of care for our state-wide Child Inpatient Unit (CIU) for when the Monash CIU opens**

**d) Replace the adolescent (12–18 years) inpatient unit with a youth (12–25 years) inpatient unit to accommodate projected growth.**

DESIRED OUTCOME

- Improved care continuity for MH clients
- Improved integration of mental and physical healthcare for MH clients
- Patient choice and satisfaction
- Improved access for children and youth to CYMHS
- Sufficient capacity to meet demand for youth inpatient admissions.

INDICATOR

- Rate of MH patient transfers from Austin Health ED to Northern Health
- Number of community-based CYMHS consultations
- Wait times for youth inpatient admissions.

## SPECIALIST CLINICS

In 2013–14 there were approximately 184,000 specialist clinic attendances: a growth of over 12.5% from 2009–10. This is higher than the rate of growth in inpatient separations (9%) for the same period, but lower than the rate of growth in ED presentations (14.7%) for that period. Over recent years there has been a growth in the proportion of review appointments relative to new appointments.

To meet the anticipated future growth in demand for specialist clinics, Austin Health will pursue a strategy of earlier transition to primary care management, and shared care where required. This will be aided by a focus on primary care support strategies and patient self-management, as outlined in previous sections. Work undertaken in specialist clinics will focus on the provision of services that require the resources and expertise of a tertiary hospital.

Specialist clinics are currently located:

- At two locations at HRH:
  - Level 4 of the Centaur building in purpose-built space
  - Ground floor of the Tobruk building
- On Level 3, Lance Townsend Building at Austin Hospital
- In the ONJ Centre.

The Austin Health Strategic Master Plan (2011) proposed vacating the Tobruk building, and relocating Specialist Clinics to a purpose built space. The service model concept that underpins this proposal is the development of outpatient precincts at Austin Hospital and HRH that bring together all specialist clinics (where feasible) and provides good proximity to imaging, pathology collection and pharmacy services. This supports ease of access for patients needing to access multiple outpatient services. It also enables efficient use of shared spaces and amenities: thereby assist efforts to reduce wait times and accommodate growth in demand for specialist clinics.

Specialist clinics are the only remaining services within the Tobruk building. The poor building infrastructure, poor design and space limitations compromise the service quality and efficiency and the patient experience.

Orthopaedic clinics relocated to the Centaur building in 2013. Austin Health will continue to pursue consolidation of all HRH specialist clinics, and vacating the Tobruk building.

RECOMMENDATION 5

**That Austin Health works with DHHS to identify funding options to provide appropriate specialist clinic facilities on the HRH site, and vacate the Tobruk building.**

DESIRED OUTCOME

- Accommodation for specialist clinics that supports best patient care, efficient workflow and cost-effectiveness
- Increased patient satisfaction.

INDICATOR

- Patient satisfaction
- Operating costs.

## SEVEN DAY A WEEK SERVICE MODEL

Staffing levels and support service operating hours within Austin Health facilities vary significantly depending on the day of the week and the hour of the day. Medical and allied health staffing levels are at a minimum during evenings and weekends. Services such as medical imaging and pharmacy are also limited during those times. As a result, those patients who are admitted immediately prior to or during the weekend, tend to have longer length of stay and poorer outcomes than those who are admitted to hospital early in the week. In addition, inter-hospital transfers to the Austin Hospital for acute care are more likely to occur on weekends, given the lack of on-site medical cover at RTRC, and the minimal medical cover at HRH on weekends.

Austin Health will work towards being a truly seven-day-a-week hospital through improved alignment of staffing and service levels on weekends and evenings.

# Future Service Distribution

The Austin Health Strategic Services Plan (2009) and the Austin Health Strategic Master Plan (2011) set out a plan for:

- All inpatient and outpatient services currently provided on the Austin Hospital, HRH and RTRC sites to be consolidated onto the Austin Hospital and HRH sites (*Table 28*)
- All time critical, urgent and high acuity services to be provided from the Austin Hospital site
- Sub-acute services to be consolidated on the HRH site
- Elective surgical and planned care services and services which are unlikely to require intensive care, or access to technologies which can only be provided on the Austin Hospital site are provided from the HRH site.

Austin Health will continue to pursue this agenda.

Two campuses instead of three will support safer and more efficient care, and health service sustainability. For example, it is not cost effective to provide on-site medical cover at the RTC site and this is a significant limitation to the case mix that can be cared for on that site.

Austin Health will continue to increase the complexity of surgical patients and procedures at HRH, and further develop service and workforce models that support this. An additional surgical ward on the HRH site is required to meet current and future demand (*see section 9*).

In addition, Austin Health will pursue an integrated Aged Care and General Medical Service with sufficient bed-capacity at the Austin Hospital and HRH site to accommodate the projected growth in GEM inpatient bed requirements – an additional 20 beds by 2026–27 (*see section 6*).

The availability of appropriate inpatient rehabilitation facilities at the HRH will be critical prior to the relocation of RTRC rehabilitation services onto the HRH site. The HRH inpatient rehabilitation facilities are currently used to capacity during business hours. They are insufficient to meet the rehabilitation needs of HRH inpatients currently, and fall far short of those required to meet the anticipated growth in demand over the next ten years. The therapy area – previously a ward area – is not fit for purpose (e.g. no wheelchair access to some patient treatment areas, doorways are too low for movement of equipment) and therefore limits the range of therapies provided.

RECOMMENDATION 6

**That Austin Health:**

**a) Explores with DHHS, funding options for the redevelopment of inpatient rehabilitation facilities at HRH**

**b) Pursues the relocation of services on the HRH site and the vacation of services from the RTRC site.**

DESIRED OUTCOME

- On-site access to aged care physicians for all geriatric and rehabilitation service patients
- Greater service efficiency
- Improved quality of care
- Fewer inter-campus transfers.

INDICATOR

- Service costs
- Overall episode LOS (i.e. acute and sub-acute LOS)
- Average FIM score change
- Number of inter-campus transfers.

