



SOUTH EAST NSW REGIONAL TRAINING HUB,  
RURAL CLINICAL SCHOOL, ANU MEDICAL SCHOOL

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# Medical Workforce Plan

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Final Report  
October 2021



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## LIST OF ABBREVIATIONS

ABS	Australian Bureau of Statistics
AGPT	Australian General Practice Training (program)
AIHW	Australian Institute of Health and Welfare
ANU	Australian National University
ASR	Age-Standardised Rate
CMO	Career Medical Officer
DPA	Distribution Priority Area
DWS	Districts of Workforce Shortage
ED	Emergency Department
EPC	Enhanced Primary Care
FTE	Full-Time Equivalent
GP	General Practitioners
HMO	Hospital Medical Officer
HWNA	Health Workforce Needs Analysis
IRSD	Index of Relative Socio-economic Disadvantage
LHD	Local Health District
LGA	Local Government Area
MBS	Medical Benefits Schedule
MMM	Modified Monash Model
MPS	Multi-Purpose Service
NHWD	National Health Workforce Dataset
NSW	News South Wales
O&G	Obstetrics & Gynaecology
PGY	Post-Graduate Year
PHIDU	Public Health Information Development Unit
PIP	Practice Incentive Program
PPH	Potentially Preventable Hospitalisations
RACP	Royal Australasian College of Physicians
RDN	Rural Doctors Network
RHMT	Rural Health Multidisciplinary Training
RHOF	Rural Health Outreach Funding
SA	Statistical Area
SEIFA	Socio-Economic Index for Areas
SE NSW	South-East New South Wales
SNSW LHD	Southern NSW LHD
VMO	Visiting Medical Officer

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## Executive summary

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The Australian National University (ANU) Medical School, Rural Clinical School established the South-East New South Wales Regional Training Hub (SE NSW RTH), to create opportunities for students to continue pre-vocational and vocational training in rural Australia and assist students and junior doctors with rural career support, and assistance with rural internship, resident and registrar training positions.

The SE NSW RTH commissioned Aspex Consulting to undertake a medical workforce plan to identify factors influencing demand and the supply for the region, to identify priority gaps and to recommend relevant strategies to achieve a sustainable medical workforce in the future. Although this report was commissioned by the SE NSW RTH, key workforce supply and demand statistics are reported for the SE NSW RTH as well as for SNSW LHD. This is in recognition of the inter-dependent nature of medical workforce planning with both organisations having a critical role in building an effective medical workforce supply pipeline.

### *Geography*

The SE NSW region comprises nine LGAs, with six in the north of the catchment and three in the south:

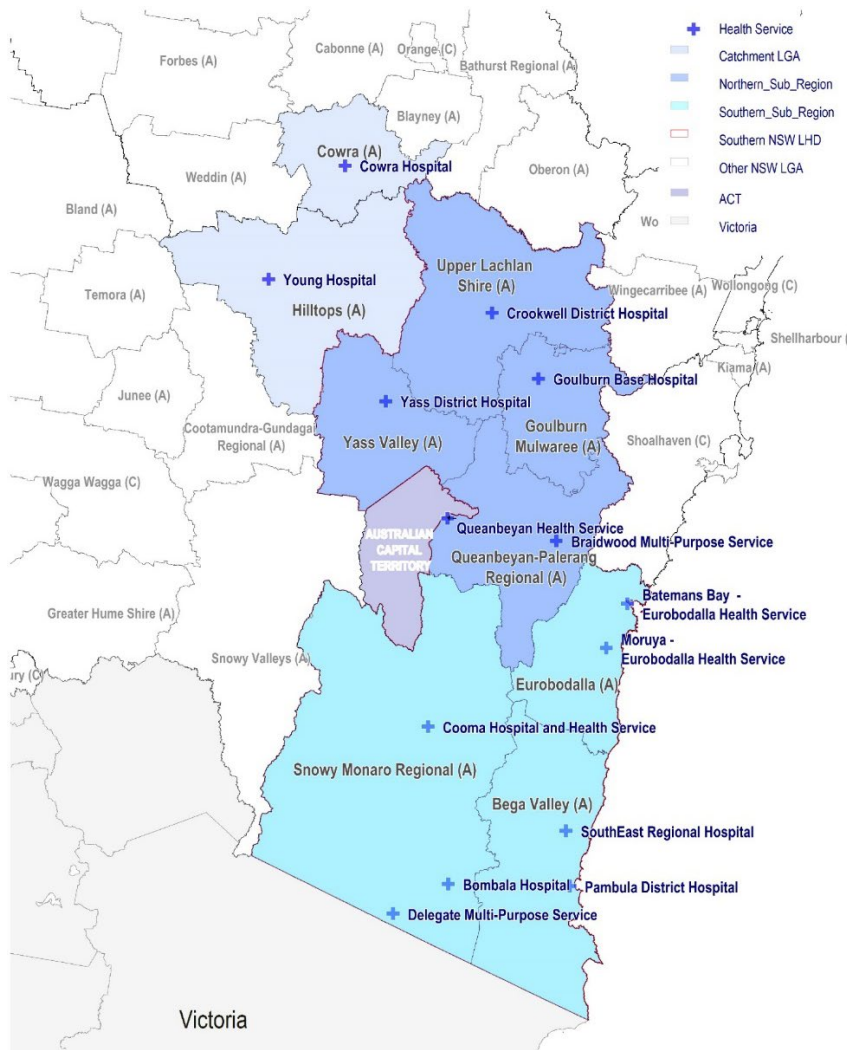
- North
  - ▶ Cowra
  - ▶ Hilltops
  - ▶ Goulburn-Mulwaree
  - ▶ Queanbeyan-Palerang Regional
  - ▶ Upper Lachlan
- South
  - ▶ Bega Valley
  - ▶ Eurobodalla
  - ▶ Snowy Monaro

The Southern NSW Local Health District (SNSW LHD) falls within the SE NSW RTH region. It has seven LGAs and shares the same three LGAs in the south. In the North, the LHD has: Goulburn-Mulwaree; Queanbeyan-Palerang Regional; and Upper Lachlan. (Cowra Shire falls within the Western NSW LHD and the Hilltops Shire within Murrumbidgee LHD).

It is apparent from the map that both SE NSW RTH and SNSW LHD adjoin the ACT. This has a very substantial impact on the workforce supply and demand in the region, given the proximity of the most populous LGA, Queanbeyan-Palerang Region to Canberra.



## Map of the SE NSW RTH and SNSW LHD catchment



The two major acute hospitals in the region are Goulburn Base Hospital, located in the north of the region in the Shire of Goulburn and the South East Regional Hospital, located in the Shire of Bega Valley in the south. Smaller district (group 2) and community hospitals are located in other parts of the region and there are three multi-purpose services.

The SE NSW RTH falls within the broader South Eastern NSW PHN which includes seven of the nine LGAs of the RTH and also includes additional LGAs to the north: Wollongong, Shellharbour Kiama, Shoalhaven and Jervis Bay.

### *Socio-demographic context*

The catchment population grew by an average of 0.86% per annum between 2015 and 2019, significantly less than the NSW average 1.52% per annum. LGAs in the north of the catchment grew at twice the rate (1.0% per annum) of LGAs in the south of the catchment (0.5% per annum). The fastest growing LGA, and the most populous, is Queenbeyan-Palerang Regional with a per annum growth rate of 1.69% per annum.

Whilst overall population growth for the region is low, its population is ageing. Over one fifth (21%) of the population is aged 65 years and over higher, similar to the rural NSW aged population share but much higher than for the state as a whole (16%).

Forecast population growth is minimal, with a stable population projected between 2021 and 2041. However, there will be a projected *increase* of 6,408 residents in the northern part of the region offsetting a projected *decrease* of 5,966 residents in the southern sub-region. Despite static overall population, population ageing is substantial, with 1.6% per annum increase forecast in the population aged 65 years and over, increasing the proportion of this age group from 21% in 2019 to 31% in 2041. There are projected population declines in all other age groups, 0-14, 15-44 and 45-64 years.

For five of the LGAs in the region, the average socio-economic status is on a par with or higher than the state as a whole, and four LGAs have lower socio-economic status: Cowra; Hilltops; Goulburn Mulwaree; and Eurobodalla. These social determinants of health influence burden of disease in the region. The LGAs with above average prevalence of chronic disease include Cowra, Hilltops and Goulburn-Mulwaree. Social determinants also influence demand for health services. Goulburn-Mulwaree SA3 had the highest rate of GP MBS service use at 522.0 per 100 people with Queanbeyan SA3 the lowest at 435.2 in 2017-18. Goulburn-Mulwaree SA3 also had the highest rate of potentially preventable hospital admissions in 2017-18 at 3,041 per 100,000 population compared to one half that rate (1,513) in the South Coast SA3.

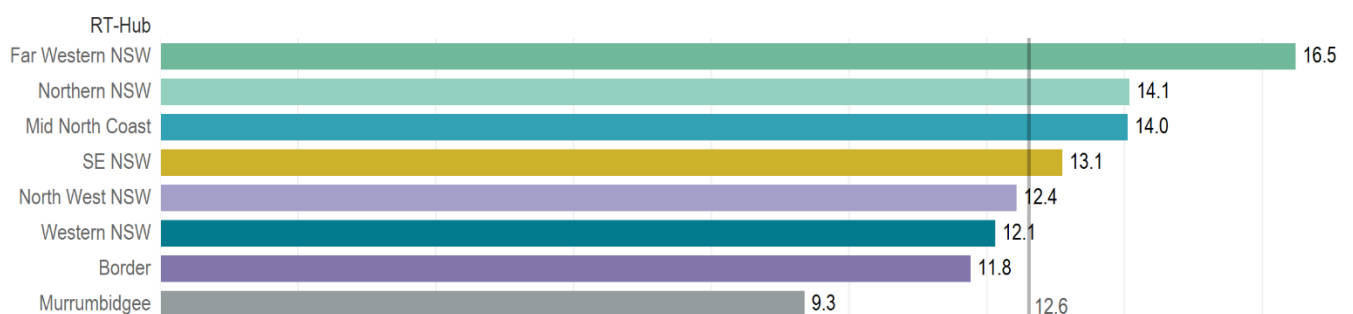
### GP workforce supply

In total, the GP workforce supply within the SE NSW RTH region comprised a headcount of 318 GPs (288 FTE) and the SNSW LHD a supply of 279 headcount (252.5 FTE) in 2019. Compared to other Regional Training Hubs, the SE NSW RTH region has an above average supply of GPs based on workforce supply data reported to the National Health Workforce Dataset (NHWD) in 2019.

The SE NSW region's GP supply represents a headcount of 13.1 GPs per 10,000 population, higher than the rural NSW average of 12.6. On this measure, the SENSW catchment has a slightly higher per capita supply of GPs – a notional additional 11 GPs compared to the rural NSW average.

### GPs per 10,000 population, regional training hubs, GP headcount, 2019

#### GPs per 10,000 population



The per capita supply of GPs is higher in the south of the SE NSW RTH catchment at a headcount of 12.7 GPs per 10,000 population compared to 11.3 GPs per 10,000 population in the north. The LGA with the *lowest* GP per capita supply is Queanbeyan at 8.9 GPs per 10,000 population. This may reflect the fact that this LGA has the largest population and its rate of population growth is also the highest, with GP supply potentially lagging population growth. Or it may represent a statistical reporting artefact with the reported GP workforce potentially understated in the NHWD for geographic areas such as Queanbeyan where GPs may travel in or out of the LGA for work purposes. (The registration survey of medical practitioners reported through to the NHWD captures the principal practice location and would not identify GPs working fractional appointments in another geographic area.)

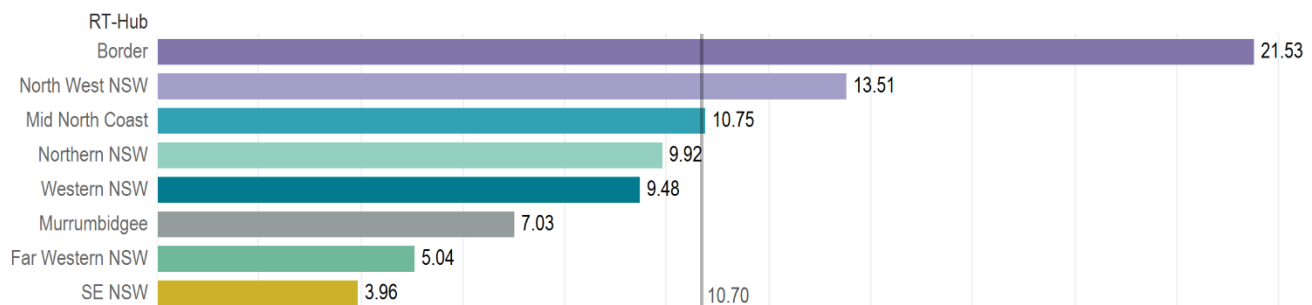
### Specialist workforce supply

Based on the NHWD, there was a headcount of 96 specialists (103 FTE) in the SE NSW RTH catchment in 2019, and for the SNSW LHD a headcount of 93 specialists (100 FTE).

For the SE NSW RTH region, this supply represents a population average of 4.0 specialists per 10,000 population. This indicates a very substantial under-supply of specialists compared to the rural NSW average of 10.7 specialists per 10,000 population. The 'expected' number of specialists in the SE NSW catchment based on the NSW average would be 257 (275 FTE), a gap of 161 specialists. Given that the reported supply of specialists in the NHWD data-set does not include VMO and locum specialists where the principal practice location is outside the catchment, this estimation of the workforce gap is not considered robust, is likely to be overstated and should be treated with caution.

### Specialists per 10,000 population by regional training hub, headcount, 2019

Specialists per 10,000 population



As would be expected, there is a higher per capita supply of specialists in the LGAs with the largest hospitals, namely Goulburn-Mulwaree (8.03 specialists per 10,000 population); and Bega Valley (8.70 specialists per 10,000 population). Whilst there is also a high relative supply in the Upper Lachlan Shire (8.69 specialists per 10,000 population), the actual number of specialists is relatively small at 7.

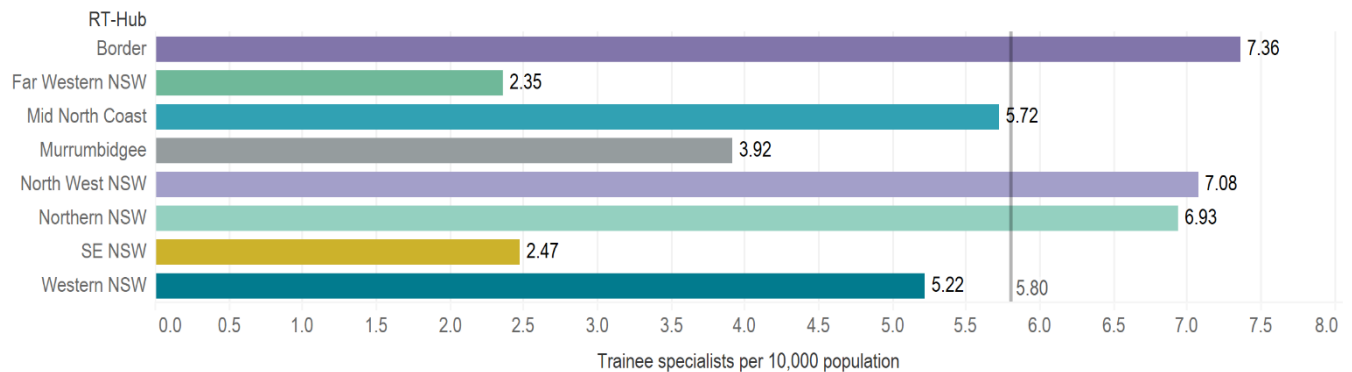
To supplement the workforce data available from the NHWD, Aspex requested medical workforce data from the SNSW LHD in a survey undertaken of all LHD health services in the first half of 2021. Based on this survey, the number of specialists in the LHD was estimated to be 183.5 FTE (with adjustments to account for hospital and out-of-hospital FTE). This survey included all specialists employed by the LHD across all specialties, inclusive of salaried, VMO and locum positions.

### Trainee workforce supply

Based on the NHWD, there was a headcount of 60 trainees (both specialists and GPs) in the SE NSW RTH catchment in 2019, and the SNSW LHD a headcount of 52 trainees. This represents a very low supply of medical trainees in the SE NSW RTH catchment at 2.47 trainees per 10,000 population, just under one half the rural NSW rate of 5.80. Compared to the current supply of 60 trainees in 2019 in the SENSW catchment, the expected number of trainees would be 140.6, yielding a 'gap' of 80.6.

## Trainees per 10,000 population by regional training hub, headcount, 2019

### Trainees per 10,000 population



As would be expected, there is a higher supply of the trainee workforce in the LGAs with the largest hospitals: Goulburn Mulwaree (3.85 trainees per 10,000 population) and Bega Valley (5.22 trainees per 10,000 population).

### Demand

The future demand for medical workforce in the SE NSW RTH has been projected through reference to current age utilisation rates for each LGA and population projections of each LGA age group over the next decade to 2031.

- GPs – demand projections show relatively stable future demand, with -0.02% per annum projected change, resulting in the same demand for the overall GP workforce as in 2019. There is modest demand growth of 0.22% per annum for GP services in the north of the SE NSW RTH catchment. This is projected to yield an increase in demand of 4.5 FTE between 2019 to 2031. By contrast, in the south there is a projected *reduction* in demand of 5.2 FTE, reflecting a reduction of -0.37% per annum between 2019 to 2031.
- Specialists – Projected changes in demand for the specialist medical workforce in the SNSW LHD catchment indicate a projected increase in demand of 0.77% per annum, yielding an expected increase of 17.8 FTE from 183.5 FTE in 2019 to 201.3 FTE in 2031.

### Workforce age and attrition

Just under one third (31%) of the SE NSW RTH GPs are aged 55 years and over. There are three LGAs with a somewhat higher proportion of GPs aged 55 years and over:

- Hilltops Shire, 38%;
- Bega Valley, 36%; and
- Upper Lachlan, 35%.

Workforce attrition has been modelled through reference to retirement intentions of the medical workforce from the National Health Workforce Dataset. Of the 97 GPs in the SE NSW RTH catchment aged 55 years and over, over one-third (36%) responded that they intended not to be working within the next five years.

There were three LGAs with very high attrition rates for GPs aged 55 years and over anticipated:

- Upper Lachlan Shire, 100%;
- Eurobodalla, 61%; and
- Cowra, 50%.

There was also a relatively high attrition rate anticipated for GPs aged 55 years and over at:

- Bega Valley, 38%; and
- Queanbeyan-Palerang Regional, 38%.

For specialists, 45% are aged 55 years and over. The attrition rate appears to be less challenging an issue with only 3 of the 45 specialists aged 55 years and over indicating they intend to withdraw from the workforce within 5 years. These 3 specialists intending to retire within 5 years are located in Bega.

### *Hospital market share analysis*

Hospital market share analysis provides an indicator of the extent to which patients are able to access the acute and subacute health services from within the region. It is a proxy indicator for the adequacy of medical workforce supply.

Overall, the SE NSW RTH region has a 64% market share for acute hospital separations, with 26% of separations treated in the ACT and 10% in out-of-catchment NSW hospitals.

Analysis of patient outflow from different parts of the Region shows that there is a much higher estimated market share for the south of the SE NSW RTH catchment (79%) than the north (53%).<sup>1</sup> Or in other words, there is higher outflow to the ACT from the north than the south. This is to be expected given the proximity of Queanbeyan to the ACT.

For the SNSW LHD, there is a 66% market share for acute hospital separations, with 25% of separations treated in the ACT and 9% in out-of-catchment NSW hospitals.

There are six high volume specialties that have a relatively low public hospital market share (less than 70%) and where the volume of patient outflow to the ACT from the SE NSW RTH is very high (more than 1,000 patient episodes per annum). These six specialties accounted for about one half (47%) of the 17,881 acute patient episodes treated in the ACT from the catchment in 2017-18.

### **Top six specialties by volume of outflow from SE NSW RTH to the ACT, 2017-18**

Specialty	ACT Health	Catchment hospitals	Out of catchm't NSW public hosps	Total public hospitals	Catchment market share
49 - Orthopaedics	2,205	2,753	776	5,734	48.0%
15 - Gastroenterology	1,314	3,373	399	5,086	66.3%
27 - Non Subspecialty Medicine	1,498	3,704	596	5,798	63.9%
54 - Non Subspecialty Surgery	1,102	2,415	449	3,966	60.9%
72 - Obstetrics	1,081	2,442	183	3,706	65.9%
52 - Urology	1,144	876	503	2,523	34.7%

### *Gap analysis*

The gap analysis has been based on three information sources:

- Relative workforce supply in the region compared to other rural NSW regions;
- Patient outflow from the region based on hospital self-sufficiency (or market share) analysis; and
- Qualitative feedback from discussions with stakeholders across the region.

<sup>1</sup> There is some imprecision in the calculation of market share rates for the north of the catchment because of the provision of data on a SA3 basis that does not directly match with the LGAs that delimit the boundaries of the SE NSW RTH for the SA3 of Lachlan Valley. Similarly, for the SNSW LHD, the SA3 of Young Yass encompasses Yass Valley which falls within the SNSW LHD and Hilltops Shire which falls within the Murrumbidgee LHD.

### GP gap analysis

The main finding from the gap analysis is that the region is currently well served with its GP workforce with above average workforce compared to rural NSW. Whilst Queanbeyan appears to have a below average supply, the qualitative feedback confirms that this LGA is well served and the Queanbeyan hospital, which operates on a GP VMO model, has a reasonable supply of GP proceduralists.

There are pockets in the region for which the GP workforce was identified as under pressure with current or imminent shortfalls through GP ageing and retirement including Upper Lachlan, Cowra, Cooma, Bombala, Bega Valley and Eurobodalla. The implications of these pressure points of fragile GP workforce supply are that there are difficulties in providing GP medical workforce coverage to smaller community hospitals and multi-purpose services.

The region as a whole is sought after as a destination for GP registrar training. Whilst there are some vacancies in the actual filled positions compared to available, this is a broader systemic issue, and the region has above average uptake of training places compared to other rural NSW areas.

### Specialist gap analysis

The region has a substantial under-supply of specialists estimated to be a gap of 52 FTE. This is most apparent in the north of the region which has an under-supply of 38 FTE compared to the south of the catchment with a deficit of 13 FTE.

The gap for acute medical and surgical specialists (including anaesthetists) is modelled at 26 FTE, for subacute, 4 FTE (including geriatric medicine, palliative care and rehabilitation medicine) and other specialties (including pathology, radiology and medical administration) 24 FTE.

The modelling combines the analysis of the workforce gap analysis based on the NHWD per capita comparisons to rural NSW rural areas as well as the hospital market share analysis. Relying solely on the per capita comparisons to rural NSW would yield a much higher workforce gap – this is not considered realistic, partly because the workforce supply data understates the availability of specialists who work on a VMO or locum basis. The hospital market share modelling overcomes this issue because it is based on the actual geographic locations of where patients receive acute and subacute hospital treatment – in the catchment hospitals or in ACT or other NSW hospitals.

### Consolidated estimate of specialist workforce gap by location, SNSW LHD, FTE, 2019

Workforce specialty	North			South			SNSW LHD		
	Current FTE	Expected FTE	Gap FTE	Current FTE	Expected FTE	Gap FTE	Current FTE	Expected FTE	Gap FTE
Medicine	15	21	-6	10	14	-4	24	35	-11
Surgery	13	22	-9	27	23	4	40	45	-5
O&G	4	6	-1	4	4	-1	8	10	-2
Paediatrics	5	7	-2	4	5	-1	9	12	-3
Ophthalmology	0	2	-2	2	2	0	2	4	-3
Anaesthetics	3	11	-8	7	11	-4	10	22	-12
Intensive Care medicine	8	7	1	2	2	0	10	9	0
Emergency medicine	17	13	4	19	14	6	36	27	9
<b>Acute Sub-total</b>	<b>65</b>	<b>89</b>	<b>-25</b>	<b>75</b>	<b>76</b>	<b>-1</b>	<b>139</b>	<b>165</b>	<b>-26</b>
Geriatric medicine	0	2	-2	2	2	0	2	4	-2
Palliative care	0	1	-1	0	1	-1	0	1	-1
Rehabilitation Medicine	3	3	1	0	2	-2	3	4	-1



	North			South			SNSW LHD		
<b>Subacute - sub-total</b>	<b>3</b>	<b>5</b>	<b>-2</b>	<b>2</b>	<b>4</b>	<b>-2</b>	<b>6</b>	<b>10</b>	<b>-4</b>
Psychiatry	18	14	4	6	7	-1	24	21	2
<b>Sub-total</b>	<b>86</b>	<b>109</b>	<b>-23</b>	<b>82</b>	<b>87</b>	<b>-5</b>	<b>168</b>	<b>196</b>	<b>-28</b>
Pathology, Radiology & other	6	22	-15	9	17	-9	15	39	-24
<b>Total</b>	<b>93</b>	<b>131</b>	<b>-38</b>	<b>91</b>	<b>104</b>	<b>-13</b>	<b>183</b>	<b>235</b>	<b>-52</b>

There are clearly broader service planning and resource distribution questions that are brought into focus by the findings of this gap analysis. Planning the future provision of the medical workforce in the region that is suitable for the needs of the catchment must inherently take into consideration core planning issues such as the extent to which elective surgery should or could be undertaken to a greater extent within existing hospitals within the region and whether service capability should be increased to address service gaps in more complex areas such as for interventional cardiology. In turn this raises questions such as the extent to which the existing infrastructure and capability levels of SNSW LHD hospitals could or should be enhanced to promote greater local access to both emergency and elective health care services. Priority areas for attention are identified in the recommendations.

### *Stakeholder themes*

Stakeholder feedback confirmed the quantitative findings, with many identifying that there were substantial challenges associated with the cross-border flow of patients from the region. To some extent, some stakeholders identified the relatively high outflow of patients to be simply a reflection of the geographic proximity of Canberra to Queanbeyan the region's most populous LGA. With a travel time of 20 minutes to Canberra Hospital from Queanbeyan, it is unsurprising that there is a relatively high flow of patients out of the catchment, particularly given that Queanbeyan Hospital operates predominantly on a GP VMO model and lacks staff specialists (with the exception of an emergency medicine physician) and relies on other specialists at Queanbeyan on a VMO basis.

The argument about geographic proximity is only part of the story. More fundamentally, feedback from stakeholders identified that there was a substantial opportunity to enhance the medical workforce within the north by reducing the reliance on locums and consolidating the availability of a permanent specialist workforce. This was considered vitally important to ensure the health service could build the effectiveness of its clinical services and enhance the workforce, trainee and patient experience across core service domains including those critical 24/7 services such as ED, ICU and anaesthetics.

Further strengthening of the Goulburn Base Hospital senior medical workforce model could be achieved through the appointment of clinical leads including for ED, ICU, medicine, surgery and integrated care services (covering subacute and ambulatory care).

In terms of the GP workforce, the main themes were around shoring up the GP model to enable the continued viability of primary medical care services for an ageing population. Further, the importance of GP proceduralists and GP rural generalists to assure the ongoing viability of smaller hospitals was identified as a key planning priority. Greater priority on strengthening training and career pathways for both GP proceduralists and GP rural generalists was emphasised. The expanded scope of practice for GP rural generalists was seen as relevant to the catchment across a wide range of areas including comprehensive primary care; procedural care; emergency care; and including secondary medical care in diverse areas such as geriatric care; palliative care; and mental health care.

The GP training organisation, GP Synergy, has commented that there is a high demand for registrars entering into GP training in the GP Synergy Southern NSW training sub-region. The number of AGPT available positions in the cohort is oversubscribed within the Southern NSW sub region each

year. GP Synergy has noted that this is unique to this sub-region and is likely attributable to its rural and general pathway mix of available training positions.

### *Recommendations*

There are six recommendations to address the workforce planning issues identified in this report.

- **Recommendation 1.** Prioritise GP succession planning to address imminent workforce attrition at identified localities (Upper Lachlan; Cowra; Cooma; Bombala; Eurobodalla; and Bega Valley) and pursue the development of innovative models for attracting and retaining GPs within the region.
- **Recommendation 2.** Establish training and career pathways to enable retention of GP proceduralists and GP generalists within LHD hospitals.
- **Recommendation 3.** Develop a LHD workforce strategy to reduce the high outflow of patients from the catchment to the ACT and to increase LHD public hospital market share to 70% in six high volume specialties:
  - ▶ Orthopaedics;
  - ▶ Gastroenterology;
  - ▶ General medicine;
  - ▶ General surgery;
  - ▶ Obstetrics; and
  - ▶ Urology.
- **Recommendation 4.** Develop a strategy to increase the size of the LHD's permanent senior medical workforce, reducing reliance on locums, with a particular focus on Goulburn Base Hospital, enabled by clinical leads appointed in priority specialties (emergency medicine, ICU, medicine, surgery and integrated care), with the aim of retaining a robust and engaged local medical workforce within the LHD and supporting high quality medical training placements; and
- **Recommendation 5.** Explore opportunities for joint appointments between the LHD and tertiary hospitals to support senior medical workforce roles in the region to strengthen interconnectedness and develop communities of practice.
- **Recommendation 6.** Strengthen the region's medical workforce planning capability and develop a dashboard monitoring system that can be updated quarterly to track the implementation of the recommendations of this report.



# 1. Background

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## Rural Health Multidisciplinary Training

The overarching aim of the Commonwealth funded Rural Health Multidisciplinary Training (RHMT) program is to improve the recruitment and retention of medical, dental, nursing and allied health professionals in rural and remote Australia. The RHMT program is a long-standing Australian Government initiative which funds the delivery of rural clinical training to medical, nursing, midwifery and allied health students. It supports a network of Rural Clinical Schools, University Departments of Rural Health and Dental faculties supporting extended rural placements.

## Regional Training Hubs

Regional Training Hubs were established as part of the Integrated Rural Training Pipeline for Medicine. The objectives for Regional Training Hubs are to:

- Improve the coordination of the stages of medical training to enable students intending to practise rurally to complete as much of their medical training as possible within regional and rural areas;
- Identify students with an interest in practising rurally and facilitate access to networked rural training opportunities at an early stage in their careers;
- Develop regional training capacity by supporting current supervisors of clinical training, assisting health services in obtaining accreditation for new training positions, and supporting local medical practitioners to become clinical supervisors;
- Strengthen existing, and develop new, connections with key stakeholders to improve the continuity of training for medical students/trainees within their region; and
- Identify regional medical workforce needs and use this information to prioritise activity.

To achieve this, Regional Training Hubs:

- Deliver training experiences for medical, dental, nursing and allied health students;
- Ensure rural training experiences are of high quality;
- Increase the number of rural origin students and support students with rural practice interest;
- Engage with the local community to support the delivery of training to students;
- Maintain and progress an evidence base and the rural health agenda;
- Focus on Aboriginal and Torres Strait Islander health; and
- Deliver regional leadership in developing innovative and training solutions to address rural workforce recruitment and retention.

## South-East New South Wales Regional Training Hub

The Australian National University (ANU) Medical School, Rural Clinical School established the South-East New South Wales (SE NSW) Regional Training Hub, creating opportunities for students to continue prevocational and vocational training in rural Australia and assist students and junior doctors with rural career support, and assistance with rural internship, resident and registrar training positions.

## 2. Objectives

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### 2.1. PROJECT OBJECTIVE

The SE NSW Regional Training Hub seeks to develop a regional collaborative Medical Workforce Planning Tool that will:

- Support the Regional Training Hub and other stakeholders in the region in collaborative planning, training and workforce development activities to enhance the sustainability of the medical workforce;
- Provide relevant workforce and training information at region-wide, sub-regional and local area levels; and
- Assist regional stakeholders manage and monitor medical workforce needs and training places, and proactively respond to workforce trends.

This project seeks to build on the University of Notre Dame Riverina Regional Training Hub Workforce Management & Training Placement Tool.

### 2.2. REPORT OBJECTIVE

The objective of this report is to provide background analysis of data available from public sources and the SE NSW Training Hub.

## 3. Context

Over the last decade there has been an increased research focus on medical workforce planning, particularly with regards to the urban-rural distribution and the factors that influence recruitment and retention of the rural medical workforce. This section presents an overview of the background research, policy and planning context for rural workforce planning for medical practitioners.

### Distribution

The medical workforce in Australia, as is the case with many other industrialised countries, is disproportionately located in urban areas. Despite the introduction of a suite of policy measures, including the Australian General Practice Training (AGPT) Program, bonded places and the 10-year moratorium on Medicare rebates, as well as the increased volume of medical graduates from a larger number of medical schools, this disparity continues. Rural Australians have lower per capita access to both General Practitioners (GPs) and non-GP specialists.<sup>2</sup>

There are important consequences that arise from this maldistribution. Health outcomes in rural and remote Australia are relatively worse than the population in urban areas.<sup>3</sup> With a proportionately lower rural medical workforce, people in rural and remote areas have less access to required health services and either need to travel for longer distances to receive health care or have a lower utilisation rate. These lower utilisation rates are associated with poorer health outcomes and in turn lower economic participation and diminished social and cultural opportunities.<sup>4,5</sup>

The lower relative access to primary care services is problematic for many reasons, not least because these services are the bedrock of effective health care systems.<sup>6</sup> Good access to primary care is important to facilitate illness prevention and disease management. In smaller rural towns, GPs are integral to the provision of acute and emergency care at small rural health services.<sup>7</sup> Rural GP workforce decline has a direct and negative impact on the range of services able to be provided in these towns. In turn, a declining workforce limits the sustainability for the remaining workforce as workforce rosters become less tenable, contributing negatively to workforce recruitment, increasing the reliance on costly locums, and adversely affecting the quality<sup>8</sup> and continuity<sup>9</sup> of primary care services for the local community.

A further trend has seen an increased focus on specialisation of the medical workforce.<sup>10</sup> As a consequence, the proportion of doctors who pursue careers in general practice has declined whilst there has been a steady increase in the proportion of doctors training as non-GP specialists.<sup>11</sup> In turn this limits the available pool of doctors who pursue careers as GPs.

<sup>2</sup> Australian Institute of Health and Welfare. Medical workforce 2015. Canberra: AIHW; 2016

<sup>3</sup> Australian Institute of Health and Welfare. Rural and remote health 2018

<sup>4</sup> O'Sullivan B, McGrail M and Russell D (2017) Rural Specialists: The nature of their work and professional satisfaction by geographical location of work, Australian Journal of Rural Health, 25, 338-346

<sup>5</sup> National Rural Generalist Taskforce (2018) Advice to the National Rural Health Commissioner on the Development of the National Rural Generalist Pathway, Australian Government

<sup>6</sup> Starfield B, Shi L, Macinko J. Contribution of primary care to health systems and health. *Milbank Q* 2005; 83: 457-502.

<sup>7</sup> Kamien M and Cameron WI (2006), Solving the short of general practitioners in remote and rural Australia: A Sisyphean task? *Medical Journal of Australia*, 185, 11/12: 652-653

<sup>8</sup> Saultz JW, Lochner J. Interpersonal continuity of care and care outcomes: a critical review. *The Annals of Family Medicine* 2005; 3: 159-166.

<sup>9</sup> Mainous AG, Baker R, Love MM, Gray DP, Gill JM. Continuity of care and trust in one's physician: evidence from primary care in the United States and the United Kingdom. *Family Medicine* 2001; 33: 22-27.

<sup>10</sup> McGrail M et al. (2017) Solving Australia's rural medical workforce shortage, Centre for Research Excellence in Medical Workforce Dynamics: Policy Brief, [www.mabel.org.au](http://www.mabel.org.au)

<sup>11</sup> McGrail M et al. (2017), p. 2

## Non-GP specialist outreach

The predominant geographic location of non-GP specialists is in metropolitan areas accounting for 85% compared to 11% in inner regional towns, typically with larger populations (>50,000) and within two hours travel of cities. An appreciable proportion (20%) of specialists undertake rural outreach work but only 16% of those specialists provide services to remote locations.<sup>12</sup>

The impact of subsidies on specialists' propensity to undertake remote outreach work is marked, with nearly twice the likelihood for subsidized specialists to travel more than 4 hours for remote outreach work than non-subsidized specialists.

The main outreach subsidy relevant to specialists is the Rural Health Outreach Funding (RHOF) funded by the Australian Government Department of Health. The RHOF supports the delivery of medical specialist, GP, nursing, allied and other health services in rural, regional and remote Australia.<sup>13</sup> The four priorities under the RHOF are chronic disease management, eye health, maternity and paediatric health, and mental health. Relevant specialists for these priority areas are: general (internal) medicine, ophthalmology, psychiatry, obstetrics and gynaecology, paediatrics, renal medicine, endocrinology, cardiology, respiratory medicine and oncology.<sup>14</sup>

## Recruitment and retention

### *General practice*

Whilst the general theme of recent workforce policy has been to maximize rural-based medical training as a way of consolidating and retaining the rural workforce, the analysis of workforce by origin highlights that the majority (63%) of Australian Medical Graduate doctors operating in the rural medical workforce have been trained in metropolitan areas.<sup>15</sup>

Nonetheless, there is strong evidence that rural-based training of doctors is strongly correlated with a higher retention of doctors in rural areas. There is a 2.5 fold increase in GP rural supply associated with selecting students with a rural childhood background.<sup>16</sup> Further, GP vocational training in rural areas with subsequent rural practice is associated with higher levels of retention, sustained for at least five years.<sup>17</sup>

Mobility of the workforce has been investigated to compare the rates of mobility for GPs in rural versus metropolitan areas and for GPs versus specialists.<sup>18</sup> Overall, across metropolitan and rural areas, there is a relatively low rate of mobility, with typically only 4.6% of fully trained GPs leaving their area of practice over a one-year period.<sup>19</sup> The mobility rate for GP registrars is, not surprisingly, much higher, at 21%. There is a 3.2% "risk" of GPs leaving rural areas for metropolitan areas and a 1.34% rate from metropolitan to rural areas.<sup>20</sup> This gradation in retention rates is shown graphically in Figure 3-1.<sup>21</sup>

<sup>12</sup> O'Sullivan BG, McGrail MR and Stoelwinder JU (2017) Subsidies to target specialist outreach services into more remote locations: a national cross-sectional study, *Australian Health Review*, 41, 344-350.

<sup>13</sup> Australian Government Department of Health, Rural Health Outreach Fund, accessed 18 March 2019, <http://www.health.gov.au/internet/main/publishing.nsf/Content/budget2011-flexfund-rural13.htm>

<sup>14</sup> O'Sullivan BG, McGrail MR and Stoelwinder JU (2017)

<sup>15</sup> McGrail MR, Russell D. Australia's rural medical workforce: Supply from its medical schools against career stage, gender and rural-origin. *Australian Journal of Rural Health*. 2016

<sup>16</sup> McGrail MR, Humphreys JS, Joyce CM. Nature of association between rural background and practice location: A comparison of general practitioners and specialists. *BMC Health Services Research*. 2011;11:63.

<sup>17</sup> McGrail MR, Russell D, Campbell D. (2016) Vocational training of General Practitioners in rural locations is critical for Australian rural medical workforce supply. *Medical Journal of Austral* McGrail M et al. (2017) Solving Australia's rural medical workforce shortage, Centre for Research Excellence in Medical Workforce Dynamics: Policy Brief, [www.mabel.org.au/ia.205\(5\):216-21](http://www.mabel.org.au/ia.205(5):216-21).

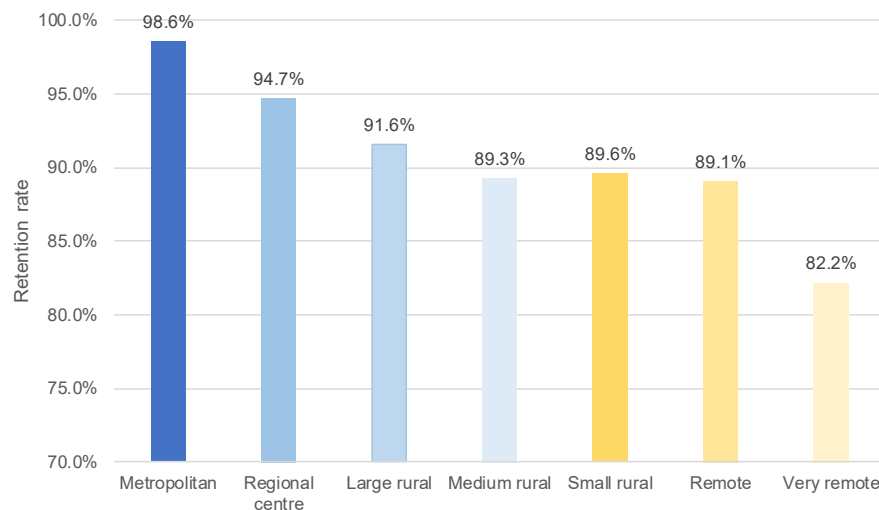
<sup>18</sup> Mobility analysis is based on data collected through the MABEL (Medicine in Australia: Balancing Employment and Life) survey conducted by the University of Melbourne and Monash University. The survey includes about 16%-19% of all Australian GPs with about 75%-80% of survey participants returning each year.

<sup>19</sup> McGrail MR and Humphreys JS (2015) *Medical Journal of Australia*. 203 (2): 92-97.

<sup>20</sup> These mobility rates are based on the MABEL survey date and may understate the true rate.

<sup>21</sup> McGrail MR and Humphreys JS (2015)

**Figure 3-1: GP annual mobility rate, 2008-2012**



A review of the factors influencing GP retention in rural areas by Russell et al. (2016) identified the following as significantly correlated with improved retention:

- **Geographic remoteness** –
  - ▶ The hazard of GPs leaving a community is highest in small, remote centres, and intermediate in small, outer regional centres, compared to everywhere else;
  - ▶ GPs in small/medium rural towns are more likely to leave rural practice compared to GPs in regional centres;
- **Restriction of provider number access** –
  - ▶ GPs with restricted access to Medicare provider numbers (conditional registration) have 52% shorter retention in their current positions than non-restricted GPs;
  - ▶ Conditionally registered GPs have a lower risk of leaving a rural community compared to fully registered GPs;
- **Provision of hospital services** – Non-Visiting Medical Officer (VMO) GPs have an increased risk of leaving a rural community;
- **Practicing procedural services** – Non-procedural GPs have an increased risk of leaving a rural community compared to procedural GPs (i.e. those with advanced skills in anaesthetics, obstetrics or emergency medicine);
- **Undergraduate training in Australia** – GPs trained overseas have an increased risk of leaving a rural community compared to Australian graduates;
- **Taking annual leave** – Each week of annual leave taken by a GP in the past year is associated with 3% longer GP retention in their current position;
- **Age** – GPs aged 35–60 have a reduced risk of leaving a rural community compared to younger and older colleagues; and
- **Business and employment structures** –
  - ▶ Salaried/contracted GPs have ~30% shorter retention than average;
  - ▶ GPs paid by fee-for-service have 50% longer retention than average;
  - ▶ GP practice owners have 70% longer retention than average;
  - ▶ GP practice owners have 70% longer retention than average;
  - ▶ Salaried/contracted GPs are more likely to leave rural practice compared to GP principals and partners.<sup>22</sup>

<sup>22</sup> Russell DJ, McGrail MR and Humphreys JS (2016) Determinants of rural Australian primary health care worker retention: A synthesis of key evidence and implications for policymaking, *Aust. J. Rural Health* (2017) 25, 5–14.

The policy implications are that there is a need for multi-faceted strategies, including a combination of ‘carrots’ and ‘sticks’:

- Positive inducements include provision of rural access to GP procedural training and enabling access to locum services to support annual leave provisions; and
- Negative inducements include the requirement for restricted practice periods in rural areas to be effectively implemented. An important caveat, is that negative inducements tend to detract from career satisfaction, with lower satisfaction rates for rurally-mandated, overseas-trained GPs than for non-mandated GPs.<sup>23</sup> Hence the importance of balancing negative inducements with positive considerations such as improved support focused on professional autonomy, career pathways and mitigation of social isolation.<sup>24</sup>

### Training pathways

A further conclusion is that retention is likely to be enhanced by ensuring that GPs seeking to work in rural areas receive sufficient high quality rural and remote training to prepare them for successful independent procedural, hospital and community practice with well-developed rural career paths facilitated by professional and financial supports.<sup>25</sup>

There are however inherent challenges in developing medical workforce rural training pipelines with one of the key obstacles being the lack of assured hospital places for trainees beyond one-year appointments.<sup>26,27</sup> This leaves residents and registrars having to re-apply for positions on an annual basis. One of the aims of the National Rural Generalist Pathway is to integrate the rural training for General Practice, Emergency and Additional skills into a single training program. However, the challenge still remains – *how to assure continuity of positions at health services given the current focus on single year funded training places?* To advance the National Rural Generalist Pathway concept, one approach that is advocated is to develop a more sustained “duration of training” contract for doctors and with funding following the trainee/registrars.<sup>28</sup> Strasser argues that the same attention to planning and implementation of training pathways should be applied to other specialties in addition to general practice.<sup>29</sup>

### Non-GP specialists

There are a range of specialties that are particularly important for addressing rural health care needs including general medicine and general surgery.<sup>30</sup> General medicine and general surgery are considered particularly relevant given that specialists in these fields provide essential support for the smaller, sub-regional health services.<sup>31</sup> Generalists are also relevant in managing multiple conditions and multiple organ systems.<sup>32</sup> An important recent development that is relevant to rural training of specialists is the dual (split rural/metropolitan) training pathways by the Royal Australasian College of Physicians (RACP), enhancing the provision of specialists with both sub-specialist and general skills.<sup>33</sup> Strasser argues that this should be extended and that there should be a mix of urban- and rural-based training programs with education curricula that emphasise generalist skills and year-by-year continuity of employment for trainees.<sup>34</sup>

<sup>23</sup> McGrail MR, Humphreys JS, Joyce CM, Scott A. International Medical Graduates mandated to practice in rural Australia are highly unsatisfied: Results from a national survey of doctors. *Health Policy*. 2012;108 (2–3):133–9.

<sup>24</sup> McGrail M et al. (2017) Solving Australia’s rural medical workforce shortage, Centre for Research Excellence in Medical Workforce Dynamics: Policy Brief, [www.mabel.org.au](http://www.mabel.org.au)

<sup>25</sup> Russell et al. (2016).

<sup>26</sup> National Rural Generalist Taskforce (2018) Advice to the National Rural Health Commissioner on the Development of the National Rural Generalist Pathway, Australian Government

<sup>27</sup> Strasser RP (2018) *Medical Journal of Australia*, 208(5): 198-199

<sup>28</sup> National Rural Generalist Taskforce (2018)

<sup>29</sup> Strasser RP (2018)

<sup>30</sup> O’Sullivan B, McGrail M and Russell D (2017)

<sup>31</sup> O’Sullivan B, McGrail M and Russell D (2017)

<sup>32</sup> Health Workforce Australia (2012) *Health Workforce 2025, Medical Specialties Volume 3*

<sup>33</sup> O’Sullivan B, McGrail M and Russell D (2017)

<sup>34</sup> Strasser RP, (2018) *Medical Journal of Australia*, 208(5): 198-199



A focus on generalist specialist training programs (general practice, general medicine, general surgery and psychiatry) has been identified as particularly relevant for integrated rural training pathways that seek to enable patients in rural and remote communities to have access to appropriate, high quality care.<sup>35</sup>

The analysis by O'Sullivan et al. (2017) of the factors influencing specialists' satisfaction found no difference between metropolitan and rural specialists with respect to hours worked, remuneration, variety of work, amount of responsibility given, colleagues and fellow workers, opportunities to use abilities and overall satisfaction.<sup>36</sup> These findings are somewhat surprising given that rural specialists report more on-call requirements and a lower range of professional development opportunities.

Other clinical specialty areas that are highly relevant to regional areas and that are also relevant for regional training strategies include:

- Chronic non-communicable disease;
- Obstetrics;
- Paediatrics;
- Emergency Medicine;
- Psychiatry;
- Endocrinology;
- Geriatric medicine and rehabilitation; and
- Palliative care.<sup>37,38</sup>

Key policy and planning implications for specialist training include:

- Enhance the number of trainees in relevant *generalist* specialties to increase their uptake of rural practice as a career;
- Ensure more vocational training is undertaken in rural settings, particularly for specialties such as general medicine and general surgery that are most needed in these locations;
- Further develop workforce capacity, including accessible locum support and professional development, to stimulate the uptake of rural practice and subsequent retention;
- Develop regional specialist service hubs to reinforce and boost rural service delivery for other relevant specialty areas including paediatrics, psychiatry and endocrinology,<sup>39,40</sup> and
- Recognise the rural relevance of other specialties that would support smaller rural catchment sizes, including obstetrics and gynaecology, emergency medicine, palliative medicine, geriatric medicine.

### Key messages – research

- **Early exposure to rural contexts** through undergraduate rural medical school training should be continued.
- **Rural GP training pathways** are a priority for GP workforce consolidation.
- Specialist training delivered through a **rural specialist training pipeline** should target specific specialties including: General medicine; and General surgery.
- Subject to current and projected supply consideration is to be given to strengthening rural training pathways in additional specialties including: Paediatrics; Psychiatry; Endocrinology; Obstetrics and gynaecology; Emergency medicine; Palliative medicine; Geriatric medicine; and Rehabilitation medicine.
- **Recruitment and retention strategies** need to be evidence-based and informed by key drivers of workforce mobility.

<sup>35</sup> Mason J (2013) Review of Australian Government Health Workforce Programs, Department of Health: Australian Government

<sup>36</sup> O'Sullivan B, McGrail M and Russell D (2017)

<sup>37</sup> O'Sullivan B, McGrail M and Russell D (2017)

<sup>38</sup> O'Sullivan B, McGrail M and Russell D (2017)

<sup>39</sup> McGrail M et al. (2017)

<sup>40</sup> O'Sullivan B, McGrail M and Russell D (2017)

## 4. Policy directions

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The following provides an understanding of the existing policy setting for medical workforce in SE NSW. This includes review of policy/guidelines of relevant stakeholders relating to strategic medical workforce planning.

### 4.1. COMMONWEALTH POLICY AND PLANNING

The Australian Government Department of Health plays a major role in relation to medical workforce policy, planning and program delivery. The policy and planning role of the Department has been augmented with the shift of the functions of Health Workforce Australia to this Department in 2014.

#### Stronger Rural Health Strategy

The Australian Government released the *Stronger Rural Health Strategy* as part of the 2018/19 suite of budget measures. The strategy aims to build a sustainable, high quality health workforce that is distributed across the country according to community need particularly in rural and remote communities. To meet the challenge of redistributing the workforce, the strategy includes a range of incentives, targeted funding and bonding arrangements and to give doctors more opportunities to train and practice in rural and remote Australia.