## Table 28: Proposed Austin Health future service distribution

| CATEGORY | AUSTIN HOSPITAL | HRH | RTRC (INTERIM) | OTHER |
|---|---|---|---|---|
| Acute | • Specialist and general surgery<br>• Specialist and general medicine<br>• Renal dialysis<br>• Cancer services<br>• Emergency Department and After Hours GP Clinic<br>• ICU/HDU/CCU<br>• Paediatric medicine<br>• Specialist clinics<br>• Ambulatory Care Centre<br>• Medi-Hotel<br>• Operating theatres and the Surgical and Endoscopy Centre | • Specialist and General surgery<br>• Operating theatres and the Surgery Centre<br>• Renal Dialysis<br>• Specialist clinics | | • Ballarat Austin Radiation Oncology Centre at Ballarat<br>• North Eastern Kidney Service at Preston<br>• Epping Dialysis Unit at Epping |
| Sub-acute | • Palliative Care<br>• Acute rehabilitation<br>• Combined General Medicine/Aged Care service<br>• Health Independence Program Services | • Aged Care and Rehabilitation Services<br>• Inpatient/outpatient Rehabilitation<br>• Aged Care Assessment Service<br>• Health Independence Program services<br>• Aged Care Community Services<br>• Inpatient rehabilitation (Mellor)<br>• Spinal rehabilitation<br>• ABI Unit<br>• Amputee Services<br>• Continuing Care ambulatory rehabilitation services<br>• Combined General Medicine/Aged Care service | • Inpatient rehabilitation (Mellor)<br>• ABI Unit<br>• Amputee Services<br>• Victorian Amputee Limb Program<br>• Spinal rehabilitation<br>• Continuing Care ambulatory rehabilitation services<br>• Health Independence Program services | |
| Mental Health | • Adult Inpatient Units<br>• Child and Adolescent Mental Health Service (including inpatient and community services)<br>• Crisis Assessment Team/Emergency Psychiatry Service<br>• Consultant Liaison | • Psychological Trauma Recovery Service (including Veteran Psychiatry)<br>• Child and Adult Psychology<br>• Community Teams<br>• Community Recovery Program<br>• Specialised PARC<br>• Secure Extended Care Unit<br>• Brain Disorders Unit including inpatient Health Unit, Mary Guthrie House and transition house | • Brain Disorders Unit including inpatient Health Unit, Mary Guthrie House and transition house | • Adult Community Outreach Services – Hawdon St Heidelberg<br>• Prevention and Recovery Centre – Law St Heidelberg Heights<br>• Community child and youth MH services – in community hubs within the extended catchment |
| Diagnostic and Laboratory services | • Inpatient Diagnostic and Laboratory Services<br>• Outpatient Diagnostic and Laboratory Services | • Outpatient Diagnostic and Laboratory Services | • X-ray | |
| Research/ other | • Bio Resource Centre<br>• Olivia Newton-John Cancer Wellness and Research Centre<br>• Institute for Breathing and Sleep<br>• Austin Medical Research Foundation<br>• Spinal Research Institute<br>• The Florey Institute of Neuroscience and Mental Health | • Parent/Infant Research Institute<br>• Northern Centre Against Sexual Assault | | |

# Clinical Service Enablers

## ELECTRONIC HEALTH RECORD

Austin Health will continue to stay in front in the development of the electronic medical record.

Austin Health will continue to work towards a fully integrated medical record attached to a clinical and research warehouse. This would include:

- Electronic clinical service scheduling systems
- A patient portal through which patients can confirm or select relevant appointments, and access relevant patient information
- A primary care portal through which GPs and other primary healthcare providers can refer patients and access information to support ongoing patient care
- Data warehouse and business intelligence systems that support the research and evaluation of service access, patient flow, quality of care and health outcomes, and a drive for improvement.

Austin Health will continue to lead the health system in the development of a fully integrated medical record, and address current gaps including:

- Integrating bedside monitoring into the electronic medical record (EMR)
- Support for information exchange with neighbouring health services
- Expansion of the EMR to include Intensive Care Unit and Anaesthetics modules.

## TELEMEDICINE

Hospital substitution and home and community based care are key areas of pursuit at Austin Health. Austin Health will advance the use of telemedicine, mobile devices, and remote monitoring technologies that support care management outside of hospital. In addition, development of telemedicine and teleconferencing infrastructure at all Austin Health campuses will enable:

- Inter-campus consultation services (clinician to clinician and clinician to patient)
- Remote support of outreach clinics for our state-wide services thereby improving patient convenience and reducing readmissions
- Specialist consultation services to general practice and community health services
- Consultation services to residential aged care facilities
- Inter-campus meetings that obviate the need to travel between campuses
- Capability for internal *virtual rounds.*

Austin Health will be guided by planning work currently being undertaken by DHHS regarding the development of a Victorian state-wide tele-health platform.

RECOMMENDATION 7

**That Austin Health progresses the development of telemedicine capability at each of Austin Health's campuses, through the:**

**a) Roll out of telemedicine hardware to all specialist clinic locations**

**b) Adoption of an appropriate software solution**

**c) Development of workflows that support data collection including consent and billing for use of telemedicine in specialist clinics.**

DESIRED OUTCOME

- Patient convenience
- Improved access to medical consultation at RTRC and HRH saved travel time for staff and patients
- Improved workflow efficiency in specialist clinics.

INDICATOR

- Level of patient satisfaction
- Staff travel time saved
- Level of access to medical consultation at RTRC and HRH on weekends and evenings
- Specialist clinic efficiency indicators.

## NEW HEALTH TECHNOLOGIES AND CLINICAL INNOVATIONS

Austin Health has a strong interest in adopting new evidence-based health technologies and clinical innovations; however the constrained funding environment requires clarity regarding health technology and service development priorities. Austin Health's New Health Technologies and Clinical Innovations Committee provides governance over the introduction of new health technologies and clinical innovations (including new models of care). However its application and review methodology has been limited – particularly in relation to the introduction of new models of care and new services and their impact on other services (such as diagnostic services and allied health).

Austin Health needs to ensure its health services provide health benefit to the community, deliver care that is safe, are fiscally responsible and fit with the service role and level and strategic direction of the organisation. To this end, the new health technologies and clinical innovations review process needs to include:

- Review of the safety, effectiveness, cost-effectiveness, organisational impact and appropriateness of the new technology or clinical innovation
- Identification of issues that require address in its introduction
- Guidance regarding implementation monitoring, to ensure the ongoing safe, effective and cost-effective application.