In addition, the strategy aims to enable a stronger role for nurses and allied health professionals in the delivery of more multidisciplinary, team-based models of primary health care.<sup>41</sup>

#### National Medical Workforce Strategy

A *National Medical Workforce Strategy* is being developed to:<sup>42</sup>

- Guide medical workforce planning activities at all levels of government;
- Match the supply of medical specialists to the predicted medical service needs of the community; and
- Identify achievable, practical actions to build a sustainable, highly-trained medical workforce.

The vision for the Strategy is to:

**Work together, using data and evidence, to ensure that the medical workforce sustainably meets the changing health needs of Australian communities.**

The core elements of this vision have been translated into the following strategic objectives:

- **Work together.** Involve major stakeholders in key decisions, facilitated by a mechanism that supports joint decision-making and aligns accountabilities;
- **Use data and evidence.** Draw on integrated data sets and common methodologies to support significant workforce decisions;
- **Ensure that the medical workforce is sustainable.** Support doctors to deliver high quality patient care in environments that support their well-being and allow them to be professionally fulfilled, and improve the domestic self-sufficiency of the medical workforce;
- **Meets the changing health needs of Australian communities.** Enable the medical workforce to provide equitable access to quality care that is responsive to the changing needs of communities.

41. <http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/stronger-rural-health-strategy>

42. <https://www1.health.gov.au/internet/main/publishing.nsf/Content/Health%20Workforce-nat-med-strategy>



The Strategy aims to address medical workforce issues of national significance:

- Improve coordination in medical workforce planning through joint decision-making and a common approach to collecting and sharing data;
- Reduce geographic maldistribution of medical professionals to improve access to high quality care for all;
- Achieving the right balance between generalist and subspecialist skills to create a more flexible workforce, capable of delivering a broader scope of practice;
- Address the growing over and under supply of doctors in some specialties;
- Reduce the reliance on registrars to deliver healthcare services, which is affecting distribution, work-readiness and well-being;
- Simplify the training pipeline and remove barriers to make it easier for doctors to navigate their career pathway;
- Create a flexible workforce which adapts to new technology and supports innovative models of care;
- Increase the number of Aboriginal and Torres Strait Islander doctors and have a culturally safe medical workforce; and
- Ensure doctor work-readiness, giving young doctors a variety of experience.

The final Strategy is expected to be endorsed by Health Ministers in early 2021.

## 4.2. STATE POLICY AND PLANNING

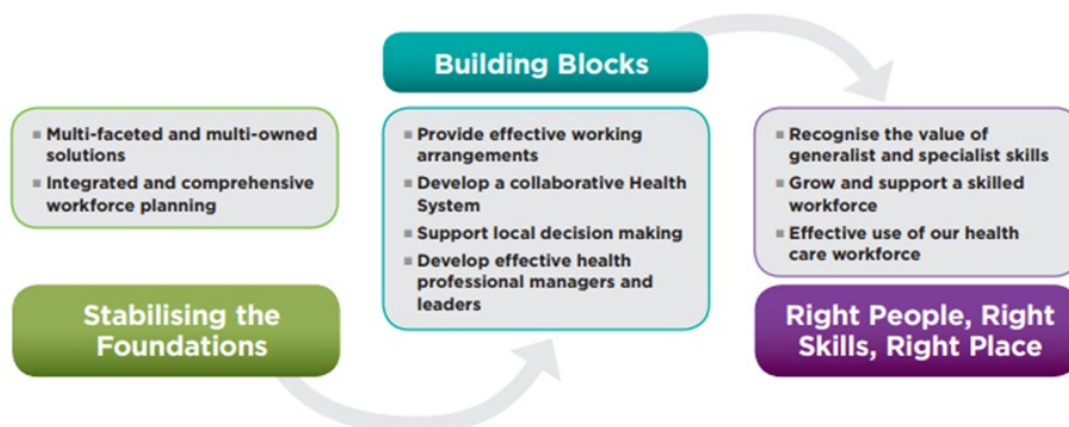
The following provides a summary of the key New South Wales (NSW) policy and planning documents.

### NSW Health Professionals Workforce Plan 2012-2022

The *NSW Health Professionals Workforce Plan 2012-2022* is a strategic framework that aims to address the long-term workforce needs of NSW. The plan outlines strategies to grow the rural workforce, support rural education and training, improve rural workforce planning capacity and provide support to health professionals working in rural areas.

Nine key tenets, grouped into three interconnected parts of a strategic framework underpin the Plan. The 'strategies for action' are outlined in Figure 4-1.

**Figure 4-1: Strategies for action**



In late 2014, the NSW Ministry of Health undertook a review of the Plan to ensure that the future targets remain appropriate. As a result, some of the original targets were updated.

## NSW Health Rural Health Plan: Towards 2021

The *NSW Rural Health Plan: Towards 2021*<sup>43</sup> is designed to strengthen the capacity of NSW rural health services to provide connected and seamless care, as close to regional, rural and remote NSW communities as possible.

The strategies and directions of the plan are summarised below.

### Strategies:

- Enhance the rural workforce: continue to build the health workforce in rural areas through enhanced recruitment, training, career development and support;
- Strengthen rural health infrastructure, research and innovation: invest in facilities, models of care and research and innovation to ensure the provision of high-quality health services in rural communities; and
- Improve rural eHealth: implement eHealth solutions and strategies to transform connections between and access to health services in rural NSW.

### Directions:

- Healthy rural communities: strengthen health promotion, disease prevention and community health services to ensure people in rural communities are healthy;
- Access to high quality care for rural populations: improve access to health services as close to home as possible and enable the provision of high-quality care in local rural health services; and
- Integrated rural health services: ensure services and networks work together, are patient-centred and planned in partnership with local communities and health service providers and provide better continuity of care.

## NSW Health Aboriginal Workforce Strategic Framework 2016-2020

The *NSW Health Good Health - Great Jobs: Aboriginal Workforce Strategic Framework 2016-2020* is intended to support Local Health Districts (LHDs), specialty health networks and other NSW health organisations to grow and develop their Aboriginal workforce. The framework sets out the workforce development priorities and desired outcomes for NSW Health and the key actions that need to be taken to achieve these. The Framework is structured around six key priority areas:<sup>44</sup>

- Lead and plan Aboriginal workforce development;
- Build cultural understanding and respect;
- Attract, recruit and retain Aboriginal staff;
- Develop the capabilities of Aboriginal staff;
- Work with others to achieve workforce priorities; and
- Track our achievements and improve results.

## NSW Strategic Framework and Workforce Plan for Mental Health 2018-2022

The *NSW Strategic Framework and Workforce Plan for Mental Health 2018-2022* provide overarching guidance for NSW Health strategic action in mental health across the next five years. Identified workforce planning and development priorities include: strengthening mental health leadership; strengthening the psychiatry workforce; increasing access to allied health; developing emerging workforces; workforce planning; and workforce development.<sup>45</sup>

43. <https://www.health.nsw.gov.au/rural/Pages/rural-health-plan.aspx>

44. <https://www.health.nsw.gov.au/workforce/aboriginal/Pages/good-health-great-jobs.aspx>

45. <https://www.health.nsw.gov.au/mentalhealth/resources/Pages/mh-strategic-framework.aspx>

**Table 4-1: Workforce Plan Action Table**

GUIDING PRINCIPLE	STRATEGY	ACTIONS
<b>Integrated and comprehensive workforce planning</b>	Integrate mental health workforce planning with local service and facility planning	<ul style="list-style-type: none"> <li>■ State level mental health and workforce planning forums include mental health workforce as a standing agenda item</li> <li>■ Mental health planning is integrated with health workforce and service planning at state and local levels</li> <li>■ The National Mental Health Service Planning Framework is considered as one of a range of resources that could be used in mental health service planning</li> </ul>
	Ensure availability of and access to mental health workforce data	<ul style="list-style-type: none"> <li>■ Updated NSW mental health service, career and workforce development information is available on the NSW Health website</li> <li>■ Improve state and local access to mental health workforce data</li> <li>■ Mental health peer worker data is collected through routine reporting</li> <li>■ Mental health peer worker data is collected through routine reporting</li> <li>■ Aboriginal mental health worker data is collected through routine reporting</li> <li>■ Statewide rostering systems support demand based mental health rostering requirements</li> </ul>
<b>Provide effective working arrangements</b>	Improve recruitment and retention	<ul style="list-style-type: none"> <li>■ Scope development of a Mental Health Attraction Campaign that includes a focus on value-based recruiting</li> </ul>
	Strengthen linkages within and between rural and metropolitan services and professionals to facilitate opportunities for secondments, professional development and service collaboration	<ul style="list-style-type: none"> <li>■ Implement tertiary consultation models that use modalities including telehealth to increase service collaboration, provide support to rural areas and build subspecialty capacity</li> <li>■ Statewide tertiary mental health outreach models consider offering rotating time-limited learning opportunities to build subspecialty workforce capacity</li> <li>■ Consider opportunities and formalise arrangements supporting service collaboration and professional development opportunities between metro and rural services</li> <li>■ Investigate expanding programs such as the Bob Fenwick Memorial Grants program and the Nurse Transition to Professional Practice rural metro placements to include mental health</li> </ul>
<b>Develop a collaborative health system</b>	Develop skills for collaboration that support mental health teams to operate effectively as a unit and in partnership with other workforces in delivering stepped and integrated care	<ul style="list-style-type: none"> <li>■ Develop resources to support successful mental health co-design processes</li> <li>■ Implement co-design approaches and use consumer, carer and staff feedback mechanisms to understand stakeholder perspectives in planning and service delivery</li> <li>■ Implement training through the NSW School-Link Initiative to develop mental health workforce skills in partnering with school staff in the collaborative care of students with complex mental health needs</li> <li>■ Develop collaboration and partnership skills training to assist the mental health workforce in partnering with disability, social care, aged care services and other workforces</li> </ul>
	Support new health practitioners in undertaking their roles and ensure that all practitioners have appropriate access to professional education and support	<ul style="list-style-type: none"> <li>■ Ensure training, supervision and mentoring arrangements are in place to support practitioners newly entering mental health practice, including peer workers and Aboriginal mental health workers</li> <li>■ Professional development and support is available to staff new to subspecialty mental health practice</li> <li>■ Recruit to and support the education, supervision and mentoring roles of senior nursing, allied health and Aboriginal mental health clinical leaders, educators and clinicians</li> <li>■ Support senior peer workers to assist the professional development of new peer workers in mental health</li> <li>■ Leaders support multidisciplinary teams to work in partnership with the emerging peer and Aboriginal mental health workforces</li> <li>■ The composition of teams has adequate senior and junior staff and skill mix to ensure consumer safety and outcomes as well as provide support and development opportunities for junior clinicians</li> <li>■ Resources and training are available that develop workforce capability to deliver therapeutic interventions, including for consumers with complex needs such as people with intellectual disability mental health, borderline personality disorder and eating disorders</li> </ul>
	Develop and implement coordinated mental health education for mental health and partner workforces	<ul style="list-style-type: none"> <li>■ Scope the development of a Mental Health Training Program that delivers capability based training</li> <li>■ Conduct a mental health training needs analysis of NSW Health, Career Medical Officer, other partner workforces</li> <li>■ The NSW Health Mental Health Workforce Development Portal is updated and content expanded</li> <li>■ Develop information and clinical resources to support trauma-informed practice in mental health</li> <li>■ Mental health staff are progressively trained in trauma-informed care</li> <li>■ Resources are developed to support the Health and commissioned Career Medical Officer workforces in working with people accessing the NDIS who have mental illness</li> </ul>

GUIDING PRINCIPLE	STRATEGY	ACTIONS
<b>Grow and support a skilled workforce</b>	Grow and support a skilled mental health nursing workforce in line with forecast health service demand and delivery requirements	<ul style="list-style-type: none"> <li>■ Implement a professional development pathway for mental health nursing</li> <li>■ Increase the uptake of available nursing scholarships by mental health nurses</li> <li>■ Expand mental health training opportunities for enrolled nurses</li> <li>■ Develop models of care that support nurse practitioner roles in mental health</li> <li>■ Expand the number of positions under the Transition to Professional Practice program that support a mental health and general nursing exchange</li> <li>■ Align the work of Productive Wards with other Quality and Safety initiatives</li> </ul>
	Grow and support a skilled mental health allied health workforce in line with forecast health service demand and delivery requirements	<ul style="list-style-type: none"> <li>■ Scope and take forward priorities for the mental health allied health workforce, commencing with the development of guidance for Allied Health Assistants in Mental Health</li> <li>■ Provide scholarships to support attainment of Certificate IV in Allied Health Assistant for staff working in mental health</li> <li>■ Increase allied health recruitment in mental health</li> <li>■ Increase allied health student placements in mental health</li> </ul>
	Grow and support a skilled psychiatry workforce in line with forecast health service demand and delivery requirements	<ul style="list-style-type: none"> <li>■ A statewide Psychiatry Workforce Plan is developed and implemented</li> </ul>
	Grow and support a skilled mental health peer workforce in line with forecast health service demand and delivery requirements	<ul style="list-style-type: none"> <li>■ NSW Health is developing NSW specific guidance to support the growth and embedding of this new and highly valued workforce. NSW Health will also collaborate with the Commonwealth in preparing National Peer Workforce Development Guidelines.</li> <li>■ Recruit and train peer workers across all Local Health Districts and Special Health Networks.</li> </ul>
	Grow and support a skilled Aboriginal mental health workforce in line with forecast health service demand and delivery requirements	<ul style="list-style-type: none"> <li>■ Recruit to new Aboriginal mental health worker trainee and clinician positions funded under the Reform</li> <li>■ Improve role delineation for Aboriginal mental health worker positions</li> <li>■ Promote clinical placements for Aboriginal Mental Health trainees in a variety of mental health settings including subspecialty streams (child and youth, perinatal and older persons' settings)</li> <li>■ Explore a range of training programs and pathways to increase Aboriginal staff in mental health</li> </ul>
	Strengthen the capacity of partner workforces to respond to the needs of consumers	<ul style="list-style-type: none"> <li>■ Provide gatekeeper and suicide awareness training to non-mental health workforces including drug and alcohol workers, housing and older persons' services</li> <li>■ Statewide implementation of Project Air and Project Air for Schools</li> <li>■ Make training and resources on the physical health care of consumers available to non-mental health workforces</li> </ul>
	Improve mental health engagement in leadership programs	<ul style="list-style-type: none"> <li>■ Increase the number of mental health practitioners engaged in management, leadership and talent development programs</li> <li>■ Increase participation of Mental Health Nurse Unit Managers in the 'Take the lead 2' program</li> <li>■ Increase participation of senior mental health nurse managers with the 'In the lead' program</li> </ul>
	Increase mental health staff involvement in clinical redesign, research and improvement science	<ul style="list-style-type: none"> <li>■ Support more mental health staff to participate in clinical redesign, research and improvement science education and practice</li> </ul>
	Strengthen workforce skills in commissioning of mental health services	<ul style="list-style-type: none"> <li>■ Increase access to training and resources for health service commissioning</li> </ul>
	Strengthen workforce cultural capability	<ul style="list-style-type: none"> <li>■ Develop and implement a resource to support the Health and commissioned Career Medical Officer workforces in working with refugees, migrant communities and people from culturally and linguistic diverse backgrounds who have mental illness</li> </ul>

## 4.3. LOCAL POLICY AND PLANNING

Key policy and planning documents are outlined below.

### Southern NSW Local Health District Strategic Plan 2016-21

The Southern NSW LHD Strategic Plan acknowledges that:

- Attracting and retaining an engaged highly skilled regional and rural workforce is a challenge;
- There is a heavy reliance on locum doctors within Emergency Departments (EDs);
- There is an aging nursing workforce across the LHD, particularly the nursing workforce; and
- There is a need to provide clinical support for staff to maintain and develop new skills.

The Plan specified the strategic priority to *'develop an enviable workplace that attracts and retains the right people to join a permanent highly skilled, responsive workforce.'*

### NSW Rural Doctors Network Rural Health Workforce Needs Analysis

The NSW Rural Doctors Network (RDN) Health Workforce Needs Analysis (HWNA) is intended to articulate the current state of the primary health workforce in rural NSW to meet current and future community health workforce needs. The HWNA identifies the major workforce needs and activities to support improvements in three priority areas:<sup>46</sup>

- **Access** – improving access and continuity of access to essential primary health care;
- **Quality of access** – building health workforce capability; and
- **Future planning** – growing the sustainability of the health workforce.

The 2018/19 Primary HWNA identifies the following GP workforce findings/issues:

- The workforce full-time equivalent (FTE) is increasing at a lesser rate than headcount. This implies that many GPs are opting to work part-time and access to GPs is not increasing with numbers trained;
- Thirty-three percent of the rural GP workforce is aged over 55. The rate of supply of rural GP Registrars is at risk of being insufficient to accommodate workforce attrition;
- An increasing trend for GPs to either limit their VMO availability or not seek VMO status at all has been observed. The consequences for communities are often manifest in workforce gaps in Emergency Department, inpatient and procedural services; and
- Further, the NSW GP Proceduralist workforce that supports many small rural hospital services is in significant decline, with an estimated 33% of the GP Proceduralist workforce in or moving towards retirement by 2025.

## 4.4. STAKEHOLDER MAPPING

This project seeks to build on the work of partner organisations and build a collaborative platform to support ongoing workforce development activities across the stakeholder groups.

The *National Medical Workforce Strategy Scoping Framework* recognises that the medical workforce planning system in Australia is complex and multifaceted, with accountabilities split between various workforce planning stakeholders.

46. <https://www.nswrdn.com.au/site/needs-assessment>

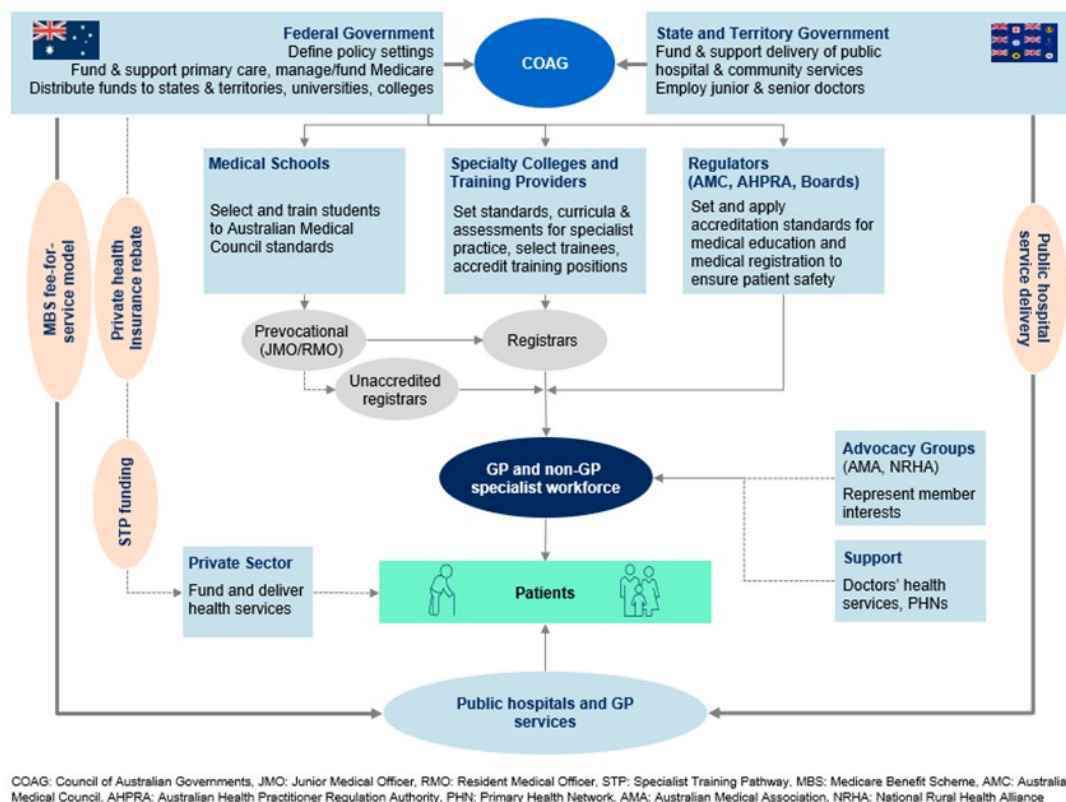


The Framework notes that:

- The Commonwealth government defines policy settings for healthcare delivery and funds several components of the health system (including Medicare, the Pharmaceutical Benefits Scheme, private health insurance rebates, GP training, some non-GP specialist training, and the RMMT Program) and informs policy setting for distributing university places through the Commonwealth Grant Scheme;
- State and territory governments fund and support delivery of public hospitals and community services, and employ prevocational doctors, doctors in training and specialists;
- Medical schools select and train medical students to Australian Medical Council standards and coordinate and deliver research;
- Specialist medical colleges set standards, curricula and assessments for specialist practice to AMC standards, select trainees, determine the number of training positions and accredit them, and represent members' interests;
- Medical regulators set and apply standards for medical education and medical registration to ensure patient safety, and credential International Medical Graduates;
- Doctor advocacy groups promote and protect the professional interests of doctors; and
- The private sector funds and delivers health services and provides a limited amount of specialist training through the Specialist Training Program.

These roles are summarised in Figure 4-2.

**Figure 4-2: Overview of medical workforce planning**



*It is noted that an announcement was made in May 2019 that COAG will be replaced with monthly National Cabinet meetings and a new system for communication between State and Territory leaders.*

### ***Key messages – policy & planning***

Key regional medical workforce planning policy directions of Commonwealth Government, NSW Health and the local district include:

- Distribution of the health workforce is to be based on community need;
- The value of generalist and specialist skills is to be recognised;
- The training pipelines and career pathways are to be simplified;
- Health professionals working in rural areas require embedded support mechanisms;
- The demographics and workforce participation rates are changing, with an ageing workforce and limited capacity of trainee positions to accommodate workforce attrition; and
- An interconnected system of healthcare requires integrated evidence-based planning and collaboration.

## 5. Catchment region

The section outlines the catchment region, hospital facilities, historic and projected population trends, socio-economic and burden of disease profile and community health status indicators

### 5.1. CATCHMENT REGION

The catchment consists of all Local Government Areas (LGAs) in the Southern NSW LHD:

- Bega Valley Shire;
- Eurobodalla Shire;
- Goulburn Mulwaree;
- Queanbeyan-Palerang Regional;
- Snowy Monaro Regional;
- Upper Lachlan Shire; and
- Yass Valley.

In addition, the Hilltops Shire and Cowra Shire are in scope for the footprint of the SE NSW Regional Training Hub.

Table 5-1 groups the LGAs according to the Australian Bureau of Statistics (ABS) structures: statistical area 4 (SA4) and statistical area 3 (SA3).<sup>47</sup>

**Table 5-1: SA4, SA3 and LGA**

LGA	SA3 NAME	SA4 NAME
Bega Valley Shire	South Coast	Capital Region
Eurobodalla Shire		
Goulburn Mulwaree	Goulburn – Mulwaree*	
Upper Lachlan Shire		
Queanbeyan-Palerang Regional	Queanbeyan	
Snowy Monaro Regional	Snowy Mountains	
Yass Valley	Young – Yass*	
<i>Hilltops Shire</i>		
<i>Cowra Shire</i>	Lachlan Valley	

*Blue italics indicates LGAs outside the SE NSW LHD* \* Previously combined as SA3 10101: Goulburn-Yass

### 5.2. HOSPITAL FACILITIES

The catchment community is served by 8 district hospitals, 3 community hospitals and 3 multi-purpose services (MPSs).

47. Statistical Areas Level 4 (SA4s) are specifically designed for the output of Labour Force Survey data and reflect labour markets within each State and Territory within the population limits imposed by the Labour Force Survey sample. Most SA4s have a population above 100,000 persons to provide sufficient sample size for Labour Force estimates. In regional areas, SA4s tend to have lower populations (100,000 to 300,000). In metropolitan areas, the SA4s tend to have larger populations (300,000 to 500,000). SA4s are aggregations of whole SA3s. Statistical Area Level 3 (SA3) represent a standard framework for the analysis of data at the regional level. In aggregate, they cover the whole of Australia without gaps or overlaps, and do not cross state/territory borders. SA3s are often the functional areas of regional towns and cities with a population in excess of 20,000 or clusters of related suburbs around urban commercial and transport hubs within the major urban areas. The regional breakups have been designed to reflect regional identity. These are areas with both geographic and socio-economic similarities. Reference: ASGS Volume 1 – Main Structure and Greater Capital City Statistical Areas Australia July 2011, 1270.0.55.001.

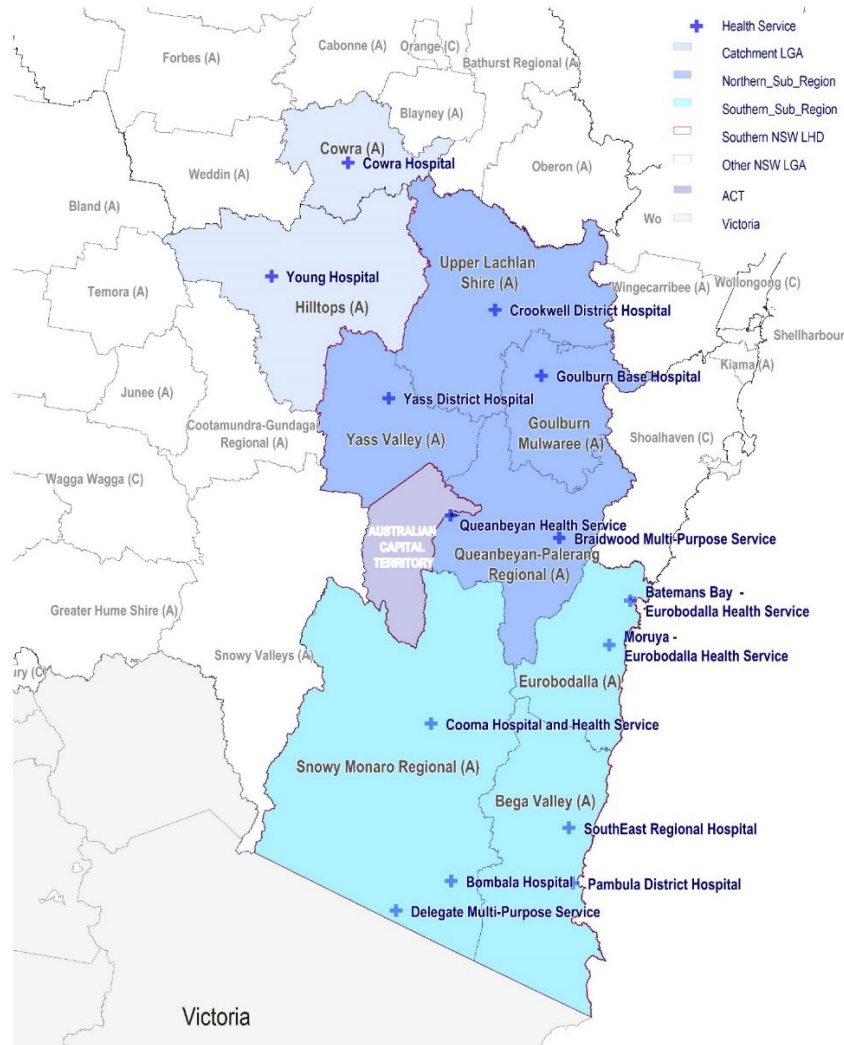


**Table 5-2: Hospital facilities by type and location**

FACILITY TYPE	HEALTH SERVICE	LGA
District Hospital – group 1	Bega South East Regional Hospital (N202)	Bega Valley Shire
	Goulburn Base Hospital (N209)	Goulburn Mulwaree
District Hospital – group 2	Cowra District Hospital (L206)	Cowra Shire
	Batemans Bay - Eurobodalla Health Service (N201)	Eurobodalla Shire
	Moruya - Eurobodalla Health Service (N211)	Eurobodalla Shire
	Young Health Service (N218)	Hilltops Shire
	Queanbeyan Health Service (N215)	Queanbeyan-Palerang Regional
	Cooma Health Service (N206)	Snowy Monaro Regional
Community Hospitals with surgery	Pambula District Hospital (N214)	Bega Valley Shire
Community Hospitals without surgery	Crookwell Health Service (N207)	Upper Lachlan Shire
	Yass Health Service (N217)	Yass Valley
Multi-Purpose Services	Braidwood Multi-Purpose Service (N205)	Queanbeyan-Palerang Regional
	Bombala Multi-Purpose Service (N203)	Snowy Monaro Regional
	Delegate Multi-Purpose Service (N208)	Snowy Monaro Regional

Figure 5-1 outlines the in-scope LGAs and health services.

**Figure 5-1: Catchment LGAs and health services**



## 5.3. POPULATION

The following historical, current and projected population of the catchment has been sourced from:

- ABS Regional Profiles;
- NSW Department of Planning and Environment, Population Projections; and
- Public Health Information Development Unit (PHIDU), Social Health Atlas of Australia by LGA.

### Historic population

The catchment population grew by an average of 0.86% per annum between 2015 and 2019, significantly less than the State average 1.52% per annum (Table 5-3).<sup>48</sup> LGAs in the north of the catchment grew at twice the rate (1.0% per annum) of LGAs in the south of the catchment (0.5% per annum). The fastest growing LGA, and the most populous, is Queenbeyan-Palerang Regional with a per annum growth rate of 1.69% per annum.

**Table 5-3: Estimated Resident Population, 2015 to 2019**

LGA	2015	2016	2017	2018	2019	ANNUAL CHANGE 2015-2019
<b>Southern sub-region</b>	<b>91,919</b>	<b>92,418</b>	<b>92,879</b>	<b>93,369</b>	<b>93,744</b>	<b>0.49%</b>
Bega Valley Shire	33,713	33,941	34,117	34,348	34,476	0.56%
Eurobodalla Shire	37,733	37,919	38,097	38,288	38,473	0.49%
Snowy Monaro Regional	20,473	20,558	20,665	20,733	20,795	0.39%
<b>Northern sub-region</b>	<b>142,469</b>	<b>143,887</b>	<b>145,517</b>	<b>147,274</b>	<b>148,825</b>	<b>1.10%</b>
Goulburn Mulwaree	29,815	30,261	30,575	30,852	31,132	1.09%
Queanbeyan-Palerang Regional	57,130	57,790	58,816	59,959	61,100	1.69%
Upper Lachlan Shire	7,804	7,853	7,914	7,961	8,059	0.81%
Yass Valley	16,356	16,568	16,747	16,953	17,087	1.10%
Cowra Shire	12,604	12,659	12,700	12,767	12,743	0.27%
Hilltops Shire	18,760	18,756	18,765	18,782	18,704	-0.07%
<b>Total</b>	<b>234,388</b>	<b>236,305</b>	<b>238,396</b>	<b>240,643</b>	<b>242,569</b>	<b>0.86%</b>
<b>NSW</b>	<b>7,616,168</b>	<b>7,732,858</b>	<b>7,867,936</b>	<b>7,988,241</b>	<b>8,089,817</b>	<b>1.52%</b>

48. ABS ERP, by LGA

## Projected population

Population projections to 2041<sup>49</sup> indicate a total population increase of 442, with a projected *increase* of 6,408 residents in the northern region offsetting a projected *decrease* of 5,966 residents in the southern sub-region (Table 5-4).

**Table 5-4: Estimated Resident Population, 2021 to 2041**

LGA	2021	2026	2031	2036	2041	TOTAL CHANGE 2021-2041	ANNUAL CHANGE 2021-2041
<b>Southern sub-region</b>	<b>91,765</b>	<b>91,011</b>	<b>89,768</b>	<b>88,001</b>	<b>85,799</b>	<b>-5,966</b>	<b>-0.3%</b>
Bega Valley	33,956	33,910	33,661	33,198	32,553	-1,403	-0.2%
Eurobodalla	37,621	37,355	36,938	36,350	35,627	-1,994	-0.3%
Snowy Monaro Regional	20,188	19,746	19,169	18,453	17,619	-2,569	-0.7%
<b>Northern sub-region</b>	<b>147,309</b>	<b>150,274</b>	<b>152,283</b>	<b>153,393</b>	<b>153,717</b>	<b>6,408</b>	<b>0.2%</b>
Goulburn Mulwaree	31,148	31,958	32,613	33,112	33,475	2,327	0.4%
Queanbeyan-Palerang Regional	60,183	62,222	63,713	64,731	65,329	5,146	0.4%
Upper Lachlan Shire	8,027	8,194	8,329	8,430	8,508	481	0.3%
Yass Valley	16,844	17,080	17,194	17,204	17,124	280	0.1%
Cowra	12,648	12,710	12,774	12,802	12,797	149	0.1%
Hilltops	18,459	18,110	17,660	17,114	16,484	-1,975	-0.6%
<b>Total catchment</b>	<b>239,074</b>	<b>241,285</b>	<b>242,051</b>	<b>241,394</b>	<b>239,516</b>	<b>442</b>	<b>0.0%</b>
<b>NSW</b>	<b>8,414,978</b>	<b>9,011,010</b>	<b>9,560,567</b>	<b>10,077,964</b>	<b>10,572,696</b>	<b>2,157,718</b>	<b>1.1%</b>

The projected impacts of natural change (births and deaths) and net migration across the catchment are outlined in Table 5-5. This reveals a natural decline of 2,282 across the region and net migration in the Snowy Monaro Regional and Hilltops Shire.

**Table 5-5: Estimated Resident Population, 2021 to 2041**

LGA	Births	Deaths	Net migration
<b>Southern sub-region</b>	<b>16,418</b>	<b>26,043</b>	<b>3,007</b>
Bega Valley	6,209	9,763	2,166
Eurobodalla	6,273	11,670	3,106
Snowy Monaro Regional	3,936	4,610	-2,265
<b>Northern sub-region</b>	<b>39,713</b>	<b>32,370</b>	<b>2,486</b>
Goulburn Mulwaree	7,840	7,124	2,497
Queanbeyan-Palerang Regional	17,804	11,036	771
Upper Lachlan Shire	2,028	2,028	655
Yass Valley	4,011	3,577	122
Cowra	3,326	3,687	499
Hilltops	4,704	4,918	-2,058
<b>Total catchment</b>	<b>56,131</b>	<b>58,413</b>	<b>5,493</b>

49. Source: 2016 Department of Planning and Environment New South Wales State and Local Government Area Population Projections

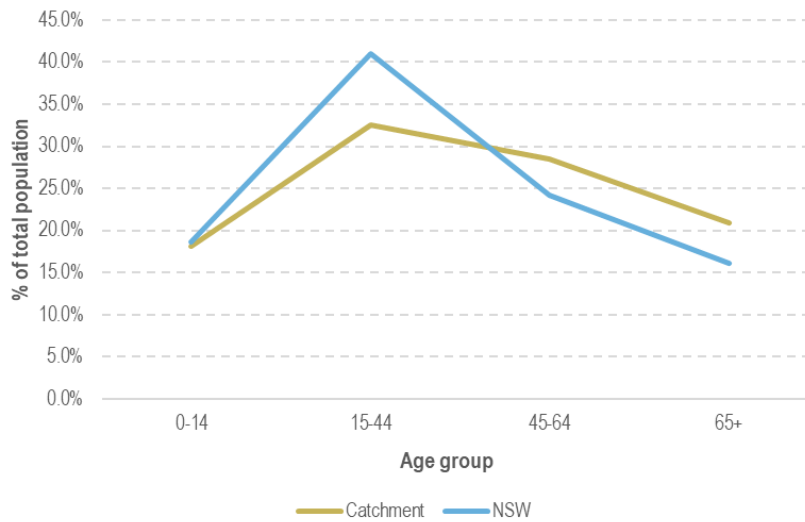
## Age profile

When compared to the NSW population profile (Figure 5-2), in June 2018 the catchment had:

- An *equivalent* proportion of young people 0-14 years;
- A *lower* proportion of people aged between 15-44; and
- A *higher* proportion of people aged 45 years and older

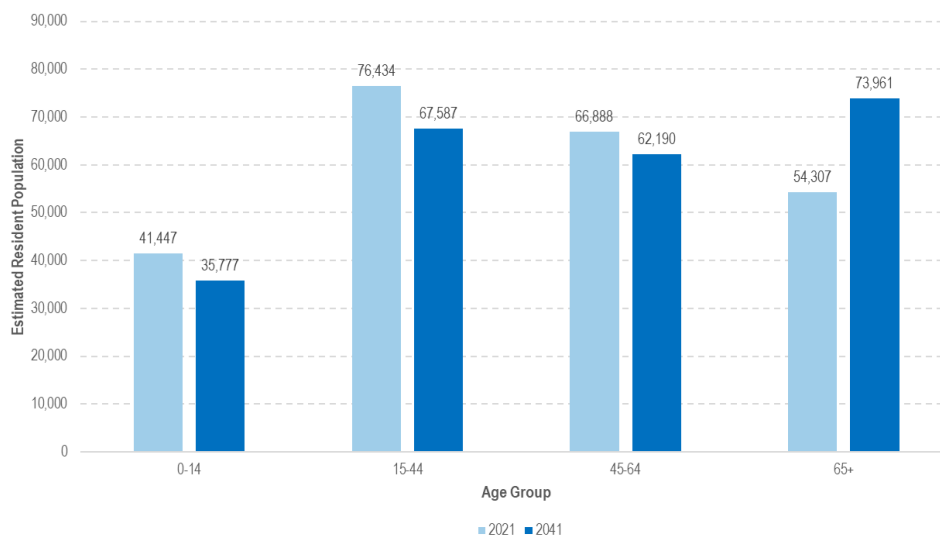
This is typical of a regional community.

**Figure 5-2: Catchment population, 2018**



Over the coming two decades, the catchment will experience the impacts of an aging population as the proportion of people aged over 65 years increases from 22.7% in 2021 to 30.9% in 2041 (Figure 5-3).<sup>50</sup>

**Figure 5-3: Catchment population projections, 2021 to 2041, per age group**



During this period, there is a projected 19,654 increase in the population aged 65 years and older and 19,215 decrease in the population under 65 years (Table 5-6).

50. Source: 2016 New South Wales State and Local Government Area Population Projections

**Table 5-6: Catchment population projections, 2021 to 2041, per age group**

AGE GROUP	2021	2041	RAW CHANGE 2021-41	TOTAL CHANGE 2021-41	ANNUAL CHANGE 2021-41
0-14	41,447	35,777	-5,670	-13.7%	-0.7%
15-44	76,434	67,587	-8,847	-11.6%	-0.6%
45-64	66,888	62,190	-4,698	-7.0%	-0.4%
65+	54,307	73,961	19,654	36.2%	1.6%
<b>Total</b>	<b>239,076</b>	<b>239,515</b>	<b>439</b>	<b>0.2%</b>	<b>0.0%</b>

## 5.4. SOCIO-ECONOMIC PROFILE

The Socio-Economic Index for Areas (SEIFA) is a product developed by the ABS that ranks areas in Australia by Index of Relative Socio-economic Disadvantage (IRSD). The index is derived from attributes that reflect disadvantage such as low income, low educational attainment, high unemployment, and jobs in relatively unskilled occupations. A higher score on the index means a lower level of disadvantage. A lower score on the index means a higher level of disadvantage. When compared to the NSW regional IRSD (972), relative disadvantage is identified in Cowra, Hilltops, Goulburn Mulwaree and Eurobodalla (Table 5-7).

**Table 5-7: Relative social disadvantage per LGA, 2016**

Sub-region	LGA	Relative SEIFA
Southern sub-region	Bega Valley	976
	Eurobodalla	<b>962</b>
	Snowy Monaro Regional	1008
Northern sub-region	Goulburn Mulwaree	<b>960</b>
	Queanbeyan-Palerang Regional	1053
	Upper Lachlan Shire	998
	Yass Valley	1062
	Cowra	<b>924</b>
	Hilltops	<b>949</b>
	NSW	
Rest of New South Wales		972

## 5.5. HEALTH STATUS

The following provides an overview of health status indicators for the catchment by LGA.

### Chronic disease

Analysis of the chronic disease age-standardised rate (ASR) per population reveals:

- Cowra has the highest rates of chronic disease in the region; and
- Heart, Stroke and Vascular Disease, Asthma and Arthritis are the most frequently occurring chronic diseases and are above the regional NSW rates in three or more LGAs (Table 5-8).

**Table 5-8: Chronic disease modelled ASR per 100 population, 2017/18 (Source: PHIDU)**

LGA	Diabetes Mellitus	Heart, Stroke & Vascular Disease	Asthma	COPD	Arthritis	Osteoporosis
Bega Valley	4.8	4.5	<b>14.0</b>	2.2	16.0	3.3

LGA	Diabetes Mellitus	Heart, Stroke & Vascular Disease	Asthma	COPD	Arthritis	Oesteoporosis
Eurobodalla	4.9	4.7	13.8	1.9	16.3	4.0
Snowy Monaro Regional	3.9	4.4	11.9	2.4	16.0	3.1
Goulburn Mulwaree	4.8	5.2	12.6	2.6	19.7	4.7
Queanbeyan-Palerang Regional	3.9	4.9	10.5	2.2	16.1	4.1
Upper Lachlan Shire	4.4	5.4	10.8	2.4	17.5	3.5
Yass Valley	3.8	5.2	10.6	2.4	18.3	4.0
Cowra	5.8	5.9	15.6	2.6	18.5	3.9
Hilltops	3.9	4.9	12.5	2.7	18.7	3.7
<b>NSW</b>	<b>5.2</b>	<b>4.9</b>	<b>10.6</b>	<b>2.2</b>	<b>15.5</b>	<b>4.2</b>
<b>Rest of NSW (excl. Greater Sydney)</b>	<b>4.9</b>	<b>5.1</b>	<b>13.2</b>	<b>2.6</b>	<b>17.6</b>	<b>4.0</b>

Red font denotes burden of disease prevalence greater than the regional NSW rate.

## Avoidable deaths

Analysis of avoidable deaths over the five years 2013 to 2017 reveals:

- Circulatory System Disease, Cancer and Ischemic Heart Disease are the causes of the highest avoidable deaths;
- When compared with the regional NSW rate, Circulatory System Disease and Ischemic Heart Disease are more common in five LGAs; and
- Cowra has the highest rates of avoidable deaths in the region (Table 5-9).

**Table 5-9: Avoidable deaths by cause, 2013 to 2017**

LGA	Average annual ASR per 100,000 population (persons aged 0-74 years)					
	Cancer	Diabetes	Circulatory System Disease	Ischemic Heart Disease	Respiratory System Disease	COPD
Bega Valley	29.0	5.4	33.9	21.0	8.3	7.8
Eurobodalla	30.3	8.8	40.7	27.2	12.0	10.5
Snowy Monaro Regional	29.9	9.6	34.0	20.9	13.7	12.8
Goulburn Mulwaree	29.8	7.9	51.0	33.2	22.7	22.5
Queanbeyan-Palerang Regional	35.7	4.4	43.6	32.0	11.1	10.8
Upper Lachlan Shire	15.7	N/A	30.7	15.4	9.2	9.0
Yass Valley	27.3	5.9	29.6	17.7	19.0	17.7
Cowra	21.9	7.5	58.1	34.2	26.3	25.9
Hilltops	35.5	7.1	44.7	25.1	11.9	10.9
<b>NSW</b>	<b>27.3</b>	<b>6.3</b>	<b>35.8</b>	<b>21.8</b>	<b>10.6</b>	<b>9.9</b>
<b>Rest of NSW (excl. Greater Sydney)</b>	<b>30.7</b>	<b>7.4</b>	<b>40.6</b>	<b>24.9</b>	<b>13.9</b>	<b>12.9</b>

Red font denotes burden of disease prevalence greater than the regional NSW rate.

### ***Key messages – catchment population***

- The catchment community is served by 8 district hospitals, 3 community hospitals and 3 multi-purpose services.
- In 2019, there were 148,825 residents in the northern sub-region and 93,744 residents in the southern sub-region.
- The catchment population grew by an average of 0.86% per annum between 2015 and 2019.
- Population projections to 2041 indicate a total population increase of 442, with a projected increase of 6,408 residents in the northern region offsetting a projected decrease of 5,966 residents in the southern sub-region.
- When compared to the NSW population profile in 2018, the catchment had an equivalent proportion of young people 0-14 years, a lower proportion of people aged between 15-44 and a higher proportion of people aged 45 years and older.
- Over the coming two decades, there is a projected 19,654 increase in the population aged 65 years and older and 19,215 decrease in the population under 65 years.
- Relative socio-economic disadvantage is identified in Cowra, Hilltops, Goulburn Mulwaree and Eurobodalla.
- Heart, Stroke and Vascular Disease, Asthma and Arthritis are the most frequently occurring chronic diseases.
- Circulatory System Disease, Cancer and Ischemic Heart Disease are the causes of the highest avoidable deaths.
- Cowra has the highest rates of chronic disease and avoidable deaths in the region.

## 6. Service utilisation

The following provides a summary of publicly available data relating to Medical Benefits Schedule (MBS) claims data for GP and non-GP specialists.

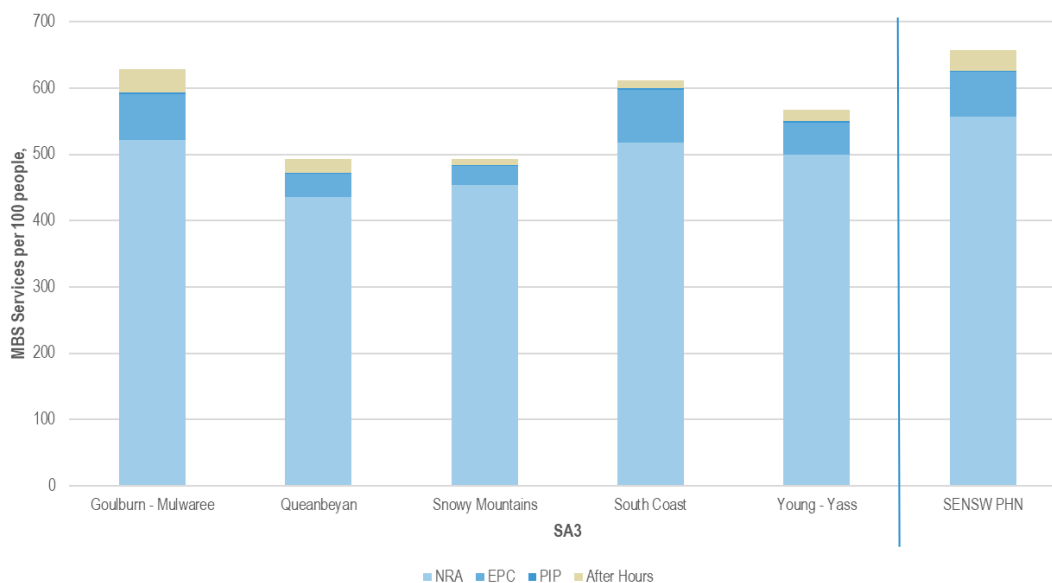
### Primary care attendances

The *SENSW PHN Population Health Profile* (March 2020) outlines 2017/18 MBS data based on the following GP service categories:

- **Non-referred attendances** includes: GP Short (Level A), GP Standard (Level B), GP Long (Level C), GP Prolonged (Level D), Other non-referred medical practitioner, GP Focused Psychological Strategies and Family Group Therapy, GP Prolonged - Imminent danger of death, GP Acupuncture, GP Pregnancy support counselling and GP Telehealth (patient-end support) services. These are non-referred attendances by a GP or other medical practitioner. It does not include after-hours GP enhanced primary care and PIP services;
- **Enhanced Primary Care (EPC)** includes Health Assessments, Chronic Disease Management Plans, Multidisciplinary Case Conferences, Domiciliary and Residential Medication Management Reviews, and Mental Health Services. These services are designed to provide a structured approach for GPs to care for people with chronic conditions and complex care needs, and to improve coordination of care for people who require multidisciplinary, team-based care;
- **Practice Incentive Program (PIP)** - This program aims to support general practice activities including continuous improvements, quality care, enhance capacity and improve access and health outcomes for patients. A practice must be accredited or registered for accreditation to participate in PIP services. Includes cervical smear, diabetes mellitus annual cycle of care and asthma cycle of care PIP services; and
- **After-hours** includes urgent and non-urgent after-hours GP care. GP attendances provided on a public holiday, a Sunday, before 8am or after 1pm on a Saturday (after 12pm for urgent care or at a place other than a consulting room), or before 8am or after 8pm on a weekday (after 7pm for urgent care or at a place other than a consulting room).

Figure 6-1 provides an overview with further analysis overleaf.

**Figure 6-1: GP MBS services delivered per 100 people, 2017/18, per SA3**





When compared with the SENSW PHN average:

- There was a lower rate of **Non-Referred Attendances** across all SA3s, with substantially lower attendances in Queanbeyan and Snowy Mountains;
- The rate of **Enhanced Primary Care Attendances** was lower in Queanbeyan, Snowy Mountains and Young-Yass, comparable in Goulburn-Mulwaree, and higher in South Coast;
- The rate of **PIP Attendances** was lower in Queanbeyan and Snowy Mountains, comparable in Young-Yass and higher in Goulburn-Mulwaree and South Coast;
- The rate of **after-hours attendances** was higher in Goulburn-Mulwaree, and lower in all other SA3s; and
- **Total attendances** were lower across all SA3s, with substantially lower attendances in Queanbeyan and Snowy Mountains.