Austin Health will continue to improve its processes for review and decision making regarding the introduction of new health technologies, models of care and services.

Austin Health also recognises the importance of identifying and disinvesting in current treatment that is ineffective. The National Institute for Health and Care Excellence (NICE) in the UK has produced a *do-not-do* list of ineffective treatments. An Australian study (Elshaug AG, 2012) has identified over 150 low-value health care practices. The Grattan Institute released a report in August 2015 (Duckett S, August 2015) that highlighted some ineffective treatments on those lists, and proposed a way forward. These provide a good starting point for the identification of potentially futile care at Austin Health. Disinvestment in ineffective treatment will release funds for the introduction of new and effective treatment.

Austin Health will pursue a program of work which seeks to identify and disinvest in ineffective and non-beneficial care, and releases funds for the investment in evidence-based new health technologies and clinical innovations.

To ensure patients get only the care they want, Austin Health will also continue to:

- Take a leading role in promoting the development of Advance Care Plans
- Build organisational skill and activity in the appropriate initiation of end-of-life discussions.

Austin Health will build its capability to provide future models of personalised *precision* patient care. As a leader in Genomic medicine and a member of the Melbourne Genomics Alliance (MGA), Austin will build its genomic testing capability and an appropriate (translational) research base in genomics.

## WORKFORCE

Health Workforce 2025 (March 2012) reported the likely continuation of health workforce shortages out to 2025 for doctors and nurses, with the magnitude of shortage likely to be highly significant for nurses and less so for doctors. They noted that continuing to use the same models to deliver health services into the future may not be sustainable, and that:

- Workforce reform would need to focus on *expanding scope of practice, use of assistants, prescribing rights and, service based reforms in areas such as cancer care and promotion of generalism*
- Workforce and workplace reform to boost productivity, flexibility and retention.

Austin Health has led the way with many such workforce reforms and will continue to have a strong focus on this.

To ensure we have suitably skilled and competent nurses to work across the diversity of health care services, Austin Health will continue to encourage nurses to work to their full scope of practice. This will include exploring opportunities for enhanced scope of practice for nurses and consideration of further Nurse Practitioner roles in the future to facilitate quality care for patients.

In light of the predicted shortfall of Nurses across Australia by 2025, Austin Health will commit to ensuring we are the employer of choice. Effective recruitment and retention strategies to attract and retain Registered and Enrolled Nurses will be essential, including employment options for our mature workforce that provide opportunity for meaningful and rewarding work roles.

The Allied Health workforce at Austin Health is largely focused on inpatient care provision. The growth in Allied Health workforce at Austin Health has not kept pace with the growth in ambulatory care services and the steadily increasing number of patients being discharged from hospital and who require follow-up allied health support. Allied Health services in specialist clinics are limited. To address these issues, Allied Health will continue to review workforce models to optimise care and access to its services. The focus will be on managing immediate patient risks and clinical care needs and working with other providers to transfer care back to the community following discharge. Allied Health will continue to pursue advanced practice roles and assistant roles as well as interdisciplinary models of care.

Austin Health is one of small number of acute health services in Victoria to provide level 3 vocational (registrar) training. As such, Austin Health has a responsibility to the Colleges and broader community to train registrars to service the whole system – not just Austin Health.

Benefits to Austin Health include:

- A significant vocational trainee workforce that provide the backbone of the medical workforce at Austin Health
- The capacity to retain the best for its future medical workforce.

However, there is some concern that the high number of vocational trainees limits our capacity to respond to the growing proportion of multi-morbid patients who may benefit from a different (more generalist) medical workforce.

The Australian health system vocational medical training numbers in some specialties do not correlate well with projected need across Australia more broadly, and there is a projected shortfall by 2025 of general medicine and some other craft groups (Health Workforce Australia, November 2012).

Austin Health has a strong interest in having the right workforce model to support changing models of care – particularly in relation to the management of patients with multiple or complex chronic conditions.

RECOMMENDATION 8

**That Austin Health continue to progress its workforce reform agenda, with a focus on:**

**a) Developing advanced practice and assistant roles**

**b) Medical workforce reform that supports service model reform in relation to patients with multiple or complex chronic conditions**

**c) A review of the balance between vocational medical trainee and service needs.**

DESIRED OUTCOME

- A workforce that supports best patient care, is sustainable, and buffers Austin Health from the impact of workforce shortages in future
- Good balance between vocational trainee and service needs
- Capacity to develop the right workforce mix now and in future.

INDICATOR

- Proportion of new vacancies that are successfully filled
- Number of new extended scope roles
- Workforce costs
- Alignment between projected demand for specialist workforce and number of vocational trainees per specialty.

## RESEARCH AND EDUCATION

The focus of Austin 2025 is Austin Health's clinical services. However, a research agenda and clinical education program that align with Austin Health's clinical services is critical.

Alignment between clinical practice and research supports patient access to clinical trials, and early access to evidence-based clinical innovation. Austin Health will develop a research strategy to clarify research expectations, and define a research agenda that is supported by, and supports, the directions set out in this plan.

Austin 2025 points to the need to review models of care and workforce mix to deliver best care. Austin Health will pursue a clinical education program that supports new service and workforce models, and early adoption of evidence-based practice.

# Operating as Part of the Broader Healthcare System

**Austin Health operates within a large and complex healthcare system, and must work with many other providers of primary, secondary and tertiary services to ensure the most appropriate and well-coordinated use of resources to benefit the community.**

## PARTNERSHIP WITH PRIMARY CARE

While Austin Health remains focused on its acute healthcare role, it recognises its dependency on primary care partners to prevent or manage ill health in the community, and to ensure appropriate ongoing care following an inpatient stay. Failures in primary health care management can lead to avoidable ED presentations, hospital admissions and readmissions.

Austin Health has an important role in supporting the primary healthcare system to keep people well and out of hospital.

Key primary healthcare partners include:

- The Eastern Melbourne Primary health Network (EMPHN) and the North Western Melbourne Primary Health Network (NWMPHN) – established under Commonwealth legislation to *improve the efficiency and effectiveness of medical services for patients, particularly those at risk of poor health outcomes, and improving coordination of care to ensure patients receive the right care in the right place at the right time*
- Community Health Service of Banyule, Darebin, Nillumbik and Plenty Valley
- Royal District Nursing Service (RDNS)
- North East Primary Care Partnership (NEPCP) – providing the nexus with other local organisations with a population health focus
- The North and West Metropolitan Health Regional Office of the DHHS – as the policy advisors and funding arm of DHHS in relation to community health services.

Consultation with GPs, the EMPHN and NWMPHN and community health service partners has particularly pointed to the need for coordinated action to improve the community-based management of people with chronic and complex conditions, and people with ongoing mental illness.

Support sought from our primary healthcare partners include:
- Timely access to specialist advice (via telephone and online) and outpatient review – to avert the need for hospital presentations
- Ongoing education support
- Joint care planning
- Timely communication regarding patient visits to Austin Health.

Austin Health is working with the EMPHN, NWMPHN and local community health services to pursue after hours primary care services based at community health services.

Austin Health is also working with Police and Ambulance to improve the early response to people in crisis.

Austin Health will work collaboratively with our primary healthcare partners, GPs and other community service providers to deliver best care for patients as part of a well-integrated healthcare system.

RECOMMENDATION 9

**That Austin Health works with its primary care partners to develop and pursue a joint strategy to keep people well and out of hospital – especially those with chronic and complex conditions or chronic mental illness.**

DESIRED OUTCOME

- Decrease in ED presentations growth rate
- Decrease in admissions of patients with ambulatory care sensitive conditions (ACSC).

INDICATOR

- % change in ED presentations per annum
- % change in ACSC admissions.

## PARTNERSHIP WITH OTHER ACUTE HEALTH SERVICES

In an environment of ever-increasing service demand and significant fiscal constraint, it is critical that acute health services work together to share expertise, skills and resources for the delivery of best patient care and a sustainable healthcare system. In 2015, Austin Health and Northern Health commenced work on the development of a partnership agreement that would benefit patients:

- From our shared local catchment (Darebin LGA and Whittlesea LGA)
- Referred from Northern Health to our Austin Health's regional and state-wide services.

This work will continue.

Austin Health will also pursue partnerships with other acute health services to ensure:

- An appropriate regional service mix for a sustainable healthcare system
- Formalised default referral networks to ensure patients receive the right care in the right place.

RECOMMENDATION 10

**That Austin Health pursues partnerships with other acute health services for appropriate regional service mix and formalised default referral pathways.**

DESIRED OUTCOME

- Sustainable regional healthcare system
- Right care, right place.

INDICATOR

- Number of services for which there is an established inter-hospital referral pathway.

# Austin Health Clinical Service Priorities

Austin Health's clinical service priorities and recommendations are summarised in the table below.

**Table 29: Summary of Austin Health clinical service priorities and recommendations**

| CLINICAL SERVICE PRIORITIES | RECOMMENDATIONS |
|---|---|
| PRIORITY 1<br>Align future service and technology adoption with the roles of Austin Health and its clinical units.[12] | RECOMMENDATION 1<br>That Austin Health continues to develop service plans and regularly reviews its highly specialized services to ensure an appropriate referral base, early uptake of emerging evidence-based health technologies and practices, and ongoing viability. |
| PRIORITY 2<br>Design ambulatory and inpatient service and workforce models appropriate for patients with multiple or complex chronic conditions. | RECOMMENDATION 2<br>That Austin Health reviews and redesigns models of care for:<br>a) Early identification, clinical management, care planning and, where appropriate, ongoing care coordination for patients with multiple or complex chronic conditions<br>b) An integrated Geriatric, General Medicine and acute rehabilitation service on the Austin Hospital and HRH campuses, with sufficient bed capacity to accommodate the projected growth in demand (including an additional 20 forecast GEM beds by 2026–27)<br>c) One integrated care-coordination service model and system<br>d) Expansion of ambulatory services and further development of rapid access and community support models as alternatives to inpatient care |

[12] See section 8.2 of this plan.

**Table 29: Continued**

| CLINICAL SERVICE PRIORITIES | RECOMMENDATIONS |
|---|---|
| PRIORITY 3<br><br>Consolidate services onto two sites:<br>a) Expand planned surgical services and consolidate non-acute rehabilitation services at HRH<br>b) An integrated general medicine and aged care and acute rehabilitation at Austin Hospital and HRH<br>c) A truly seven day a week hospital model on both sites | RECOMMENDATION 3<br><br>That Austin Health pursues:<br>a) As a matter of priority, the redevelopment of operating theatres at Austin Hospital to provide twelve contemporary theatres (including 1–2 hybrid theatres) – as described in the Austin Health strategic master plan<br>b) An additional overnight-bed surgical ward at HRH, with appropriate service and workforce models, to accommodate higher acuity surgical patients and procedures, and the net transfer of activity from the Austin to the HRH site<br><br>RECOMMENDATION 5<br><br>That Austin Health works with DHHS to identify funding options to provide appropriate specialist clinic facilities on the HRH site, and vacate the Tobruk building.<br><br>RECOMMENDATION 6<br><br>That Austin Health:<br>a) Explore with DHHS, funding options for the redevelopment of inpatient rehabilitation facilities at HRH<br>b) Pursues the relocation of services on the HRH site and the vacation of services from the RTRC site |
| PRIORITY 4<br><br>Pursue a *whole of life* and appropriately-sized Mental Health (MH) service. | RECOMMENDATION 4<br><br>That Austin Health works with DHHS to:<br>a) Pursue an Austin Health *whole of life* Mental Health (MH) service, and funding models to support this – this should include further consideration of catchment boundaries to provide appropriate scale of services<br>b) Move to a new Child and Youth MH service model, and collocate services with other services in the community<br>c) Determine the new model of care for our state-wide Child Inpatient Unit (CIU) for when the Monash CIU opens<br>d) Replace the adolescent (12–18 years) inpatient unit with a youth (12–25 years) inpatient unit to accommodates projected growth |