**Table 6-1: GP MBS services delivered per 100 people, per SA3, 2017/18\***

SERVICE TYPE	GOULBURN - MULWAREE	QUEANBEYAN	SNOWY MOUNTAINS	SOUTH COAST	YOUNG - YASS	SENSW PHN
<b>Non-Referred Attendances**</b>	<b>522.0</b>	<b>435.2</b>	<b>453.5</b>	<b>518.2</b>	<b>499.6</b>	<b>556.7</b>
GP Short (Level A)	12.0	10.4	27.2	32.9	31.6	18.7
GP Standard (Level B)	399.1	337.9	336.8	392.0	339.0	427.7
GP Long (Level C)	97.7	70.6	74.3	80.6	111.2	88.1
GP Prolonged (Level D)	9.3	6.8	8.8	7.5	10.9	7.4
GP Telehealth (patient-end support)	0.3	-	1.2	1.5	0.8	0.4
Other Non-referred Medical Practitioner	3.4	9.2	3.4	3.5	5.6	13.1
<b>Enhanced Primary Care</b>	<b>68.9</b>	<b>35.9</b>	<b>29.4</b>	<b>78.9</b>	<b>48.6</b>	<b>67.5</b>
GP Chronic Disease Management Plan	49.0	21.0	19.8	56.1	33.7	44.8
GP Health Assessment	4.2	3.2	1.9	6.9	3.1	4.9
GP Mental Health	14.9	11.1	7.2	14.9	10.6	16.8
GP Multidisciplinary Case Conference	0.2	0.3	-	0.3	0.4	0.3
Medication Management Review (domiciliary)	0.3	0.1	-	0.4	0.5	0.4
Medication Management Review (residential)	0.3	0.2	0.2	0.3	0.4	0.3
<b>Practice Incentive Program (PIP) services</b>	<b>2.5</b>	<b>1.3</b>	<b>1.4</b>	<b>2.9</b>	<b>2.2</b>	<b>2.2</b>
Asthma Cycle of Care PIP	0.7	0.3	0.2	0.4	0.2	0.4
Cervical Smear PIP	0.5	0.2	0.2	0.3	0.3	0.3
Diabetes Mellitus Annual Cycle of Care PIP	1.4	0.8	1.0	2.3	1.8	1.5
<b>After-hours</b>	<b>35.3</b>	<b>20.9</b>	<b>8.0</b>	<b>11.7</b>	<b>16.7</b>	<b>30.5</b>
After-hours GP (non-urgent)	34.6	19.3	7.5	11.1	15.4	28.1
After-hours GP (urgent)	0.6	1.5	0.5	0.6	1.3	2.3
<b>Total GP attendances</b>	<b>628.6</b>	<b>493.2</b>	<b>492.4</b>	<b>611.7</b>	<b>567.1</b>	<b>656.9</b>

\* Lachlan Valley SA3 is not in-scope for the SENSW PHN.\*\* Also includes: GP Acupuncture, GP Focussed Psychological Strategies and Family Group Therapy; GP Pregnancy Support Counselling; and GP Prolonged - Imminent danger of death

## Attendance rates

The Australian Institute of Health and Welfare (AIHW) publishes relative utilisation of GP and non-GP specialist services, aged standardised per person across SA3 and PHN, based on the MBS claims data.<sup>51</sup>

51. Australian Institute of Health and Welfare analysis of Department of Health, Medicare Benefits Schedule statistics 2016/17

Analysis of age standardised GP (Table 6-2) and non-GP specialist (Table 6-3) attendances over the period 2012/13 to 2016/17 reveals:

- Lower attendance rates across all SA3s when compared with the SENSW PHN and National averages, with the lowest attendance rates in the Snowy Mountains SA3; and
- Increasing attendance rates over time for all SA3s.

**Table 6-2: Age standardised GP attendances, per SA3, 2012/13 to 2016/17**

REGION	2012/13	2013/14	2014/15	2015/16	2016/17
Goulburn - Yass	4.6	5.2	5.3	5.5	5.4
Lachlan Valley	5.0	5.3	5.5	5.5	5.5
Queanbeyan	4.2	4.2	4.4	4.7	4.9
Snowy Mountains	3.9	4.1	4.1	4.3	4.4
South Coast	4.2	4.5	4.8	5.1	5.1
<b>SENSW PHN</b>	-	<b>5.6</b>	<b>5.8</b>	<b>5.9</b>	<b>5.9</b>
<b>National</b>	<b>5.7</b>	<b>5.8</b>	<b>5.9</b>	<b>6.1</b>	<b>6.1</b>

**Table 6-3: Age standardised specialist attendances, per SA3, 2012/13 to 2016/17**

REGION	2012/13	2013/14	2014/15	2015/16	2016/17
Goulburn - Yass	0.68	0.71	0.72	0.73	0.75
Lachlan Valley	0.66	0.67	0.71	0.73	0.74
Queanbeyan	0.57	0.59	0.61	0.64	0.66
Snowy Mountains	0.48	0.50	0.50	0.50	0.54
South Coast	0.60	0.63	0.67	0.67	0.68
<b>SENSW PHN</b>	-	<b>0.87</b>	<b>0.90</b>	<b>0.92</b>	<b>0.92</b>
<b>National</b>	<b>0.88</b>	<b>0.90</b>	<b>0.92</b>	<b>0.94</b>	<b>0.95</b>

When compared with the SENSW PHN (11.4%) and National (12.5%) averages, there was a higher percentage of people who did not claim a GP attendance in the Snowy Mountains (18.5%), Queanbeyan (18.0%) and Goulburn – Yass (14.1%) regions (Table 6-4).

**Table 6-4: Percentage of people who did not claim a GP attendance, 2016/17**

REGION	2016/17
Goulburn - Yass	<b>14.1%</b>
Lachlan Valley	10.7%
Queanbeyan	<b>18.0%</b>
Snowy Mountains	<b>18.5%</b>
South Coast	9.8%
<b>SENSW PHN</b>	<b>11.4%</b>
<b>National</b>	<b>12.5%</b>

For the SENSW PHN residents, the GP, after-hours GP and non-GP specialist attendances increase with age (Table 6-5).

**Table 6-5: GP and specialist attendances by age group, SENSW PHN, 2016/17**

AGE GROUP	GP ATTENDANCES	AFTER-HOURS GP ATTENDANCES	SPECIALIST ATTENDANCES
<15	3.8	0.29	0.38
15-24	4.4	0.29	0.41
25-44	5.3	0.32	0.64
45-64	6.4	0.25	1.17
65+	11.7	0.37	2.62

## Potentially Preventable Hospitalisations

The rate of potentially preventable hospitalisations (PPHs) in a local area may reflect access to primary health care, as well as sociodemographic factors and health behaviours. The term PPH does not mean that a patient admitted for that condition did not need to be hospitalised at the time of admission, rather the hospitalisation could have potentially been prevented through the provision of appropriate preventative health interventions and early disease management in primary care and community-based care settings. As such PPH rates are indicators of the effectiveness of non-hospital care.<sup>52</sup>

In 2016/17 the age-standardised rate of PPHs was 2,960 per 100,000 people for regional NSW. For catchment LGAs, the rate was higher in Hilltops (4,071), Eurobodalla (3,153) and Cowra (2,997). This may reflect an under-developed community-based service model, inclusive of insufficient access to GP services in these areas (Table 6-6).

**Table 6-6: Admissions for all PPH, ASR per 100,000 population, 2016/17**

LGA	PPH (ASR per 100,000)
Bega Valley	2,475.6
Eurobodalla	<b>3,152.7</b>
Snowy Monaro Regional	2,223.1
Goulburn Mulwaree	2,977.9
Queanbeyan-Palerang Regional	2,369.1
Upper Lachlan Shire	2,851.3
Yass Valley	2,647.1
Cowra	<b>2,996.9</b>
Hilltops	<b>4,070.9</b>
<b>NSW</b>	<b>2,730.6</b>
<b>Rest of NSW (excl. Greater Sydney)</b>	<b>2,959.9</b>

The *SENSW PHN Population Health Profile* (March 2020) further outlines age-standardised rates of PPHs in 2017/18 by SA3 and PPH category. Comparison with the SENSW PHN rates indicates:

- Higher rates of acute and chronic PPHs in Goulburn – Mulwaree and South Coast;
- Higher rates of chronic PPHs Queanbeyan;
- Lower rates of vaccine preventable PPHs across all SA3s; and
- Significantly higher total PPHs in Goulburn – Mulwaree.

**Table 6-7: Age standardised PPH per 100,000 population, per SA3, 2017/18\***

SA3	ACUTE	CHRONIC	VACCINE PREVENTABLE	TOTAL
Goulburn - Mulwaree	<b>1,314</b>	<b>1,522</b>	239	<b>3,041</b>
Queanbeyan	830	<b>1,112</b>	217	2,126
Snowy Mountains	840	992	256	2,078
South Coast	<b>1,340</b>	<b>1,196</b>	177	1,513
<b>SENSW PHN</b>	<b>1,116</b>	<b>1,033</b>	<b>264</b>	<b>2,383</b>
<b>National</b>	<b>1,286</b>	<b>1,233</b>	<b>313</b>	<b>2,793</b>

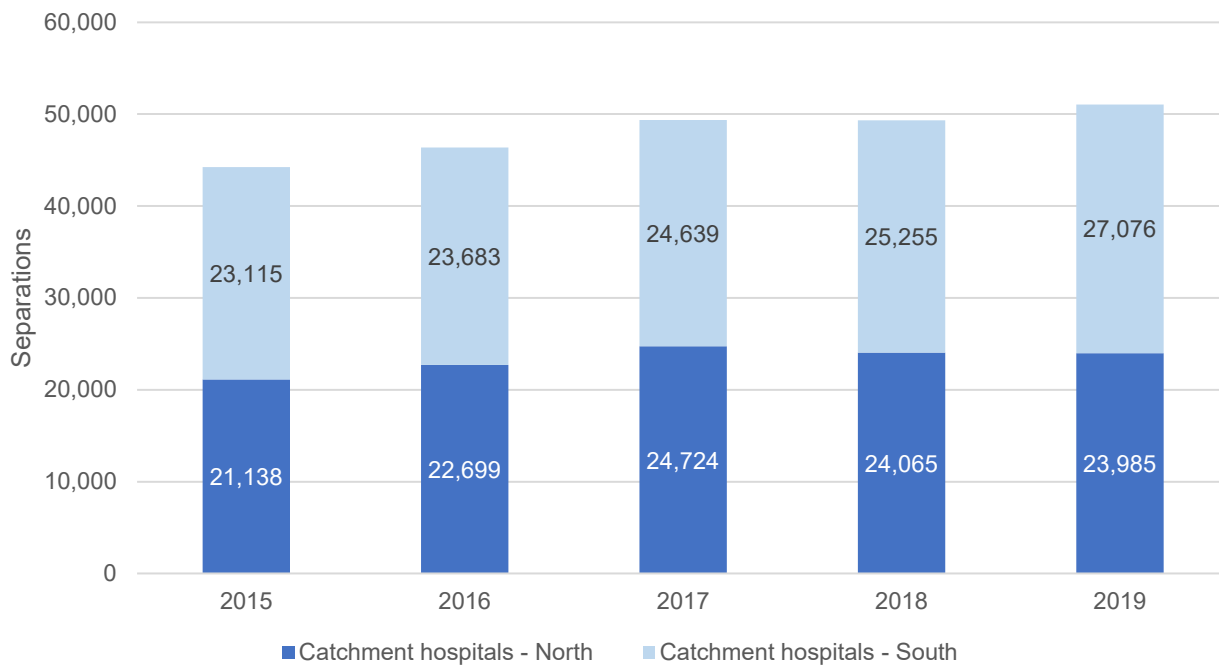
\* Lachlan Valley SA3 is not in-scope for the SENSW PHN.

52. <https://www.aihw.gov.au/reports/primary-health-care/potentially-preventable-hospitalisations/contents/overview>

## Acute hospital services

In total there were 51,061 acute separations from public hospitals in the catchment in 2018-19, an increase of 3.6% per annum from 44,253 separations in 2014-15. As shown in Figure 6-2, there was a higher volume of acute separations (27,076) at hospitals in the south of the catchment compared to the north (23,985). The per annum growth rate for south catchment hospitals was 4.0% per annum compared to 3.2% for the north.

**Figure 6-2: Acute separations from public hospitals in the catchment, 2014-15 to 2018-19**



From Table 6-8 it can be seen that the largest hospital in the north of the catchment is Goulburn Base Hospital which had 9,665 acute separations in 2018-19 followed by Queanbeyan Health Service with 7,685 acute separations.

In the south of the catchment the largest hospital is Bega South East Regional Hospital which had 11,104 acute separations in 2018-19. The next largest hospital in the south of the catchment is Moruya-Eurobodalla Health Service with 7,051 separations.

These four largest hospitals (Goulburn Base Hospital, Queanbeyan Health Service, Bega South East Regional Hospital and Moruya-Eurobodalla Health Service) comprised 70% of total acute hospital separations from hospitals in the catchment, up from 65% in 2014-15.

**Table 6-8: Acute separations from catchment hospitals, 2014-15 to 2018-19**

(a) Acute activity by catchment hospital, 2014-15 to 2018-19

Catchment hos..	Hospital Name	2014-15	2015-16	2016-17	2017-18	2018-19
Catchment hospitals - North	Goulburn	8,678	9,032	9,655	9,817	9,665
	Queanbeyan	6,105	7,319	7,829	7,095	7,685
	Cowra	2,572	2,669	3,098	3,097	2,932
	Young	2,276	2,203	2,463	2,427	2,153
	Crookwell	729	786	970	1,002	880
	Yass	665	566	598	507	529
	Braidwood	96	119	92	78	79
	Goulburn Bourke St Health Service	17	5	19	42	62
	Total	21,138	22,699	24,724	24,065	23,985
Catchment hospitals - South	Bega	7,614	8,388	9,318	10,474	11,104
	Moruya	6,385	6,465	6,729	6,484	7,051
	Batemans Bay	4,283	4,011	4,391	4,196	4,344
	Cooma	3,506	3,866	3,832	3,795	4,206
	Pambula	1,056	722	210	149	254
	Bombala	271	231	159	157	117
	Total	23,115	23,683	24,639	25,255	27,076
Grand Total	44,253	46,382	49,363	49,320	51,061	

(b) Acute activity % by catchment hospital, 2014-15 to 2018-19

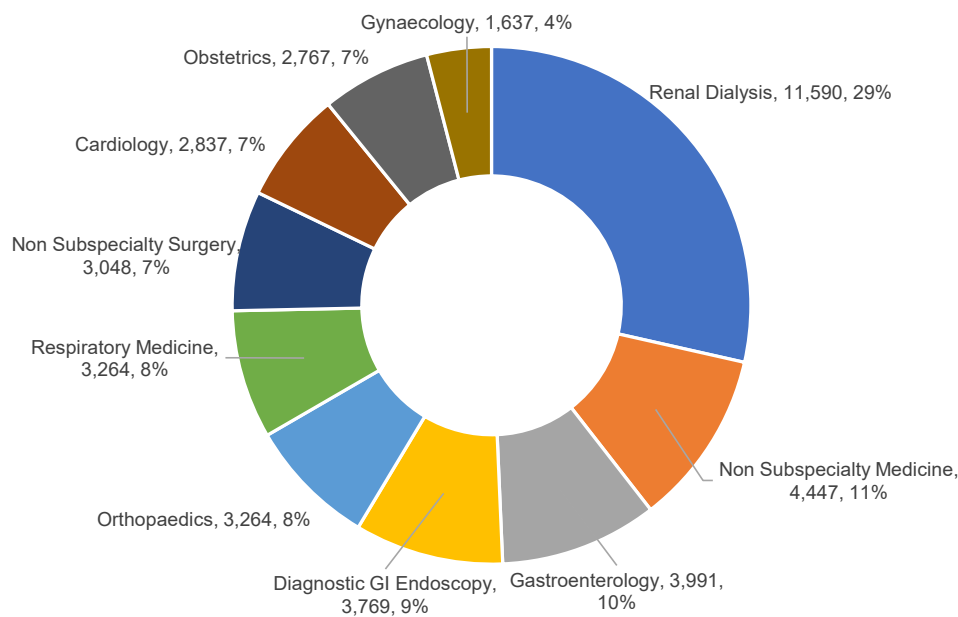
Catchment hos..	Hospital Name	2014-15 %	2015-16 %	2016-17 %	2017-18 %	2018-19 %
Catchment hospitals - North	Goulburn	19.61%	19.47%	19.56%	19.90%	18.93%
	Queanbeyan	13.80%	15.78%	15.86%	14.39%	15.05%
	Cowra	5.81%	5.75%	6.28%	6.28%	5.74%
	Young	5.14%	4.75%	4.99%	4.92%	4.22%
	Crookwell	1.65%	1.69%	1.97%	2.03%	1.72%
	Yass	1.50%	1.22%	1.21%	1.03%	1.04%
	Braidwood	0.22%	0.26%	0.19%	0.16%	0.15%
	Goulburn Bourke St Health Service	0.04%	0.01%	0.04%	0.09%	0.12%
	Total	47.77%	48.94%	50.09%	48.79%	46.97%
Catchment hospitals - South	Bega	17.21%	18.08%	18.88%	21.24%	21.75%
	Moruya	14.43%	13.94%	13.63%	13.15%	13.81%
	Batemans Bay	9.68%	8.65%	8.90%	8.51%	8.51%
	Cooma	7.92%	8.34%	7.76%	7.69%	8.24%
	Pambula	2.39%	1.56%	0.43%	0.30%	0.50%
	Bombala	0.61%	0.50%	0.32%	0.32%	0.23%
Total	52.23%	51.06%	49.91%	51.21%	53.03%	
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%	

### Specialties

The top 20 specialties accounted for 95% of acute hospital activity in 2018-19 and the top 10 specialties accounted for 80% of acute activity. As shown in Figure 6-3, renal dialysis was the largest specialty by volume (11,590) of acute separations accounting for 29% in 2018-19. The next six largest specialties by volume of separations were:

- Non-Subspecialty Medicine, 4,447 separations, 9%;
- Gastroenterology, 3,991 separations, 8%;
- Diagnostic GI Endoscopy, 3,769 separations, 7%;
- Orthopaedics, 3,264 separations, 6%;
- Respiratory Medicine, 3,264 separations, 6%; and
- Non Subspecialty Surgery, 3,048 separations, 6%.

**Figure 6-3: Top 10 specialties treated at catchment hospitals, 2018-19**



As shown in Table 6-9, there were a number of specialties with very high per annum growth rates of more than 5% including:

- Non subspecialty medicine, 7.9%;
- Diagnostic GI Endoscopy, 6.1%;
- Orthopaedics, 5.2%; and
- Neurosurgery, 5.1%.

**Table 6-9: Acute hospital activity by specialty type, Top 20 specialties, 2014-15, 2018-19**

Specialty	2014-15	2018-19	Change from 2014-15	Change from 2014-15 (% per annum)
23 - Renal Dialysis	10,235	11,590	1,355	3.2%
27 - Non Subspecialty Medicine	3,277	4,447	1,170	7.9%

Specialty	2014-15	2018-19	Change from 2014-15	Change from 2014-15 (% per annum)
15 - Gastroenterology	3,339	3,991	652	4.6%
16 - Diagnostic GI Endoscopy	2,975	3,769	794	6.1%
49 - Orthopaedics	2,667	3,264	597	5.2%
24 - Respiratory Medicine	2,758	3,264	506	4.3%
54 - Non Subspecialty Surgery	2,619	3,048	429	3.9%
11 - Cardiology	2,650	2,837	187	1.7%
72 - Obstetrics	2,383	2,767	384	3.8%
71 - Gynaecology	1,513	1,637	124	2.0%
21 - Neurology	1,256	1,411	155	3.0%
50 - Ophthalmology	1,130	1,147	17	0.4%
51 - Plastic and Reconstructive Surgery	1,015	1,092	77	1.8%
52 - Urology	953	992	39	1.0%
17 - Haematology	984	968	-16	-0.4%
44 - Upper GIT Surgery	773	832	59	1.9%
46 - Neurosurgery	410	501	91	5.1%
81 - Drug and Alcohol	453	490	37	2.0%
48 - ENT & Head and Neck	334	321	-13	-1.0%
82 - Psychiatry - Acute	513	316	-197	-11.4%
Other	2,016	2,377	361	4.2%
Grand Total	44,253	51,061	6,808	3.6%

## Market reach

Market reach defines the place of residence of patients who used hospitals in the catchment. It can be seen from Table 6-10 that in 2018-19, the *overwhelming majority* (92.0%) of patients live locally: 50.1% in LGAs in the south of the catchment and 41.8% in north of the catchment. A small proportion (3.7%) who attended catchment hospitals live in NSW LGAs outside the catchment, even fewer live in the ACT (2.8%), 1.1% of patients were from Victoria and 0.5% from other states or from overseas.



**Table 6-10: Market reach**

(a) Market reach for catchment hospitals acute separations, 2014-15 to 2018-19

Patient location	2014-15	2015-16	2016-17	2017-18	2018-19
Catchment LGAs - South	21,826	22,279	23,268	23,829	25,598
Catchment LGAs - North	18,668	20,239	22,275	21,249	21,364
NSW - out of catchment	1,789	1,770	1,801	1,960	1,888
ACT	1,191	1,375	1,311	1,542	1,408
Victoria	473	416	454	493	559
Other states & overseas, other	306	303	254	247	244
Grand Total	44,253	46,382	49,363	49,320	51,061

(b) Market reach for catchment hospitals acute separations, 2014-15 to 2018-19

Patient location	2014-15 %	2015-16 %	2016-17 %	2017-18 %	2018-19 %
Catchment LGAs - South	49.32%	48.03%	47.14%	48.32%	50.13%
Catchment LGAs - North	42.18%	43.64%	45.12%	43.08%	41.84%
NSW - out of catchment	4.04%	3.82%	3.65%	3.97%	3.70%
ACT	2.69%	2.96%	2.66%	3.13%	2.76%
Victoria	1.07%	0.90%	0.92%	1.00%	1.09%
Other states & overseas, other	0.69%	0.65%	0.51%	0.50%	0.48%
Grand Total	100.00%	100.00%	100.00%	100.00%	100.00%

### Market share

Market share is defined as the share of separations by patients who live in the catchment and attend local catchment hospitals relative to the total number of patient separations from the catchment treated at all hospitals, including hospitals located outside the catchment.

- **Total hospital market share** is defined as catchment public hospital separations as a proportion of all hospital separations from the catchment, including both public and private hospital separations.
- **Total public hospital market share** is defined as catchment public hospital separations as a proportion of all public hospital separations from the catchment.

Given that the SENSW catchment is adjacent to the ACT, and there are a substantial number of patients from the catchment who receive hospital treatment in the ACT, it is important to include patients from the catchment who were treated in the ACT at Canberra Hospital and Calvary Public Hospital Bruce.

As shown in Table 6-11, in 2018-19, there were 45,037 patient separations at catchment hospitals and in total, there were 79,356 separations by patients who lived in the catchment. This means the total hospital market share for the catchment hospitals was 57%.

It can be seen that out of catchment NSW public hospitals comprised 57% of total hospital market share for the catchment, private hospitals 12% and ACT hospitals 23%.

**Table 6-11: Use of acute hospital services by catchment residents and total hospital market share, 2014-15 to 2017-18**

Hospital location	2014-15	2015-16	2016-17	2017-18
Catchment hospitals	40,477	42,513	45,524	45,037
Out of catchm't NSW public hosps	7,484	7,499	7,202	7,183
Private Hospitals	9,007	9,035	9,046	9,255

ACT Health	15,448	16,793	17,332	17,881
<b>Total NSW &amp; ACT</b>	<b>72,416</b>	<b>75,840</b>	<b>79,104</b>	<b>79,356</b>
Hospital location	2014-15	2015-16	2016-17	2017-18
Catchment hospitals	56%	56%	58%	57%
Out of catchm't NSW public hosps	10%	10%	9%	9%
Private Hospitals	12%	12%	11%	12%
ACT Health	21%	22%	22%	23%
<b>Total NSW &amp; ACT</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Table 6-12 summarise public hospital separations by patients from the catchment which totalled 70,101, of which 45,037 were public hospitals located in the catchment, yielding a public hospital market share of 64%.

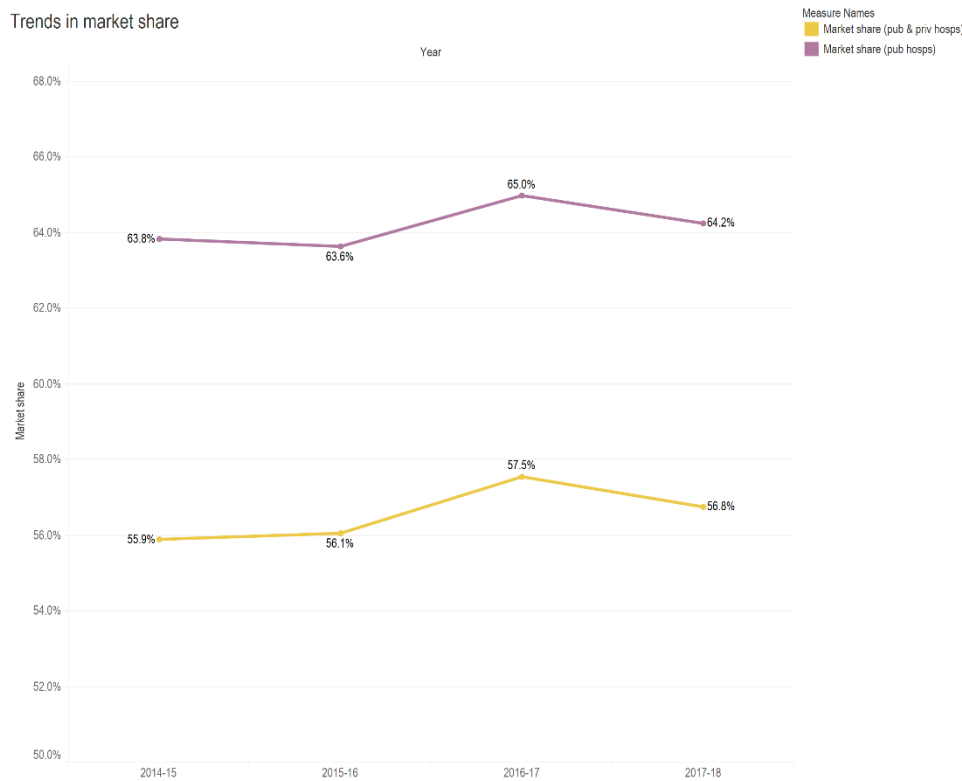
It can be seen that out of catchment NSW public hospitals accounted for 10% of catchment public hospital market share and ACT hospitals 26%.