**Table 29: Continued**

| CLINICAL SERVICE PRIORITIES | RECOMMENDATIONS |
|---|---|
| PRIORITY 5<br>Strengthen innovation capability and lead in workforce reform and e-Health. | RECOMMENDATION 7<br>That Austin Health progresses the development of telemedicine capability at each of Austin Health's campuses, through the:<br>a) Roll out of telemedicine hardware to all specialist clinic locations<br>b) Adoption of an appropriate software solution<br>c) Development of workflows that support data collection including consent and billing for use of telemedicine in specialist clinics |
| | RECOMMENDATION 8<br>That Austin Health continue to progress its workforce reform agenda, with a focus on:<br>a) Developing advanced practice and assistant roles<br>b) Medical workforce reform that supports service model reform in relation to patients with multiple or complex chronic conditions<br>c) A review of the balance between vocational medical trainee and service needs |
| PRIORITY 6<br>Support primary care to keep people well in the community. | RECOMMENDATION 9<br>That Austin Health works with its primary care partners to develop and pursue a joint strategy to keep people well and out of hospital – especially those with chronic and complex conditions or chronic mental illness. |
| PRIORITY 7<br>Work with other acute health services for appropriate regional service mix and formalised referral pathways. | RECOMMENDATION 10<br>That Austin Health pursues partnerships with other acute health services for appropriate regional service mix and formalised default referral pathways. |

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APPENDIX 1:

# Austin Health Strategic Services Plan: Review of Progress

| RECOMMENDATION | STATUS | COMMENT |
|---|---|---|
| 1. That Austin Health's key role is to provide:<br>• Complex tertiary and state-wide services across inpatient, outpatient and emergency settings, with an explicit clinical focus on neurosciences, cancer, metabolic medicine, respiratory/cardiovascular services, hepatobiliary services, mental health, spinal injury and rehabilitation services;<br>• Integrated strong education and research programs<br>• An appropriate volume of community hospital-type services | In place | • Subsequent planning has reinforced this role<br>• Service developments in other health services has threatened our role in some specialists services (i.e. Victorian Spinal Cord Service, and the Acquired Brain Injury Unit) and prompted the need for periodic review of specialist services to ensure service sustainability |
| 2. That Austin Health continues to develop its existing state-wide services and the proposed intestinal failure/ transplantation service, but only develops additional state-wide services if there is an unequivocal rationale based on strategic fit, financial and clinical sustainability and relevance to existing state-wide services. | In place | • This principle has been applied in subsequent service planning (e.g. Ventilation Weaning Unit and Cancer Services) |
| 3. That Austin Health and the Department of Human Services work together to develop sustainable activity and funding models for state-wide services. | Good progress | • Good progress, will continue |
| 4. That Austin Health ensures quality community hospital-type services are provided to its primary catchment population by: | | |
| • continuing to provide a balanced mix and appropriate volume of such services | Achieved | • This principle has been consistently applied |
| • increasing self -sufficiency in its primary catchment particularly for breast surgery, ear, nose and throat and head and neck surgery, endocrinology, haematology, immunology and infections | Achieved | • Achieve overall and for each service specified |
| • working with other providers, particularly Northern Health, to facilitate the delivery of community hospital-type services in the most appropriate locations, taking into account community needs and best use of public hospital infrastructure | Not achieved | • With the exception of paediatric surgery, collaborative work with Northern Health has stalled due to recent major internal changes at Northern Health |

| RECOMMENDATION | STATUS | COMMENT |
|---|---|---|
| 5. That Austin Health continues to offer services to Victoria's veterans and their families, and in particular continues its focus on trauma-related mental health services and the development of the Centre for Trauma Related Mental Health and the Health and Rehabilitation Centre. | Achieved | |
| 6. That Austin Health continues to work with the Department of Human Services to develop a sustainable general paediatric service in accordance with the Paediatric Network. | Achieved in part | • Paediatric surgery now provided from Northern Health |
| 7. That Austin Health considers the feasibility of transferring its 60 high care residential aged care bed licences to a not-for-profit provider to develop a new facility on the HRH site. | Study completed. Alternative outcome achieved | • Feasibility study completed<br>• Preferred outcome of licence transfer to a not-for-profit provide, not achieved. Alternative outcome of closure of Darley House scheduled for late 2016, with government support |
| 8. That Austin Health reviews its model of care of older patients with chronic and complex conditions, including surgical patients with complex medical conditions, and considers the development of defined care pathways and a hospitalist model of care to address the increasing demand from this group of patients. | Some progress | • Strategies focused on those with chronic and complex conditions – not age specific<br>• Perioperative medical model now developed at the surgery centre<br>• Health Links pilot to commence<br>• Older patient specific focus not pursued |
| 9. That Austin Health works with DHS to pursue reforms consistent with the Victorian Mental Health Strategy, Because Mental Health Matters, including: | | |
| • Development of a youth mental health service model with Northern Health and St Vincent's Hospital | Not achieved | • Austin Health Mental Health Plan (2010) specifies a youth service model for Austin Health. It has not been implemented |
| • An expanded and relocated secure extended care unit (SECU) collocated with forensic medium security beds and an appropriately sized Community Care Unit (CCU) (22 beds) in a 122 bed Mental Health Rehabilitation Centre | Achieved in part | • SECU unit expansion and relocation achieved<br>• CCU unit (now called CRU) achieved<br>• Specific forensic beds were not achieved but some are incorporated into CRU |
| • Establishment of a Prevention and Recovery Care unit of 10 beds which may be collocated with the Mental Health Rehabilitation Centre | Achieved | • PARC unit established |
| • Review of aged mental health services in partnership with Northern Health and Melbourne Health | Not achieved | • Will continue to work with DHHS to pursue a *whole of life* Mental Health service |
| 10. That Austin Health substantially reforms its outpatient services to ensure they are focused on the provision of services that require the resources and expertise of a tertiary hospital and the provision of secondary care not otherwise available to the local community. | Moderate progress | • Some clinics (for example orthopaedics and breast surgery) have made significant advances in triaging patients along these lines and partnering with primary care in review and appropriate referral pathways |
| 11. That Austin Health brings together under a single policy framework and management structure the diverse range of programs and services designed to promote and support care in nonhospital settings, and continues to demonstrate innovation and leadership in their development. | Achieved | |