**Table 6-12: Use of public acute hospital services by catchment residents and public hospital market share, 2014-15 to 2017-18**

Hospital location	2014-15	2015-16	2016-17	2017-18
Catchment hospitals	40,477	42,513	45,524	45,037
Out of catchm't NSW public hosps	7,484	7,499	7,202	7,183
ACT Health	15,448	16,793	17,332	17,881
<b>Total NSW &amp; ACT</b>	<b>63,409</b>	<b>66,805</b>	<b>70,058</b>	<b>70,101</b>
Hospital location	2014-15	2015-16	2016-17	2017-18
Catchment hospitals	64%	64%	65%	64%
Out of catchm't NSW public hosps	12%	11%	10%	10%
ACT Health	24%	25%	25%	26%
<b>Total NSW &amp; ACT</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>

Figure 6-4 describes the total market share and public hospital market share trends over the last five years. Total market share has increased slightly from 55.9% to 56.8%. Public hospital market share has increased marginally from 63.8% to 64.2%.

**Figure 6-4: Total market share and public hospital market share trends 2014-15 to 2017-18**

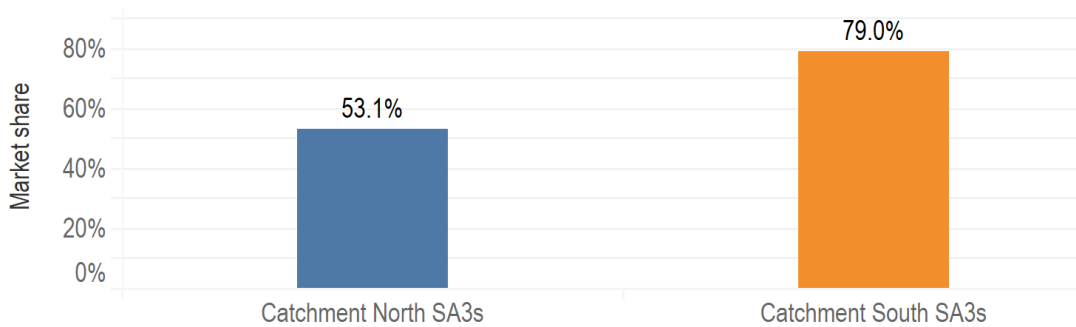


*Public hospital market share by LGA*

As shown in Figure 6-5 and Table 6-13, public hospital market share is *relatively low* for the north of the catchment, at 53.1% in 2017-18 whereas the southern catchment is *relatively high* at 79.0%.

**Figure 6-5: Public hospital catchment share**

Public hospital market share by catchment location, 2017-18



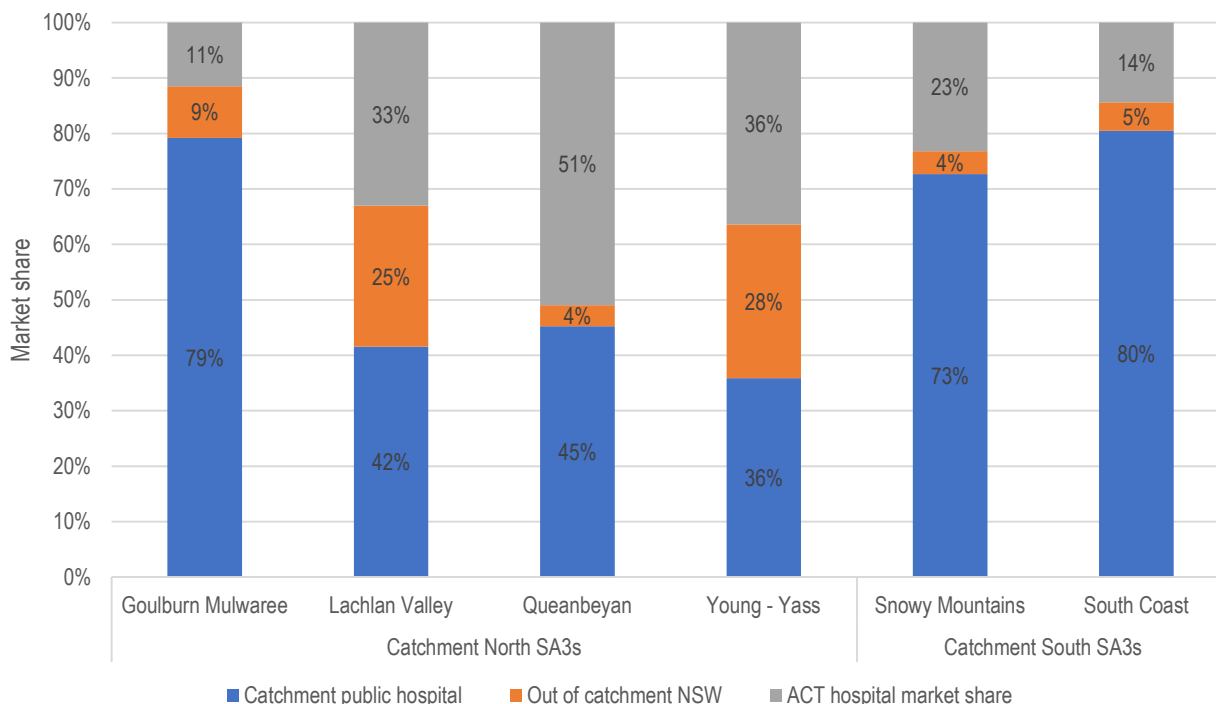
Of the SA3s in the northern catchment, Goulburn Mulwaree is relatively high at 79.21% but the remaining SA3s are very low: Lachlan Valley, 41.55%; Queanbeyan, 45.23% and Young-Yass, 35.88%.

**Table 6-13: Public hospital market share by catchment location and SA3**

SA3 (group)	SA3	Year			
		2014-15	2015-16	2016-17	2017-18
Catchment North SA3s	Goulburn Mulwaree	76.34%	76.68%	78.40%	79.21%
	Lachlan Valley	35.41%	33.06%	40.76%	41.55%
	Queanbeyan	45.80%	47.50%	48.23%	45.23%
	Young - Yass	38.27%	40.09%	40.57%	35.88%
	<b>Sub-total</b>	<b>51.78%</b>	<b>52.08%</b>	<b>54.79%</b>	<b>53.12%</b>
Catchment South SA3s	Snowy Mountains	75.05%	73.90%	72.71%	72.68%
	South Coast	80.76%	81.15%	80.60%	80.49%
	<b>Sub-total</b>	<b>79.68%</b>	<b>79.70%</b>	<b>79.05%</b>	<b>78.96%</b>

As shown in Figure 6-6, there is a relatively high flow of patients from northern SA3s to the ACT, with ACT market share for Lachlan Valley 33%, Queanbeyan 51% and Young-Yass 36%. The patient flow from the southern part of the catchment to the ACT is lower, with ACT market share of 23% for the Snow Mountains and 14% for the South Coast.

**Figure 6-6: Public hospital market share by SA3**



*Public hospital market share by specialty*

Table 6-14 summarises the volume of acute public hospital by separations for the Top 16 specialties by volume, together with catchment market share.

**Table 6-14: Public hospital separations and market share by specialty, Top 16 specialties, 2017-18**

Specialty	ACT Health	Catchment hospitals	Out of catchm't NSW public hosps	Total public hospitals	Catchment market share
23 - Renal Dialysis	0	11,464	232	11,696	98.0%
49 - Orthopaedics	2,205	2,753	776	5,734	48.0%
15 - Gastroenterology	1,314	3,373	399	5,086	66.3%
27 - Non Subspecialty Medicine	1,498	3,704	596	5,798	63.9%
16 - Diagnostic GI Endoscopy	299	2,904	202	3,405	85.3%
54 - Non Subspecialty Surgery	1,102	2,415	449	3,966	60.9%
24 - Respiratory Medicine	744	3,077	417	4,238	72.6%
72 - Obstetrics	1,081	2,442	183	3,706	65.9%
11 - Cardiology	744	2,464	356	3,564	69.1%
52 - Urology	1,144	876	503	2,523	34.7%
50 - Ophthalmology	468	905	345	1,718	52.7%
21 - Neurology	940	1,353	302	2,595	52.1%
71 - Gynaecology	397	1,282	246	1,925	66.6%
51 - Plastic and Reconstructive Surgery	379	797	215	1,391	57.3%
12 - Interventional Cardiology	1,160	0	306	1,466	0.0%
48 - ENT & Head and Neck	607	237	267	1,111	21.3%
Other	3,799	4,991	1,389	10,179	49.0%
Grand Total	17,881	45,037	7,183	70,101	64.2%

The ranking of specialties in Figure 6-7(a) is by market share for the catchment as a whole. It can be seen that there are three specialties with a market share of more than 70%. This 70% level of market share – or sometimes referred to as self-sufficiency – is a broad indicator of adequacy for specialties for acute hospital service planning. More complex specialties that have a higher share of cases that are undertaken in a tertiary or quaternary hospital setting, such as interventional cardiology and ENT and head/neck surgery, would be expected to have a lower self-sufficiency.

It is apparent that there are many high-volume specialties that have a relatively low level of market share, that is, below 70%, including:

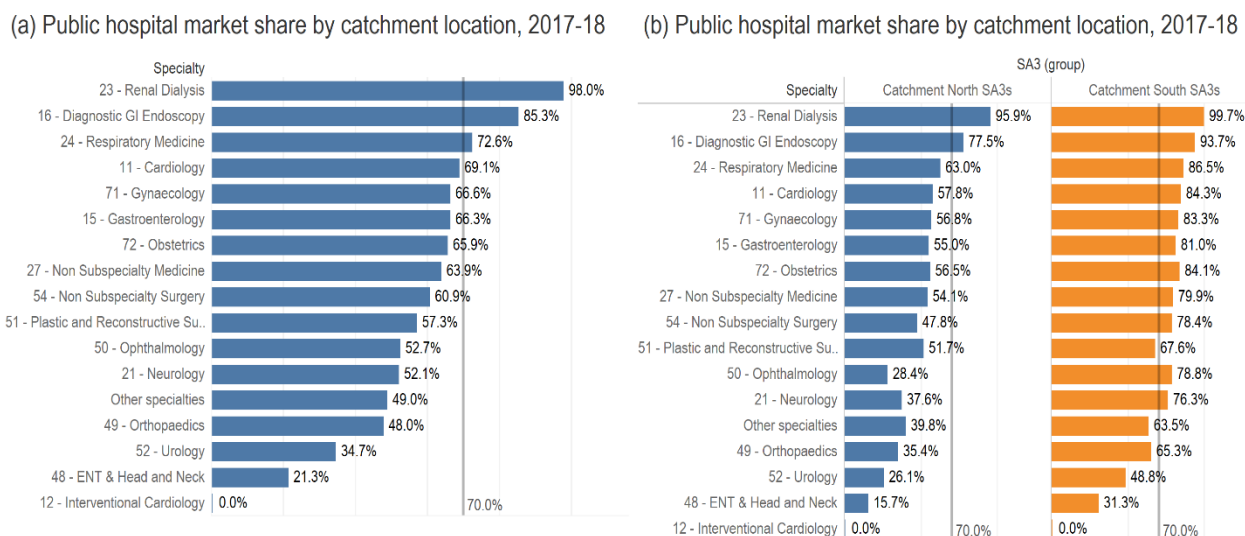
- Gynaecology, 1,282 catchment hospital separations, 66.6%;
- Gastroenterology, 3,373 catchment hospital separations, 66.3%;
- Obstetrics, 2,442 catchment hospital separations, 65.9%;
- Non-subspecialty medicine, 3,704 catchment hospital separations, 63.9%;
- Non-subspecialty surgery, 2,415 catchment hospital separations, 60.9%;
- Plastic and reconstructive surgery, 797 catchment hospital separations, 57.3%;
- Ophthalmology, 905 catchment hospital separations, 52.7%;
- Neurology, 1,353 catchment hospital separations, 52.1%;
- Orthopaedics, 2,753 catchment hospital separations, 48.0%; and
- Urology, 876 catchment hospital separations, 34.7%.

In Figure 6-7(b), market share is analysed separately for the north of the catchment compared to the geographic areas in the south of the catchment.

- **Northern catchment:** it is apparent that most specialties have relatively high market share, in excess of 70%, with five exceptions:
  - ▶ Plastic and reconstructive surgery, 67.6%;

- ▶ Orthopaedics, 65.3%;
- ▶ Urology, 48.8%;
- ▶ ENT and head and neck, 31.3%; and
- ▶ Interventional cardiology, 0%.
- **Southern catchment:** all but two specialties (diagnostic GI endoscopy (77.5%) and renal dialysis (95.9%) have a market share below 70%, with very low market share of less than 50% for six specialties:
  - ▶ Non-subspecialty surgery, 47.8%;
  - ▶ Ophthalmology, 28.4%;
  - ▶ Neurology, 37.6%;
  - ▶ Orthopaedics, 35.4%;
  - ▶ Urology, 26.1%; and
  - ▶ ENT and head/neck, 15.7%; and
  - ▶ Interventional cardiology, 0%.

**Figure 6-7: Market share by specialty, 2017-18**



As shown in Figure 6-8, there is high market share (above 70%) across most specialties for the two SA3 areas in the southern catchment, Snowy Mountains and South Coast. Exceptions include the following specialties for the Snowy Mountains:

- Plastic and reconstructive surgery, 44.8%;
- Ophthalmology, 50.0%;
- Orthopaedics, 52.4%;
- Urology, 41.6%; and
- ENT & head and neck, 27.3%.

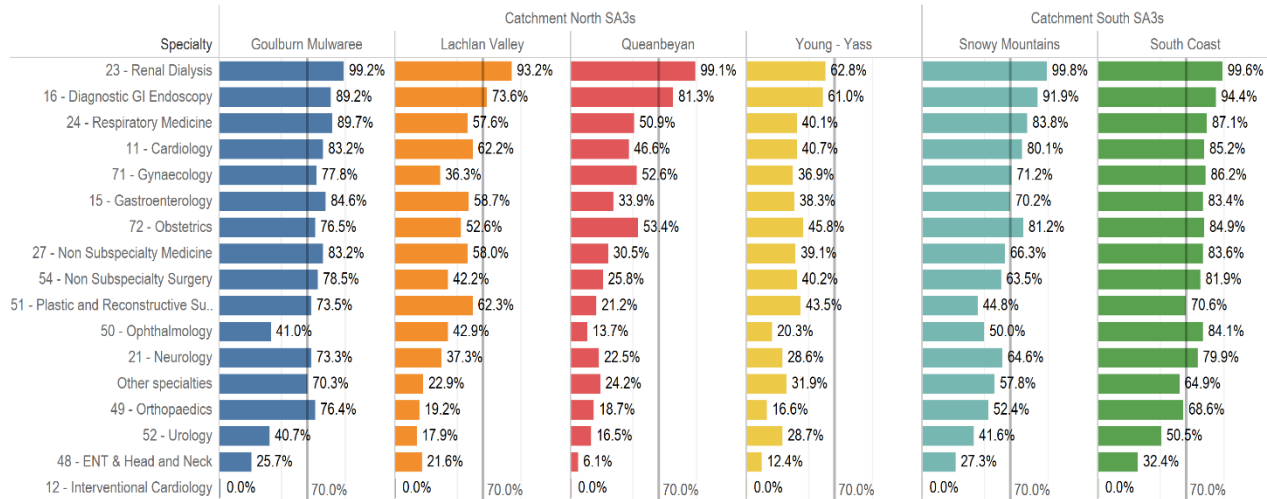
For the northern catchment SA3s, only one geographic area, Goulburn Mulwaree, tends to have high market share (above 70%) across most specialties, with the following exceptions:

- Ophthalmology, 41.0%;
- Urology, 40.7%; and
- ENT & Head and Neck, 25.7%.

The other three SA3s in the northern catchment, Lachlan Valley, Queanbeyan and Young-Yass, there is relatively low market share (below 70%) across most specialties.

**Figure 6-8: Specialty market share by SA3 by catchment area, 2017-18**

Public hospital market share by SA3, 2017-18



### Subacute hospital services

As shown in Table 6-15, there was a 5% per annum increase in subacute separations from 2,148 in 2014-15 to 2,605 in 2018/19. The greatest rate of growth was in maintenance care, 9.7% per annum growth from 380 to 550 separations over the five-year period followed by palliative care at 7.0% per annum growth from 502 to 657 separations.

Rehabilitation separations comprised more than 50% ( ) of subacute separations but had a relatively modest 2.5% per annum growth rate from 1,264 to 1,397 separations over the five-year period.

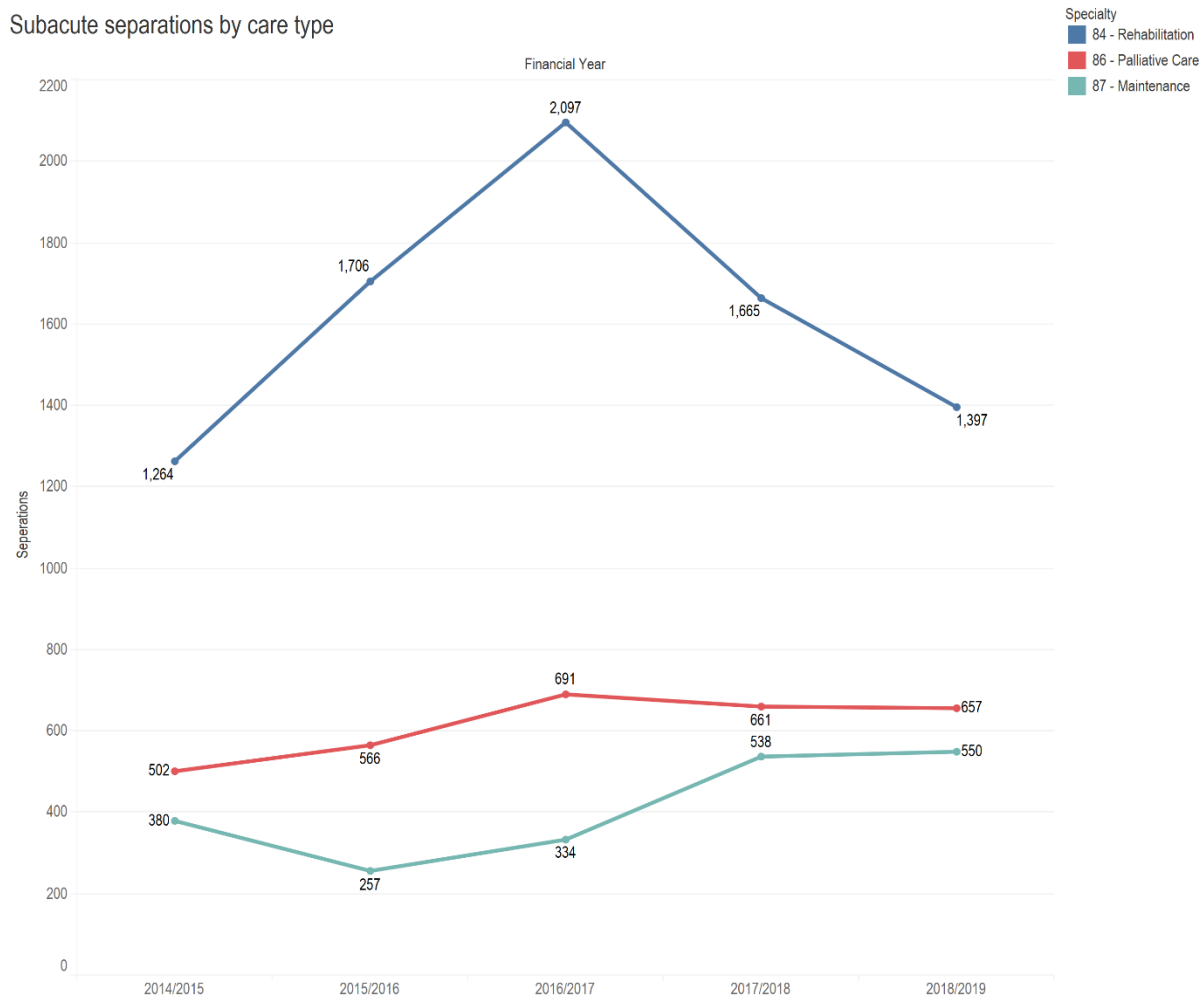
**Table 6-15: Subacute separations by care type, 2014-15 to 2018-19**

Specialty	2014/15	2015/16	2016/17	2017/18	2018/19	Change from 2014-15 to 2018-19	Per cent change p.a. from 2014-15 to 2018-20
84 - Rehabilitation	1,264	1,706	2,097	1,665	1,397	133	2.5%
85 - Psychogeriatric Care	2	5	5		1	-1	-15.9%
86 - Palliative Care	502	566	691	661	657	155	7.0%
87 - Maintenance	380	257	334	538	550	170	9.7%
<b>Total</b>	<b>2,148</b>	<b>2,534</b>	<b>3,127</b>	<b>2,864</b>	<b>2,605</b>	<b>457</b>	<b>4.9%</b>

It is apparent from Figure 6-9 that there was a large increase in rehabilitation separations in the period 2014-15 to 2015-16, from 1,264 separations to 2,097 separations followed by an almost equally steep reduction to 1,397 separations in 2018-19.



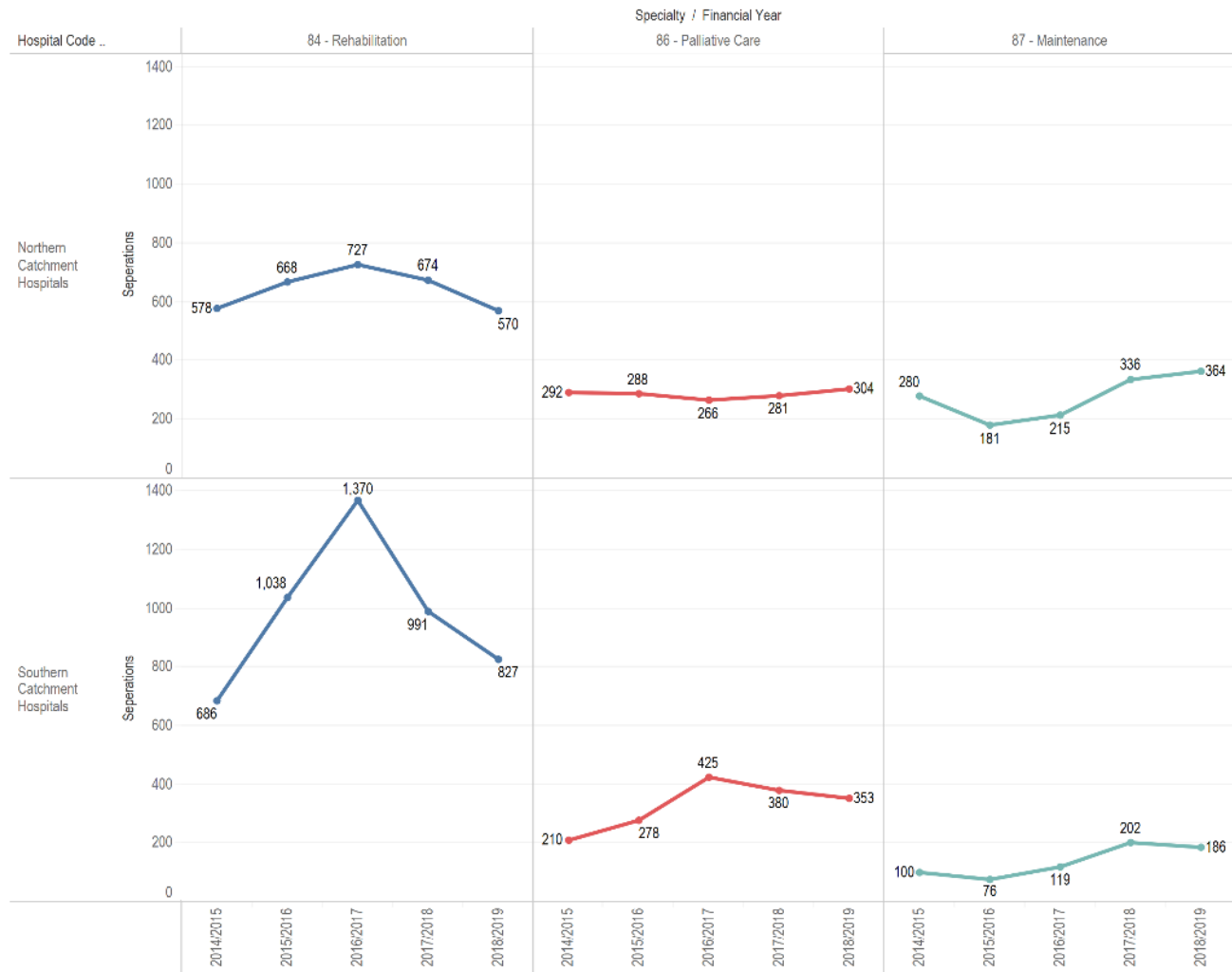
**Figure 6-9: Subacute activity at catchment hospitals, 2014-15 to 2018-19**



As shown in Figure 6-10, there was a similar trend of increasing and then declining rehabilitation activity for hospitals in the northern catchment and the southern catchment. It is apparent that the upward increase in rehabilitation followed by a sharp decline was steepest in the southern catchment hospitals.

The trend for palliative care was more stable across both catchments and although there was some initial increase followed by a decrease for maintenance care, this care type had far less volatility than was seen for rehabilitation.

**Figure 6-10: Subacute care type by catchment hospital location**



The volatility in rehabilitation activity is clearly seen from the hospital analysis in Table 6-16. In the northern catchment, two hospitals had a net reduction over the five-year period:

- Crookwell had a -51.2% per annum reduction of 50 separations from 53 to 3 separations; and
- Queanbeyan had a -17.1% per annum reduction of 48 separations from 91 to 43 separations.

In the southern catchment, two hospitals had a net reduction over the five-year period:

- Bateman’s Bay had a -26.1% per annum reduction of 141 separations from 201 to 60 separations; and
- Pambula had a -25.4% per annum reduction of 107 separations from 155 to 48 separations.

It can also be seen that there was a large fluctuation in rehabilitation activity at Bega, which increased steeply from 190 separations in 2014-15 to 668 separations in 2016/2017. This was followed by a steep decline to 231 separations in 2018-19.

**Table 6-16: Rehabilitation by catchment location by hospital**

Catchment location	Hospital	2014/2015	2015/2016	2016/2017	2017/2018	2018/2019	Change from 2014-15 to 2018-19	Per cent change p.a. from 2014-15 to 2018-19
Northern Catchment Hospitals	L206 - Cowra	14	15	6	35	41	27	30.8%
	N205 - Braidwood	3		2	5	8	5	27.8%
	N207 - Crookwell	53	25	23	1	3	-50	-51.2%
	N209 - Goulburn	308	402	446	444	387	79	5.9%
	N215 - Queanbeyan	91	108	128	66	43	-48	-17.1%
	N216 - Goulburn Bourke St	95	112	118	117	81	-14	-3.9%
	N217 - Yass	8	5		6	7	-1	-3.3%
	N218 - Young	6	1	4			-6	0.0%
	Sub-total	578	668	727	674	570	-8	-0.3%
Southern Catchment Hospitals	N201 - Batemans Bay	201	112	225	194	60	-141	-26.1%
	N202 - Bega	190	554	688	402	421	231	22.0%
	N203 - Bombala	1					-1	0.0%
	N206 - Cooma	28	41	61	65	56	28	18.9%
	N211 - Moruya	111	201	222	213	242	131	21.5%
	N214 - Pambula	155	130	174	117	48	-107	-25.4%
	Sub-total	686	1,038	1,370	991	827	141	4.8%
<b>Grand Total</b>		1,264	1,706	2,097	1,665	1,397	133	2.5%

### Market share

The market share analysis for subacute is summarised in Table 6-17. There were 1,317 rehabilitation separations from the LHD catchment that attended hospitals within the catchment, a market share of 68%, with just over one quarter (29%) of catchment patients receiving services from the ACT. Market share for maintenance care was 76% and for palliative care, 76%.

**Table 6-17: Subacute market share, SNSW LHD catchment, 2018-19**

Hospital	Rehabilitation	Palliative Care	Maintenance	Total
SNSW LHD hospitals	1,317	552	525	2,395
Other NSW hospitals	54	10	22	88
ACT Health	568	162	140	870
Other states	11	1	0	12
<b>Sub-total</b>	<b>1,950</b>	<b>725</b>	<b>687</b>	<b>3,365</b>
SNSW LHD	68%	76%	76%	71%
Other NSW hospitals	3%	1%	3%	3%
ACT Health	29%	22%	20%	26%
Other states	1%	0%	0%	0%

<b>Sub-total</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>	<b>100%</b>
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Table 6-18 below provides the market share for the northern and southern parts of the catchment.

**Table 6-18: Subacute market share, SNSW LHD catchment by north and south, 2018-19**

Location	Hospital	Rehabilitation	Palliative Care	Maintenance	Total
North	SNSW LHD	509	205	344	1059
	Other NSW	24	3	7	34
	ACT Health	395	125	77	597
	Other states	4	0	0	4
	Sub-total	932	333	428	1,694
South	SNSW LHD	808	347	181	1,336
	Other hospitals	30	7	15	54
	ACT Health	173	37	63	273
	Other states	7	1	0	8
	Sub-total	1,018	392	259	1,671
	Total	1,950	725	687	3,365

Location	Hospital	Rehabilitation	Palliative Care	Maintenance	Total
North	<b>SNSW LHD</b>	<b>55%</b>	<b>62%</b>	<b>80%</b>	<b>63%</b>
	Other NSW	3%	1%	2%	2%
	ACT Health	42%	38%	18%	35%
	Other states	0%	0%	0%	0%
	Sub-total	100%	100%	100%	100%
South	<b>SNSW LHD</b>	<b>79%</b>	<b>89%</b>	<b>70%</b>	<b>80%</b>
	Other hospitals	3%	2%	6%	3%

Location	Hospital	Rehabilitation	Palliative Care	Maintenance	Total
	ACT Health	17%	9%	24%	16%
	Other states	1%	0%	0%	0%
	Sub-total	100%	100%	100%	100%

It can be seen that NSW LHD hospitals had relatively high market share in the south, with 79% for rehabilitation and 89% for palliative care. By contrast, hospitals in the north had relatively low market share at 55% for rehabilitation and 62% for palliative care. It would be expected that subacute market share would be at least at 80% for both the north and the south of the catchment.

### Key messages – service utilisation

- Goulburn-Mulwaree SA3 had the highest rate of GP MBS service use at 522.0 per 100 people with Queanbeyan SA3 the lowest at 435.2 in 2017-18
- Goulburn-Mulwaree SA3 had the highest rate of potentially preventable hospital admissions in 2017-18 at 3,041 per 100,000 population compared to one half that rate (1,513) in the South Coast SA3.
- The four largest hospitals in the SE NSW RTH (Goulburn Base Hospital, Queanbeyan Health Service, Bega South East Regional Hospital and Moruya-Eurobodalla Health Service) comprised 70% of total acute hospital separations from hospitals in the catchment, up from 65% in 2014-15.
- Public hospital separations by patients from the SE NSW RTH catchment totalled 70,101 in 2017-18, of which 45,037 were public hospitals located in the catchment, yielding a public hospital market share of 64%.
- Out of catchment NSW public hospitals accounted for 10% of catchment public hospital market share and ACT hospitals 26%.
- Public hospital market share is relatively low for the north of the catchment, at 53.1% in 2017-18 whereas the south of the catchment is relatively high at 79.0%.
- Sub-acute services had somewhat higher market share than acute services: in 2017-18 there was 68% market share for rehabilitation and with just over one quarter (29%) of catchment patients receiving rehabilitation services from the ACT. Market share for maintenance care was 76% and for palliative care, 76%.

## 7. Workforce

The following outlines available data in relation to the workforce distribution in the region.

### 7.1. GP WORKFORCE SUPPLY

#### 7.1.1. Regional training hub survey of GP clinics

The Regional Training Hub undertook a survey of all community-based practices delivering GP and allied health services in the SE NSW region. The time-period for the survey was July to December 2020. A total of 62 clinics responded to the survey with 11 non-respondents. Data for GP workforce from non-respondents was identified from web-site review for each practice and the FTE for non-respondents was interpolated based on the region-wide ratio of headcount to FTE (0.68). The tables below present the results of the survey for the surveyed GP workforce.

Table 7-1 summarises the GP headcount by category of GP and also for medical students undertaking pre-vocational placements. In total there was a headcount of 341 GPs and 69 GP registrars. Within the practising GPs, there were the following sub-categories:

- 53 GP proceduralists (GP obstetricians, GP anaesthetists) or GP rural generalists; and
- 288 GPs (with no specified sub-specialisation).

The LGA with the largest headcount was Queanbeyan-Palerang Regional with 80 GPs (23% of the region's total) and the LGA with the fewest GPs was Upper Lachlan with 7 GPs.

The Northern sub-region had 179 GPs, accounting for just over one-half (52%) of the region's GPs with 162 GPs (48%) in the Southern sub-region.

**Table 7-1: GP workforce in SE NSW by LGA and sub-region, headcount, RTH Survey, 2020**

Head count						
Sub-region	LGA	Pre-vocational training	Vocational training	General practitioners		
		Med student Y3,4	GP registrar	GP	GP proceduralist/ Rural generalist	GP total
Northern	Cowra	4	4	13	7	20
	Goulburn Mulwaree	0	10	40	0	40
	Hilltops	2	5	8	4	12
	Queanbeyan-Palerang Rg'l	6	15	71	9	80
	Upper Lachlan	1	1	7	0	7
	Yass Valley	11	6	20	0	20
<b>Northern Total</b>		<b>24</b>	<b>41</b>	<b>159</b>	<b>20</b>	<b>179</b>
Southern	Bega Valley	8	8	44	8	52
	Eurobodalla	2	13	54	8	62
	Snowy Monaro Regional	3	7	31	17	48
<b>Southern Total</b>		<b>13</b>	<b>28</b>	<b>129</b>	<b>33</b>	<b>162</b>
<b>Grand Total</b>		<b>37</b>	<b>69</b>	<b>288</b>	<b>53</b>	<b>341</b>

In terms of FTE, Table 7-2 shows that in total there was 191 FTE, with 106 FTE (56%) in the Northern sub-region and 85 FTE (44%) in the Southern sub-region.

**Table 7-2: GP workforce in SE NSW by LGA and sub-region, FTE, RTH Survey, 2020**

FTE						
Sub-region	LGA	Pre-vocational	Vocational training	General practitioners		
		Med student Y3,4 F	GP registrar	GP	GP proceduralist/ Rural generalist	GP total
Northern	Cowra	0	4	5	3	8
	Goulburn Mulwaree	0	8	28	0	28
	Hilltops	2	4	3	3	6
	Queanbeyan-Palerang Regional	2	9	42	4	46
	Upper Lachlan	0	0	2	0	2
	Yass Valley	0	3	15	0	15
<b>Northern Total</b>		<b>4</b>	<b>29</b>	<b>95</b>	<b>11</b>	<b>106</b>
Southern	Bega Valley	0	7	30	3	32
	Eurobodalla	2	8	23	4	27
	Snowy Monaro Regional	1	5	18	8	26
<b>Southern Total</b>		<b>3</b>	<b>19</b>	<b>71</b>	<b>14</b>	<b>85</b>
<b>Grand Total</b>		<b>8</b>	<b>47</b>	<b>166</b>	<b>25</b>	<b>191</b>

The survey also requested data on vacancies. There were 52 vacancies identified in total, with 27 vacancies in the Northern sub-region and 26 in the southern sub-region. Vacancies accounted for 15.4% of the reported GP supply, with similar vacancy rates in the north (15.0%) and the south (15.8%).

**Table 7-3: GP vacancies in SE NSW by LGA and sub-region, RTH Survey, 2020**

Vacancies						
Sub-region	LGA	Pre-vocational	Vocational training	General practitioners		
		Med student Y3,4	GP registrar	GP	GP proceduralist/ Rural generalist	GP total
Northern	Cowra	0	0	0	0	0
	Goulburn Mulwaree	5	1	3	0	3
	Hilltops	0	2	2	2	4
	Queanbeyan-Palerang Regional	1	2	8	6	14
	Upper Lachlan	0	1	2	0	2
	Yass Valley	0	0	4	0	4
<b>Northern Total</b>		<b>6</b>	<b>6</b>	<b>19</b>	<b>8</b>	<b>27</b>
Southern	Bega Valley	2	3	10	1	11
	Eurobodalla	4	2	3	0	3
	Snowy Monaro Regional	8	6	6	5	11
<b>Southern Total</b>		<b>14</b>	<b>11</b>	<b>20</b>	<b>6</b>	<b>26</b>
<b>Grand Total</b>		<b>20</b>	<b>17</b>	<b>38</b>	<b>14</b>	<b>52</b>



## 7.1.2. National Health Workforce Data-set survey of GP workforce

The National Health Workforce Data-set (NHWD) collects data from all medical practitioners on an annual basis as part of the annual registration survey required for AHPRA registration requirements.<sup>53</sup> The data requires that medical practitioners complete a range of data fields including demographic information such as age, sex and country of birth; and details of health qualification(s) and registration status. The survey also includes the main job area (e.g. GP, Specialist, trainee), and the number of hours worked, and the geographic location of the principal practice at which the medical practitioner worked.

### GP workforce supply

Table 7-4 summarises total GP medical workforce supply in the SE NSW RTH catchment with a headcount totalling 318 GPs, of whom 186 (58%) were in the north of the catchment and 132 (42%) in the south.

The reported 318 GPs based on the NHWD 2019 data is lower than the reported 341 GPs based on the RTH 2020 survey.

The estimates for GP FTE are based on the reported work hours of GPs from the NHWD in 2019 from the catchment. There were 288 GP FTE based on the NHWD 2019 data, which is higher than the reported 191 GP FTE based on the RTH 2020 survey.

The main reasons for differences in the reported numbers of GPs reported in the NHWD data are likely to include:

- NHWD reports geographic location based on the principal practice location for the GP – there are likely to be Canberra-based GPs who work in the RTH, particularly Queanbeyan, on a part-time basis and vice-versa, potentially understating the number of GPs working in the catchment in the NHWD;
- There is a 10% not-stated rate for main job area in the NHWD; and
- The RTH survey comprised only GPs working in community-clinics and did not include GPs working in hospitals. The NHWD includes GPs who work across all healthcare settings, including GP clinics and hospitals.

A further observation from the Table 7-4 is that the per capita supply of GPs is higher in the south of the catchment at 12.7 GP headcount per 10,000 population compared to 11.3 GP headcount per 10,000 population in the north. The LGA with the lowest GP per capita supply in the catchment is Queanbeyan at 8.9 GPs per 10,000 population. This may reflect the fact that this population is much higher than other parts of the catchment, and that a commensurately large GP workforce is required, or that the reported GP workforce is understated in the NHWD for geographic areas such as Queanbeyan where GPs may travel in or out of the LGA for work purposes. (The NHWD captures the principal practice location.)

**Table 7-4: GP medical workforce supply, NHWD, 2019**

Location	Estimated Resident Population 2019	GP headcount	GPs per 10,000 population	GP FTE	GP FTE per 10,000 population
Northern catchment	148,825	186	12.5	168	11.3

<sup>53</sup> Australian Government Department of Health, Health Workforce Data, National Health Workforce Dataset, [https://www1.health.gov.au/internet/main/publishing.nsf/Content/health\\_workforce\\_data](https://www1.health.gov.au/internet/main/publishing.nsf/Content/health_workforce_data)

Cowra (A)	12,743	17	13.3	15	12.1
Goulburn Mulwaree (A)	31,132	41	13.2	37	11.9
Hilltops (A)	18,704	22	11.8	20	10.6
Queanbeyan-Palerang Regional (A)	61,100	60	9.8	54	8.9
Upper Lachlan Shire (A)	8,059	23	28.5	21	25.8
Yass Valley (A)	17,087	23	13.5	21	12.2
<b>Southern catchment</b>	<b>93,744</b>	<b>132</b>	<b>14.1</b>	<b>119</b>	<b>12.7</b>
Bega Valley (A)	34,476	45	13.1	41	11.8
Eurobodalla (A)	38,473	54	14.0	49	12.7
Snowy Monaro Regional (A)	20,795	33	15.9	30	14.4
<b>SE NSW Regional total</b>	<b>242,569</b>	<b>318</b>	<b>13.1</b>	<b>288</b>	<b>11.9</b>

In section 9, Gap Analysis, the GP workforce is modelled based on the NHWD data. This is because it enables a comparison of the SE NSW per capita GP workforce supply compared to all other RTH's in rural NSW. In this way, the analysis allows for a comparison of the SE NSW catchment compared to the expected workforce that would be available based on the rural NSW average.

## GP workforce by age

Table 7-5 summarise the available GP workforce in the SE NSW catchment by age. On average, 31% of the GP workforce is aged 55 years and over. GPs in the northern part of the catchment are slightly younger, with 30% aged 55 years and over compared to 32% in the south.

There are three LGAs with a substantially younger GP workforce:

- Snowy Monaro Regional, 23% aged 55 years and over;
- Goulburn Mulwaree, 27% aged 55 years and over; and
- Queanbeyan-Palerang Regional, 27% aged 55 years and over.

There are three LGAs with a relatively high proportion of GPs aged 55 years and over:

- Hilltops shire, 38% aged 55 years and over;
- Bega Valley, 36% aged 55 years and over; and
- Upper Lachlan Shire, 35% aged 55 years and over.

**Table 7-5: GP workforce by age, 2019, NHWD, headcount**

Location	20-54 yrs	55+ yrs	Total	20-54 yrs	55+ yrs	Total
<b>Northern catchment</b>	<b>129</b>	<b>56</b>	<b>185</b>	<b>70%</b>	<b>30%</b>	<b>100%</b>
Cowra (A)	13	6	19	68%	32%	100%
Goulburn Mulwaree (A)	30	11	41	73%	27%	100%
Hilltops (A)	13	8	21	62%	38%	100%
Queanbeyan-Palerang Rgl	44	16	60	73%	27%	100%
Upper Lachlan Shire (A)	11	6	17	65%	35%	100%
Yass Valley (A)	18	9	27	67%	33%	100%
<b>Southern Catchment</b>	<b>88</b>	<b>41</b>	<b>129</b>	<b>68%</b>	<b>32%</b>	<b>100%</b>
Bega Valley (A)	28	16	44	64%	36%	100%
Eurobodalla (A)	36	18	54	67%	33%	100%

Location	20-54 yrs	55+ yrs	Total	20-54 yrs	55+ yrs	Total
Snowy Monaro Rg'l (A)	24	7	31	77%	23%	100%
<b>SE NSW Region</b>	<b>217</b>	<b>97</b>	<b>314</b>	<b>69%</b>	<b>31%</b>	<b>100%</b>

## GPs planning to retire

The annual registration survey asks medical practitioners to indicate whether or not they expect to be working in future years. Of the 97 GPs in the catchment aged 55 years and over, over one-third (36%) responded that they intended not to be working within the next five years.

There were three LGAs with very high attrition rates for GPs aged 55 years and over anticipated:

- Upper Lachlan Shire, 100%;
- Eurobodalla, 61%; and
- Cowra, 50%.

There was also a relatively high attrition rate anticipated for GPs aged 55 years and over at:

- Bega Valley, 38%; and
- Queanbeyan-Palerang Regional, 38%.

**Table 7-6: GP workforce aged 55+ expected to retire within 5 years, 2019, NHWD, headcount**

Location	Intend not working within 5 years	Intend not working within 5 years (%)	Total GPs aged 55 years & over
<b>Northern catchment</b>	<b>18</b>	<b>32%</b>	<b>56</b>
Cowra (A)	3	50%	6
Goulburn Mulwaree (A)	3	27%	11
Hilltops (A)	0	0%	8
Queanbeyan-Palerang Regional	6	38%	16
Upper Lachlan Shire (A)	6	100%	6
Yass Valley (A)	0	0%	9
<b>Southern catchment</b>	<b>17</b>	<b>41%</b>	<b>41</b>
Bega Valley (A)	6	38%	16
Eurobodalla (A)	11	61%	18
Snowy Monaro Regional (A)	0	0%	7
<b>SE NSW Region</b>	<b>35</b>	<b>36%</b>	<b>97</b>

These expected attrition rates are lead indicators for potential workforce shortages that require focused succession planning and supply pipeline initiatives.

## 7.2. HOSPITAL MEDICAL WORKFORCE

Medical workforce data was sought from all public hospitals in the catchment and is summarised in Table 7-8. Data is presented for SNSWLHD hospitals (data from Yass and Cowra Hospitals is not available) as of July 2020. Medical trainees comprised 22% of the medical workforce: PGY1-3 accounted for 11% and Registrars, PGY4-5 comprised 11%. The remainder of the workforce was made up by:

- Career Medical Officers (CMOs), 15%;
- Staff specialists, 8%; and
- Visiting Medical Officers (VMOs), 53%.

**Table 7-7: Medical workforce in SNSW LHD hospitals by catchment location, 2020**

Location	PGY1-3	Registrars, PGY4-5	CMO	Staff Specialist	VMO	Total
North	11.0	7.0	20.3	6.9	36.3	81.5
South	9.0	13.0	6.2	7.8	57.2	93.2
<b>Total</b>	20.0	20.0	26.5	14.7	93.4	174.6
North	14%	9%	25%	8%	45%	100%
South	10%	14%	7%	8%	61%	100%
<b>Total</b>	11%	11%	15%	8%	53%	100%

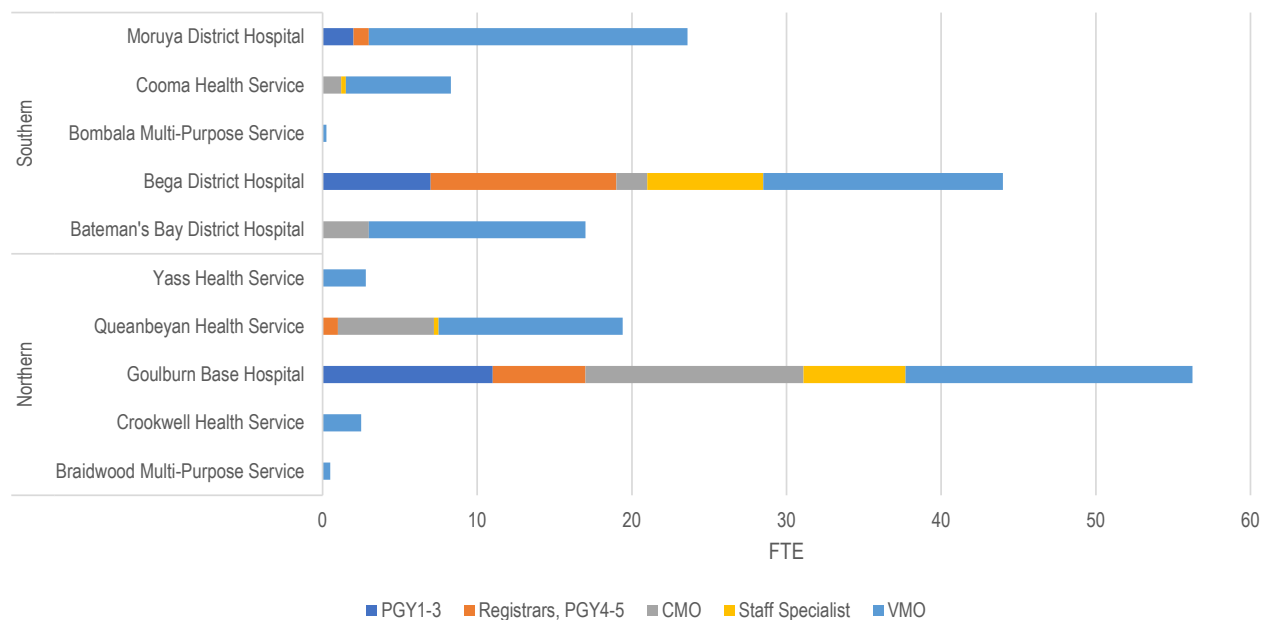
Figure 7-1 shows that the two largest hospitals in terms of medical workforce capacity are:

- Goulburn Base Hospital (56.3 FTE) in the north of the catchment; and
- Bega District Hospital (44.0 FTE) in the south of the catchment.

In descending order, the next three largest hospitals, with more than 10 FTE:

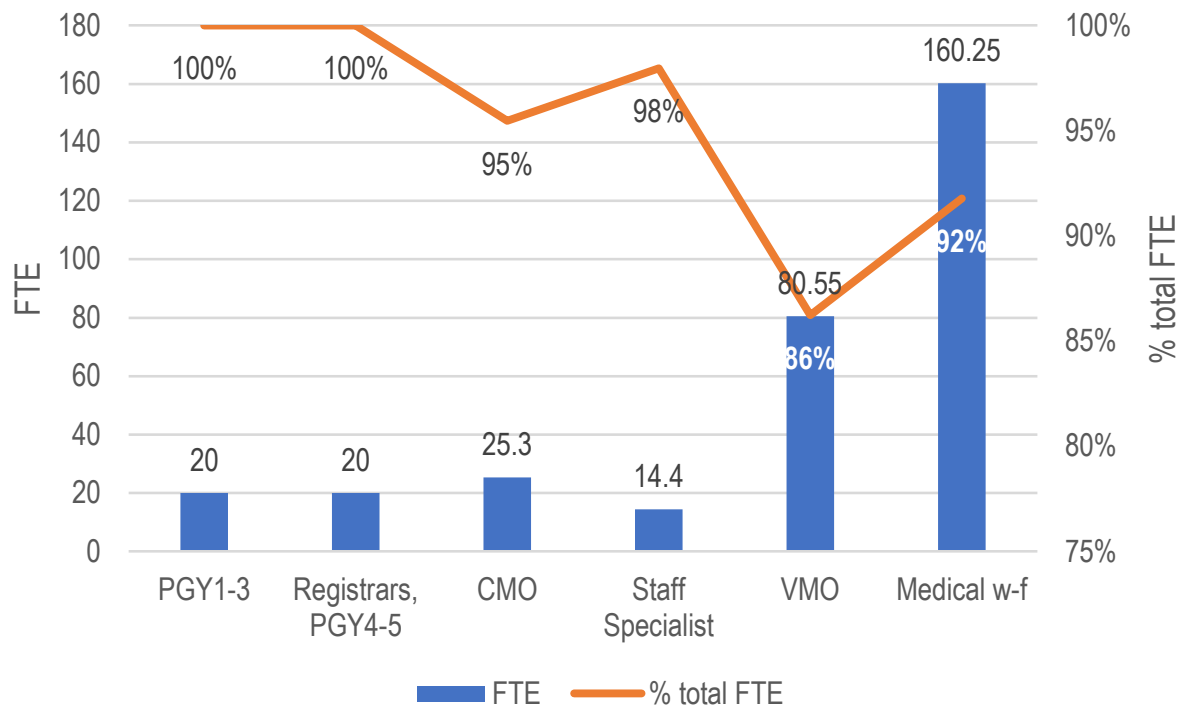
- Moruya District Hospital, 23.6 FTE;
- Queanbeyan Health Service, 19.4 FTE; and
- Bateman’s Bay Hospital, 17.0 FTE.