| RECOMMENDATION | STATUS | COMMENT |
|---|---|---|
| 12. That Austin Health works with the Department of Human Services to participate in a whole-of state strategy to ensure rural and regional Victorians have appropriate access to tertiary hospital services. | Not achieved | |
| 13. That Austin Health determines the interest of selected rural and regional health services in receiving educational and clinical support through formalised partnerships and other collaborations supported by sophisticated telecommunications links. | Not achieved | • This has occurred in some specialties (Victorian Spinal Cord Service and Victorian Respiratory Support Service) – not health service-wide |
| 14. That Austin Health remain focused on its core role as a provider of hospital-based services, and, where gaps in community-based services are identified, it supports community-based providers in service planning, clinical service delivery, education and research, with the objective of participating collaboratively in a balanced and integrated hospital and community service system which works in a coordinated fashion to deliver quality care in appropriate settings. | Limited progress | • The principle has been abided by in subsequent service planning<br>• Working in partnership with primary care has been limited |
| 15. That Austin Health explores with the Mercy Hospital for Women the potential to enhance existing services, in particular paediatric services, emergency services and oncological services, for the benefit of the patients of both organisations and to meet changing demand for these services. | Moderate progress | • Austin Health meets regularly with Mercy Health. Mercy Radiation oncology now all provided at Austin and advanced discussions on transition of all medical oncology. Limited progress in paediatrics and in proposal for common front door of Emergency Department (despite management support)<br>• A number of service stream plans (Radiology Services Plan, Cancer Services Plan and Emergency Department Services Plan) include a focus on partnership with Mercy Health |
| 16. That Austin Health continues to work with Northern Health towards formally agreeing principles for collaboration. | Limited progress | • Preliminary meeting between Austin Health and Northern Health, but no material progress, due to management and Board changes at NH |
| 17. That Austin Health support the development of a DHS led regional strategic plan for renal dialysis services which is patient-focused | Achieved | |
| 18. That Austin Health continues to provide leadership in cancer services and will pursue coordinated planning and improvement of cancer services with Eastern Health, Northern Health and Mercy Hospital for Women and partnerships that seek to improve access to, and quality of, palliative care for people both within and outside its catchment. | Limited progress | • Cancer Services Plan (2015) has a focus on this |
| 19. That as Austin Health services grow and develop, opportunities are sought to develop clinical service, education and research initiatives in partnership with Warringal Private Hospital for the benefit of both organisations and the community. | Limited progress | • Currently pursuing opportunities for provision of ward-based pathology service |

| RECOMMENDATION | STATUS | COMMENT |
|---|---|---|
| 20. That Austin Health maintains its strategic links between research, education and clinical care and develops an organisation-wide strategy for clinical research. | Achieved in part | • New developments in academic physiotherapy, the ONJ Centre and maturation of the ALS Board<br>• Clinical research training programs and clinical trials frameworks developed<br>• No overarching clinical research strategy completed |
| 21. That to support ongoing excellence in clinical care, Austin Health's model of embedding clinical and academic links firmly within its organisational structure is maintained in the profession of medicine, extended in the profession of nursing and developed in the allied health professions. | Achieved in part | • Well maintained in medical appointments<br>• Melbourne University Chair of physiotherapy created, additional academic nursing leadership positions with Latrobe University |
| 22. That Austin Health reviews its human resources and professional education and training programs and considers the feasibility of developing an integrated, whole-of-organisation strategy for workforce development, inter-professional education and role redesign, and a supporting cross-disciplinary organisational leadership structure. | Achieved in part | • Inter-professional education achieved<br>• Significant progress with role redesign particularly in nursing.<br>• Development of whole of organisation workforce strategy not achieved |
| 23. That Austin Health continues to prioritise workforce role redesign, focusing on roles which extend scope of practice for non-medical professionals, with an objective of becoming a recognised leader in this area. | Good progress | • Leadership role remains and programs such as nurse endoscopy and Health Assistants strongly led by Austin. Program needs some refocus given direction of current government |
| 24. That Austin Health undertakes a *stocktake* of its current investment in clinical data management and considers developing a policy framework and strategy to enhance its organisation-wide capability in supported clinical decision-making, clinical data management, epidemiology and biostatistics. | Good progress | • Demonstrating good leadership in clinical informatics<br>• Developed of Research Data Warehouse will be a major advance |
| 25. That Austin Health continues its commitment to extending its use of electronic medical records through support of the DHS HealthSMART initiative. | Good progress | • Demonstrating leadership |
| 26. That Austin Health identifies opportunities for investment to refresh basic information technology infrastructure, to support new clinical systems and to enable the introduction of new technologies to support new service initiatives and out-of-hospital care. | Significant progress | • Information Technology plan and PC refresh program on track |
| 27. • All Austin Health inpatient and outpatient services currently provided on the Austin Hospital, HRH and RTRC sites are consolidated on the Austin Hospital and HRH sites | Not achieved | • Consolidation onto two sites not achieved<br>• Limited support from DHHS to progress |
| • All time critical, urgent and high acuity services are provided from the Austin site | In place | |
| • Sub-acute and rehabilitation services are consolidated on the HRH site | Not achieved | |
| • Elective surgical and planned care services and services which are unlikely to require intensive care, high dependency care or access to technologies which can only be provided on the Austin Hospital site are provided from the HRH site | Significant progress | • Further work needed |

| RECOMMENDATION | STATUS | COMMENT |
|---|---|---|
| 28. That Austin Health undertakes a *stocktake* of its outpatient services and determines the most appropriate site for their provision in accordance with clearly articulated criteria based on clinical inter-dependencies. | Some progress | • Some progress with consolidation of oncology clinics at Olivia Newton-John Cancer Wellness and Research Centre, and part relocation of outpatient services at HRH<br>• Further work needed |
| 29. That strategic master plans are developed for the Austin Hospital and HRH sites, addressing the strategic directions identified in this Plan. | Achieved | |
| 30. That the current physical constraints on operating theatres, medical imaging, pathology and respiratory laboratories be addressed as a matter of priority, to enable efficient patient care. | Moderate progress | • Full redevelopment of Radiology – to improve service model and provide capacity for MRI<br>• Pathology redevelopment almost complete, except for Microbiology<br>• Respiratory service consolidation planned and funded internally, but not yet implemented<br>• No progress with the theatre redevelopment |
| 31. That the capacity of Austin Health to accommodate the growing demand for its emergency department services be addressed as a matter of urgency. | Significant progress | • Short Stay Unit redevelopment funded and planned but not yet implemented |

APPENDIX 2:

# Role Delineation of Austin Health Services

The NSW guide to role delineation of health services (NSW Health Department, 2002) provides a guide to the support services, staff profile, minimum safety standards and other features required to ensure that clinical services are provided safely and appropriately supported. Up to six role levels are defined for each clinical service type, with critical features defined for each.

The NSW guide has been used to provide a profile and outline of the current role for our clinical services at each Austin Health campus (*Table 30*). Notes have been provided where one or more features required of the designated role level are absent. In some instances these features are provided through service networking, so not a cause for concern. For example, Pharmacy provides a consolidated manufacturing and on call service to the three campuses of Austin Health. In some instances, the absence of a required feature may point to a service risk.

A comparison of role levels for Austin Health with those of neighbouring health services, points to the required reach of the service. For example, if respiratory services are role level 6 at Austin Health and role level 5 at neighbouring health services, it indicates a likely inflow of some patients from neighbouring health services to Austin Health for some specialist services.

Role delineation information for Austin Health clinical services and neighbouring health services will be used to inform future service development.

| CLINICAL SERVICE | AUSTIN | HRH | RTRC | NOTES |
|---|---|---|---|---|
| Pathology | 6 | 4 | 1 | • A number of functions of the pathology service are consolidated on the Austin Hospital site and provided to other campuses – including the range of tests appropriate for role level 6<br>• Strict application of role delineation criteria makes HRH role level 2, but a designation of role level 4 is warranted given the:<br>– Close proximity to the Austin Hospital campus<br>– Regular transport of pathology specimens to the Austin Hospital laboratory<br>– Range of tests done and electronically reported from Austin Hospital |
| Pharmacy | 6 | 4 | 3 | • A number of the functions of the pharmacy are consolidated on the Austin site and provided to the other campuses e.g. sterile manufacturing, cytotoxic manufacturing, medicines information, quality use of medicines, on call service, drug purchasing etc.<br>• Eight pharmacies provided across three campuses |
| Medical Imaging | 6 | 4 | 2 | |
| Molecular Imaging and Therapy | 6 | 4 | - | • A number of functions are consolidated on Austin site, e.g. cyclotron/chemistry laboratories/radiopharmacy, PET Centre, inpatient beds |
| Anaesthetics | 6 | 4 | - | • HRH does not have 24 hour availability as the TSC is specifically a daytime only facility |
| Intensive Care | 6 | 3 | - | • Provision of escalation of unwell patients at HRH is through the Medical Emergency Response call response |
| Coronary Care | 6 | 1 | 1 | |
| Operating Suite | 6 | 4 | - | • HRH does not have 24 hour availability as the TSC is specifically a daytime only facility |
| | | | | |
| **Core Service** | | | | |
| Emergency Medicine | 5 to 6 | - | - | • Level 6 except does not have *capacity for management of frequent major trauma* and *advanced subspecialty registrar on site 24 hours* |
| **Medicine** | | | | |
| General Medicine | 6 | - | - | |
| Cardiology | 6 | - | - | |
| Dermatology | 6 | - | - | |

| CLINICAL SERVICE | AUSTIN | HRH | RTRC | NOTES |
|---|---|---|---|---|
| Endocrinology | 6 | - | - | |
| Gastroenterology | 6 | - | - | |
| Clinical Haematology | 6 | - | - | |
| Immunology | N/A | | | |
| Infectious Diseases | 6 | - | - | |
| Medical Oncology | 6 | - | - | |
| Neurology | 6 | - | - | |
| Radiation Oncology | 6 | - | - | • Ballarat Austin Radiation Oncology Centre – 5 |
| Renal Medicine | 6 | 4 | - | |
| Respiratory Medicine | 6 | - | - | |
| Rheumatology | 5 to 6 | - | - | |
| **Surgery** | | | | |
| General Surgery | 6 | 4 | - | • Assessment is for all general surgical units |
| Cardiothoracic Surgery | 6 | - | - | |
| Day Surgery | 4 | 4 | - | |
| Ear, Nose and Throat | 6 | 4 | - | |
| Gynaecology | - | 3 | - | |
| Neurosurgery | 6 | 4 | - | |
| Opthalmology | - | 5 | - | • Provides consultative service for inpatients at Austin Hospital |
| Plastic Surgery | 6 | 4 | - | |
| Orthopaedic Surgery | 6 | 4 | - | |
| Urology | 6 | 4 | - | |
| Vascular Surgery | 6 | - | - | |
| | | | | |
| **Maternal and Child Health** | | | | |
| Paediatric Medicine | 4 to 5 | | | • Meets level 4 criteria except no designated adolescent area and no onsite access to audiology (there are several local providers)<br>• Has some elements of level 5 (paediatric subspecialty, paediatric registrar 24 hrs, under and post grad teaching and research) |
| | | | | |
| **Integrated Community and Hospital Services** | | | | |
| Adult MH (inpatient) | 6 | | | |
| Adult MH (community) | 6* | | | • Located at Hawdon street, Heidelberg* |
| Child/adolescent MH (inpatient) | 6 | | | |
| Child/adolescent MH (community) | 5 | | | |
| Older adult MH (inpatient) | - | | | |

| CLINICAL SERVICE | AUSTIN | HRH | RTRC | NOTES |
|---|---|---|---|---|
| Older adult MH (community) | - | | | • Bundoora Extended Care Centre (BECC) is funded to provide this service |
| Drug and Alcohol services | 5 | | | • There is a large Methadone programme but not such a well-developed inpatient service |
| Geriatrics | 4[A] | 5[A] | - | • [A]Service level per Victorian Department of Health capability framework for sub-acute service system (Department of Health, 2012) – Level 5 is the highest level<br>• Role level 4 at Austin Hospital is for limited clinical services only – currently orthogeriatrics only – jointly managed by GEM and orthopaedics |
| | 4 | 6 | - | • Austin Hospital meets some Level 5 criteria – as it provides direct care to some patients |
| Palliative care | 6 | | | • Consultation service is provided to HRH and RTRC |
| Rehabilitation | - | 4[A] | 5[A] | • Service level per Victorian Department of Health capability framework for sub-acute service system (Department of Health, 2012) – 5 is the highest level[A] |
| | - | 4 | 6 | • However criteria of access to 24 hour medical cover on RTRC site or within 10 minutes cannot be guaranteed<br>• Rehab at HRH is directed by a specialist with accredited training in rehab medicine – but not specialist in rehab medicine<br>• Support services – such as pathology, pharmacy, diagnostic services, etc. are not provided at the specified levels |
| Sexual assault services | | | | |
| **Community-based Health Services** | | | | |
| Genetics | 5 | | | • Consultation service is provided to HRH and RTRC |

APPENDIX 3:

# Projections Methodology

## INPATIENT SEPARATIONS AND BED PROJECTIONS

Inpatient activity was forecast using the Department of Health Inpatient Forecasting Model 2014 (Department of Health, 2014), which used the following process:

- Adding the population of the Murray Statistical Division (NSW) to the Victorian population (to provide more accurate utilisation for the Albury-Wodonga region)
- Forming groups according to the variable combinations for each year, from the past ten years of data
- Calculating the utilisation rate (separations per 1,000 population) for each forecast variable combination and each year
- Projecting the utilisation rate to each of the forecast years
- Calculating the average length of stay (ALOS) for each forecast variable combination and each year
- Projecting the ALOS into the future using a logarithmic, linear or exponential smoothing model depending on the data distribution
- Review of projected utilisation rates and ALOS
- Calculation of forecast separations (by multiplying projected utilisation rates by population projections), and calculation of forecast bed days (by multiplying forecast separations by projected ALOS).
- Application of sub-acute methodology to refine the sub-acute forecasts for CRGs Level 1 Rehabilitation, Level 2–3 Rehabilitation and GEM
- Forecasting of emergency/non-emergency proportions for each forecast variable combination
- Forecasting of campus proportions for each forecast variable combination of CRG and stay type
- Apportionment of state-wide forecasts to LGA and hospital campus.

The forecasting model used the following datasets:

- Victorian Admitted Episodes Dataset (VAED) historical data for the years 2000–01 to 2012–13
- VAED Linked Dataset for 2010–11 to 2012–13 to determine transfer rates from acute care to sub-acute care in order to produce the sub-acute forecasts
- Australian Bureau of Statistics (ABS) Estimated Resident Population data for Australia for 2000–2011
- Department of Transport, Planning and Local Infrastructure population projection data for future population for the years 2012–2027
- ABS population projections for the forecast years (for interstate populations)
- NSW Department of Planning and Environment local government area population projection (April 2014) for the forecast years.

Further analysis was performed to determine future bed requirements, using the number of days open per annum for clinical areas at Austin Health. The following occupancy rates were applied:

- ED SSOU beds – 250%
- Other multi-day beds – 95%
- Same day beds – 200%.

The projections methodology produces inaccurate results when applied to settings with prolonged lengths of stay. The SECU projections were vastly overestimated when applied, so have been adjusted down to 25 beds (existing capacity) to the years 2021–22 and 2026–27.

## EMERGENCY DEPARTMENT PROJECTIONS

ED activity was forecast using the Department of Health EM14 (Department of Health and Human Services, 2015), and included the following steps:

- Cleaning and structuring historic Victorian Emergency Minimum Dataset (VEMD) data
- Calculating ED catchment populations
- Calculating presentation rates
- Projecting presentation rates into the future using a variety of time series models
- Capping presentation rates
- Calculating projected numbers of presentations
- Developing a base file of unit records derived primarily from the base year
- Assigning a variable number of presentations to each row in this base file in order to apportion presentations to variables not directly projected.

EM14 data was sourced from the VEMD historical data (2000–01 to 2012–13) and was projected to the data years 2016–17, 2021–22 and 2026–27.

Projections were also based on the ABS Estimated Resident Population by statistical Area 2 years 2001–2011, and the Victoria in the Future (2014) population projections.

## OPERATING SUITE PROJECTIONS

Operating theatre projections were based on the methodology used by Northern Sydney Central Coast Health, and follow the following basic steps:

- Historical Austin Health theatre activity for the period 1 July 2012 to 30 June 2015 was analysed to estimate the number of operations and average duration by:
  - Theatre type
  - Theatre campus
  - Urgency – Emergency/ Non-emergency
  - Session type – in-hours/ out-of-hours
- Theatre utilisation rates per 1,000 admissions for each combination of variables in the previous step were derived from Austin Health inpatient admissions over the same period by:
  - Admission campus
  - Admission urgency
  - CRG
- Utilisation rates were applied to the historical and projected inpatient activity based the DHHS Inpatient Projection Model 2014 to project theatre activity to give estimated theatre hours by:
  - Theatre type
  - Campus
  - Urgency
  - Session type
- Estimated theatre hours were converted to number of theatres based on benchmarks in the NSW methodology for operating hours per day, days per week:
  - 2,340 hours per theatre per year for emergencies
  - 2,070 hours for elective
  - 1,840 hours for endoscopy and procedures
- The internationally recognised standard of 80% utilisation for all theatre types was applied. The number of theatres required was based on the projected elective and emergency *in hours* forecast hours.

The theatre data provided a number of challenges for this analysis:

- Procedure durations are subject to numerous errors in the underlying data
- *Turnover* time (i.e. time between completion of one operation and the start of the next in the same theatre session) is not explicitly recorded in the theatre data. Estimates were based on a manual review of data
- Operating suite data included anaesthetic start time to the time leaving the operating suite, which over-estimated the theatre hours required. To mitigate this, a further 0.85 ratio was applied to operating suite hours to make the value in the baseline year (2012–13) consistent with the actual number of theatres available that year
- Austin Health theatre data used to calculate utilisation rates is based on the period 2012–13 to 2014–15. Over this period, there has been a strategy to move more elective surgery to TSC that may distort the projections when looking at the two campuses separately.

Electronic copies of this plan
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