**Figure 7-1: Medical workforce by location by health service, 2020**



As shown in Figure 7-2, the top five hospitals in terms of the size of medical workforce accounted 92% of total FTE (160.3 FTE). These five hospitals accounted for 100% of the trainee medical workforce, 95% of CMOs, 98% of staff specialists and 86% of VMOs.

**Figure 7-2: Medical workforce for top five hospitals, 2020**



The breakdown of the medical workforce by health service and by workforce categories is summarised in Table 7-8.

**Table 7-8: Medical workforce by health service by type**

Location	Health Service	PGY1-3	Registrar, PGY4-5	CMO	Staff Specialist	VMO	Total
<b>Northern</b>	Braidwood MPS	0	0	0	0	0.5	0.5
	Crookwell Health Service	0	0	0	0	2.5	2.5
	Goulburn Base Hospital	11	6	14.1	6.6	18.55	56.25
	Queanbeyan Health Service	0	1	6.2	0.3	11.9	19.4
	Yass Health Service	0	0	0	0	2.8	2.8
<b>Northern Total</b>		<b>11</b>	<b>7</b>	<b>20.3</b>	<b>6.9</b>	<b>36.25</b>	<b>81.45</b>
<b>Southern</b>	Bateman's Bay District Hospital	0	0	3	0	14	17
	Bega District Hospital	7	12	2	7.5	15.5	44
	Bombala MPS	0	0	0	0	0.25	0.25
	Cooma Health Service	0	0	1.2	0.3	6.8	8.3
	Moruya District Hospital	2	1	0	0	20.6	23.6
<b>Southern Total</b>		<b>9</b>	<b>13</b>	<b>6.2</b>	<b>7.8</b>	<b>57.15</b>	<b>93.15</b>
<b>Total</b>		<b>20</b>	<b>20</b>	<b>26.5</b>	<b>14.7</b>	<b>93.4</b>	<b>174.6</b>

### 7.3. HOSPITAL WORKFORCE BY SPECIALTY

It can be seen from Figure 7-3 that the medical workforce is concentrated in a number of high-volume specialties. The top eight specialties accounted for three quarters (75%) of the total hospital workforce:

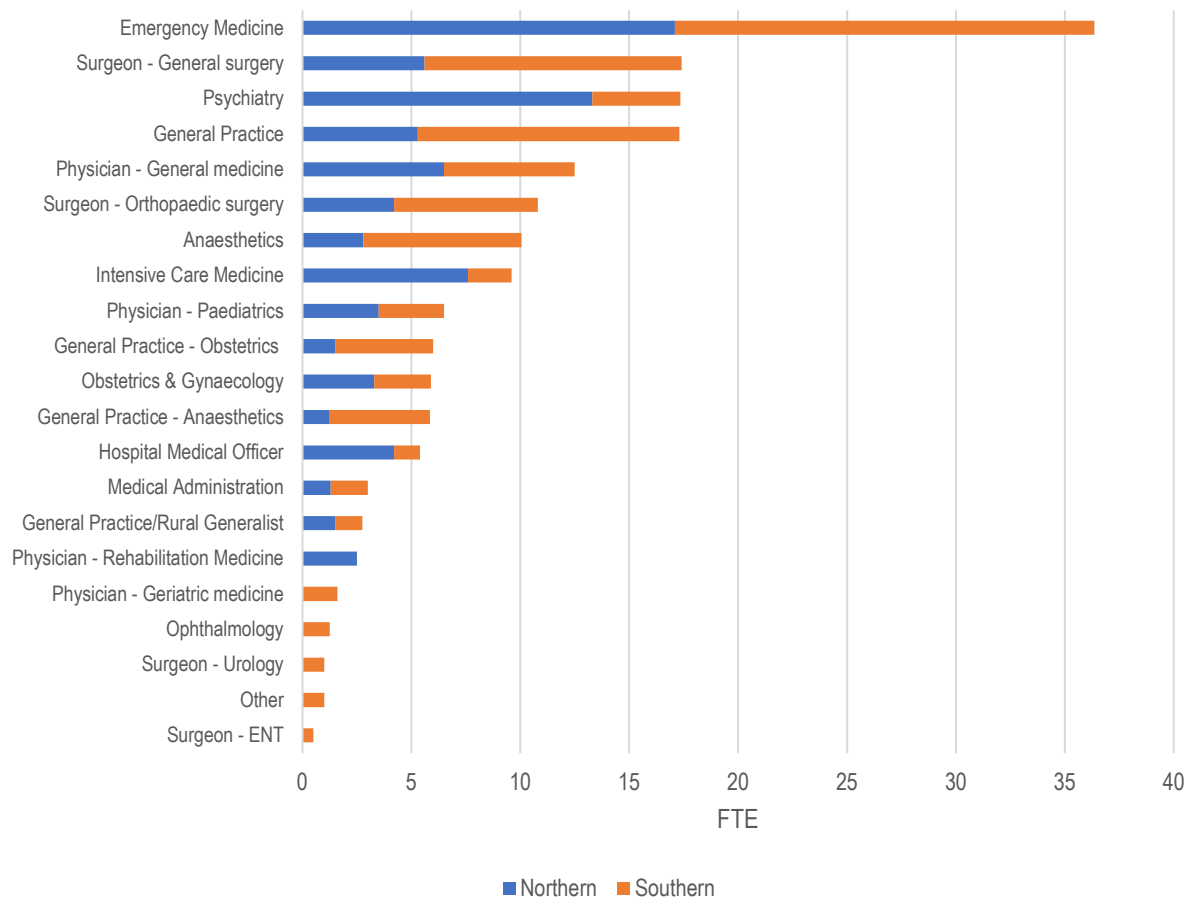
- Emergency medicine, 36.4 FTE;
- General surgery, 17.4 FTE;
- Psychiatry, 17.4 FTE;
- General practice, 17.3 FTE;
- General medicine, 12.5 FTE;
- Orthopaedic surgery, 10.8 FTE;
- Anaesthetics, 10.1 FTE; and
- Intensive care medicine, 9.6 FTE.

It is also apparent that some specialties are only available in the southern part of the catchment:

- Geriatric medicine, 1.6 FTE;
- Urology, 1.0 FTE; and
- ENT, 0.5 FTE.

By contrast, rehabilitation medicine (2.5 FTE) was only available in the northern part of the catchment.

**Figure 7-3: Workforce by specialty by location, 2020**



It can be seen from Table 7-9 that two hospitals account for the majority of workforce specialties in the northern catchment, Goulburn Hospital at 69% of northern catchment medical workforce FTE and Queanbeyan at 24%.

**Table 7-9: Workforce by specialty – Northern catchment hospitals**

Specialty	Braidwood MPS	Crookwell Health Service	Goulburn Base Hospital	Queanbeyan Health Service	Yass Health Service	Total
Anaesthetics	0	0	2.8	0	0	2.8
Emergency Medicine	0	0	8.1	9	0	17.1
General Practice	0	2.5	0	0	2.8	5.3
General Practice - Anaesthetics	0	0	0	1.25	0	1.25
General Practice - Obstetrics	0	0	0	1.5	0	1.5
General Practice/Rural Generalist	0.5	0	0	1	0	1.5
Hospital Medical Officer	0	0	0	4.2	0	4.2
Intensive Care Medicine	0	0	7.6	0	0	7.6
Medical Administration	0	0	1	0.3	0	1.3
Obstetrics & Gynaecology	0	0	2.8	0.5	0	3.3
Physician - General medicine	0	0	6.5	0	0	6.5



Physician - Paediatrics	0	0	3.5	0	0	3.5
Physician - Rehabilitation Medicine	0	0	2.5	0	0	2.5
Psychiatry	0	0	12.45	0.85	0	13.3
Surgeon - General surgery	0	0	5	0.6	0	5.6
Surgeon - Orthopaedic surgery	0	0	4	0.2	0	4.2
<b>Total</b>	<b>0.5</b>	<b>2.5</b>	<b>56.25</b>	<b>19.4</b>	<b>2.8</b>	<b>81.45</b>

Table 7-10 summarises medical workforce by hospitals in the southern catchment.

**Table 7-10: Workforce by specialty – Southern catchment hospitals**

Specialty	Bateman's Bay District Hospital	Bega District Hospital	Bombala Multi-Purpose Service	Cooma Health Service	Moruya District Hospital	Total
Anaesthetics	0	4.25	0	0	3	7.25
Emergency Medicine	9	6.15	0	4.1	0	19.25
General Practice	4	1	0	0	7	12
General Practice - Anaesthetics	3	0	0	0.6	1	4.6
General Practice - Obstetrics	0	0	0	0.5	4	4.5
General Practice/Rural Generalist	0	0	0.25	1	0	1.25
Hospital Medical Officer	0	0	0	1.2	0	1.2
Intensive Care Medicine	0	2	0	0	0	2
Medical Administration	0	1.4	0	0.3	0	1.7
Obstetrics & Gynaecology	0	1.6	0	0	1	2.6
Ophthalmology	1	0.25	0	0	0	1.25
Other: (Please specify)	0	0	0	0	1	1
Physician - General medicine	0	6	0	0	0	6
Physician - Geriatric medicine	0	1.6	0	0	0	1.6
Physician - Paediatrics	0	3	0	0	0	3
Psychiatry	0	3.25	0	0.2	0.6	4.05
Surgeon - ENT	0	0.5	0	0	0	0.5
Surgeon - General surgery	0	7.5	0	0.3	4	11.8
Surgeon - Orthopaedic surgery	0	5.5	0	0.1	1	6.6
Surgeon - Urology	0	0	0	0	1	1
<b>Total</b>	<b>17</b>	<b>44</b>	<b>0.25</b>	<b>8.3</b>	<b>23.6</b>	<b>93.15</b>

Three hospitals accounted for the overwhelming majority (91%) of medical workforce in the southern catchment:

- Bega District Hospital, 44.0 FTE, 47% of the southern catchment workforce;
- Moruya District Hospital, 23.6 FTE, 25% of the southern catchment workforce; and
- Bateman's Bay District Hospital, 17.0 FTE, 18% of the southern catchment workforce.

## 7.4. NOTES ON MEDICAL WORKFORCE DATA

The following points should be noted in relation to hospital medical workforce data reported to this project by hospitals in the SNSW LHD:

- Anaesthetists, ED doctors and surgeons for Batemans Bay Health Service and Moruya District Hospital work across both the Eurobodalla sites but have only been counted in one site. Batemans Bay and Moruya VMOs are reported as head count not as FTE;
- At Batemans Bay Health Service and Moruya District Hospital, some GP VMOs fill multiple roles and work across both sites (in admitting, anaesthetics and ED roles) but have only been counted once; and
- At the time of reporting, there were two vacant FTE positions for staff FACEM positions for Moruya District Hospital.

## 7.5. MEDICAL WORKFORCE TRAINEE POSITIONS

### 7.5.1. GP trainees

Data on GP trainees was provided by GP Synergy for the two half-year semester training periods of 2021, as summarised in Table 7-11. There were 59 (44.5 FTE) GP trainees in 2021 semester 1 and 57 (48.2 FTE) in the second semester.

**Table 7-11: GP trainees, 2021**

Semester	Headcount	FTE
Semester 1 2021	59	44.5
Semester 2 2021	57	48.2

Based on registrar head count, the number of available training places filled in semester 2, was 10% higher than the average for all NSW & ACT. Based on FTE, there were 7% and 2% more FTE training places for semesters 1 and 2 respectively when compared to all of NSW and ACT combined.

Another factor to consider is the high demand for registrars entering into GP training in the GP Synergy Southern NSW training sub-region. The number of AGPT available positions in the cohort is oversubscribed within the Southern NSW sub region each year. GP Synergy has noted that this is unique to this sub-region and is likely attributable to its rural and general pathway mix of available training positions.

Additionally, Table 7-12 reports the total of 'capped' training positions each semester for the SE NSW RTH region. This is one of the mechanisms applied by GP Synergy to support, in part, the equitable distribution of training places across all accredited and active training facilities.

**Table 7-12: GP registrar training positions by filled/vacant status, FTE, 2021**

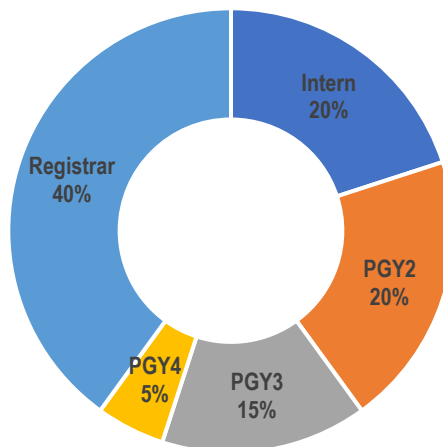
Location	S1/2021 - FTE				S2/2021 - FTE			
	GP Registrar Training Positions Available	GP Registrar Positions - GP Synergy Cap	GP registrar training positions filled	GP Registrar training positions vacant	GP Registrar Training Positions Available	GP Registrar Positions - GP Synergy Cap	GP registrar training positions filled	GP Registrar training positions vacant
North	33	48	24.5	8.5	33.5	53	28.5	5

Cowra (A)	9	6.9	2.1	9	7.1	1.9
Hilltops	3	2.3	0.7	5	4.1	0.9
Goulburn Mulwaree (A)	5	4.4	0.6	5	2.6	2.4
Queanbeyan-Palerang Regional	11	8.1	2.9	10.5	10.3	0.2
Upper Lachlan Shire (A)	2	0.9	1.1	2	2.1	-0.1
Yass Valley (A)	3	1.9	1.1	2	2.3	-0.3
<b>South</b>	<b>32.5</b>	<b>20</b>	<b>12.5</b>	<b>34</b>	<b>19.9</b>	<b>14.1</b>
Bega Valley (A)	14	7.6	6.4	14	7.7	6.3
Eurobodalla (A)	10.5	6.1	4.4	11	4.7	6.3
Snowy Monaro	8	6.3	1.7	9	7.5	1.5
<b>Total</b>	<b>65.5</b>	<b>44.5</b>	<b>21</b>	<b>67.5</b>	<b>48.2</b>	<b>19.3</b>

### 7.5.2. Hospital trainees

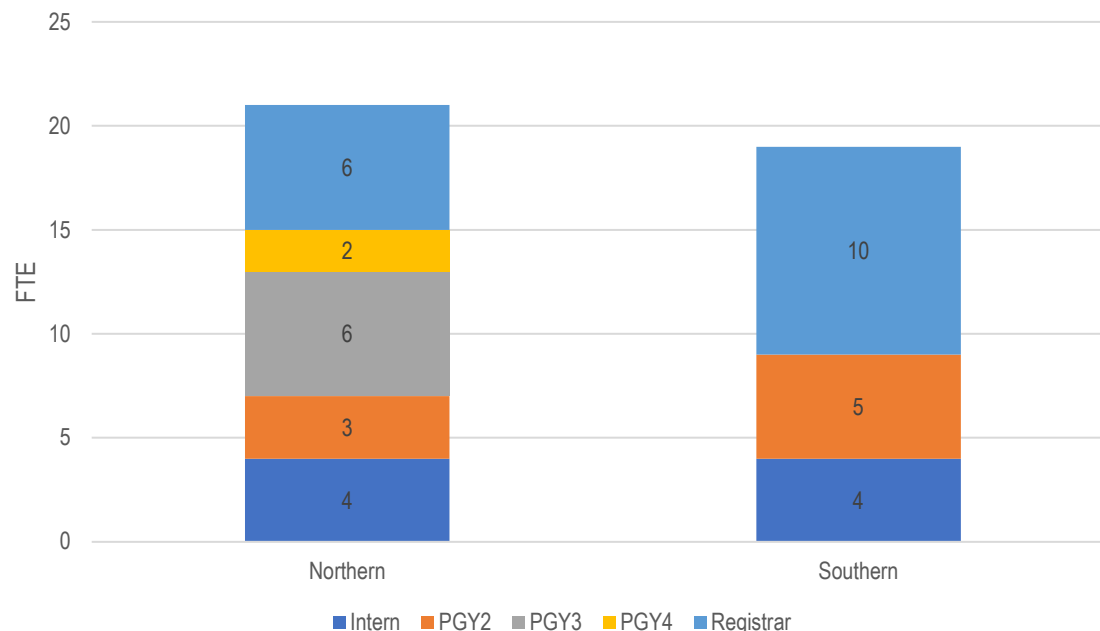
Figure 7-4 shows that interns and PGY2 together account for 40% of the medical trainee workforce, whilst registrars accounted for 40%.

**Figure 7-4: Medical trainees by type, 2020**



As shown in Figure 7-5, there were 19 trainees in hospitals in the southern catchment and 21 in the northern catchment. PGY1 to 3 numbers were higher in the northern catchment (13 FTE) compared to the southern catchment (9 FTE). There were much few registrars in the northern catchment (6 FTE) compared to the southern catchment (10 FTE).

**Figure 7-5: Medical trainees by type by location, 2020**



The distribution of medical workforce trainees by health service is summarised in Table 7-13. Registrars are predominantly employed at Bega District Hospital (10 FTE) and Goulburn Base Hospital (5 FTE) with one psychiatric registrar on rotation at Kenmore Psychiatric Hospital.

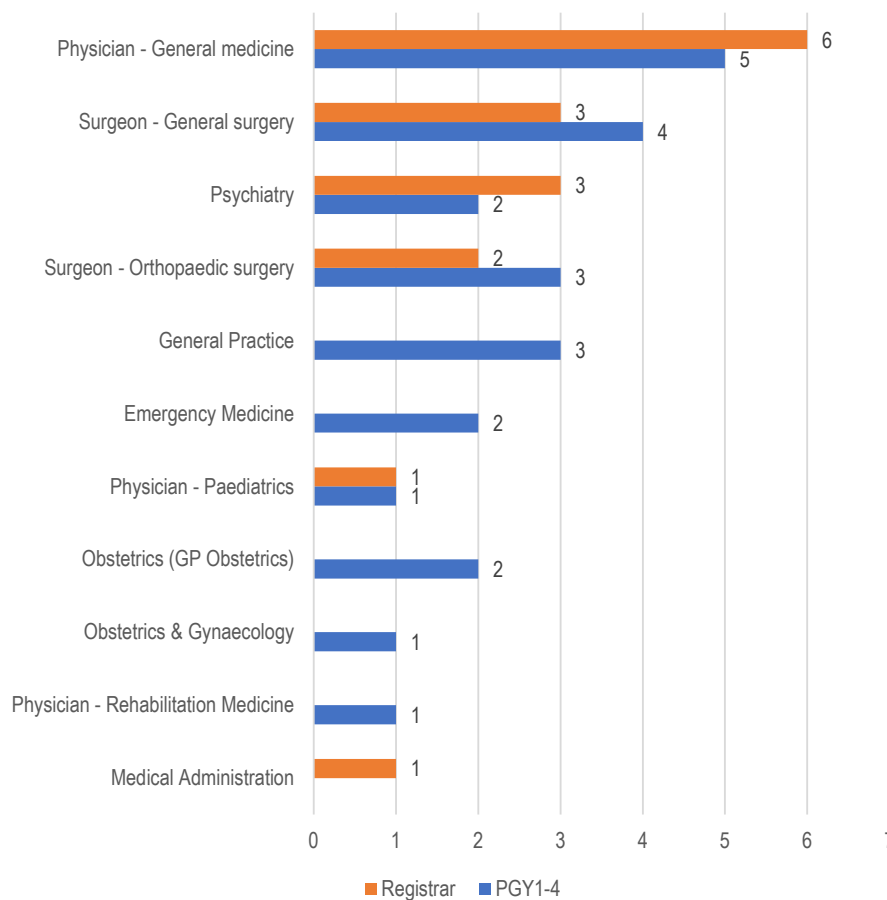
**Table 7-13: Medical workforce trainees by type by health service, 2020**

Location	Health Service	Intern	PGY2	PGY3	PGY4	Registrar	Total
Northern	Goulburn Base Hospital	4	3	6	0	5	18
	Queanbeyan Health Service	0	0	0	2	0	2
	Kenmore Psychiatric Hospital	0	0	0	0	1	1
<b>Northern Total</b>		4	3	6	2	6	21
Southern	Bega District Hospital	4	3	0	0	10	17
	Moruya District Hospital	0	2	0	0	0	2
<b>Southern Total</b>		4	5	0	0	10	19
<b>Total</b>		8	8	6	2	16	40

The summary of trainees by type of specialty is provided in and by location and specialty in Table 7-14. The five largest specialties in terms of training are:

- General medicine, 11 FTE;
- General surgery, 7 FTE;
- Psychiatry, 5 FTE;
- Orthopaedic surgery, 5 FTE; and
- General practice, 3 FTE.

**Figure 7-6: Trainees by specialty, 2020**



**Table 7-14: Trainees by health service by specialty, 2020**

Health Service	Specialty	Intern	PGY2	PGY3	PGY4	Registrar	Total
<b>Bega District Hospital</b>	Medical Administration	0	0	0	0	1	1
	Emergency Medicine	1	0	0	0	0	1
	General Practice	1	0	0	0	0	1
	Physician - Paediatrics	0	1	0	0	0	1
	Surgeon - Orthopaedic surgery	0	1	0	0	2	3
	Surgeon - General surgery	1	0	0	0	3	4
	Physician - General medicine	1	1	0	0	4	6
<b>Sub-total</b>		4	3	0	0	10	17
<b>Goulburn Base Hospital</b>	Physician - Paediatrics	0	0	0	0	1	1
	Physician - Rehabilitation Medicine	1	0	0	0	0	1
	Obstetrics & Gynaecology	0	1	0	0	0	1
	Emergency Medicine	0	0	1	0	0	1
	Surgeon - Orthopaedic surgery	0	1	1	0	0	2
	Surgeon - General surgery	1	1	1	0	0	3

	Psychiatry	0	0	2	0	2	4
	Physician - General medicine	2	0	1	0	2	5
<b>Sub-total</b>		<b>4</b>	<b>3</b>	<b>6</b>	<b>0</b>	<b>5</b>	<b>18</b>
<b>Moruya District Hospital</b>	General Practice	0	2	0	0	0	2
<b>Sub-total</b>		<b>0</b>	<b>2</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>
<b>Queanbeyan Health Service</b>	Obstetrics (GP Obstetrics)	0	0	0	2	0	2
<b>Sub-total</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>0</b>	<b>2</b>
<b>Kenmore Psychiatric Hospital</b>	Psychiatry	0	0	0	0	1	1
<b>Sub-total</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>
<b>Total</b>		<b>8</b>	<b>8</b>	<b>6</b>	<b>2</b>	<b>16</b>	<b>40</b>

As shown in Table 7-15, the majority of training positions were filled, with three vacancies reported: two at Goulburn Base Hospital (for a registrar position in Emergency Medicine and in General Medicine) and one at Queanbeyan District Hospital (GP Obstetrics).

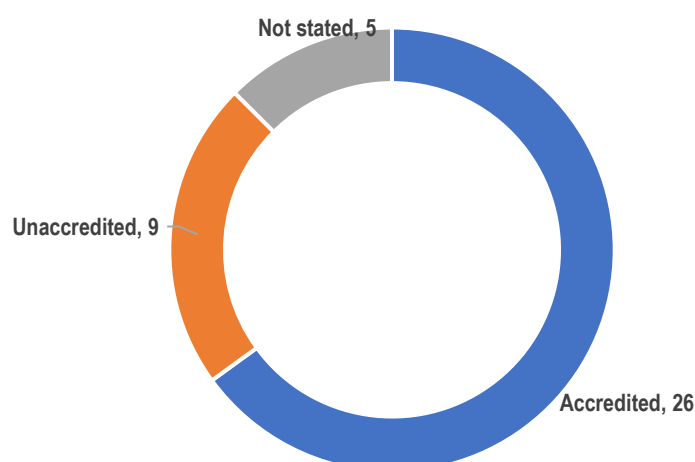
**Table 7-15: Training positions by filled/vacant status, 2020**

		PGY1-4		Registrar	Total
		Filled	Vacant	Filled	
<b>Bega District Hospital</b>	Medical Administration			1	1
	Emergency Medicine	1			1
	General Practice	1			1
	Physician - Paediatrics	1			1
	Surgeon - Orthopaedic surgery	1		2	3
	Surgeon - General surgery	1		3	4
	Physician - General medicine	2		4	6
<b>Sub-total</b>		<b>7</b>		<b>10</b>	<b>17</b>
<b>Goulburn Base Hospital</b>	Physician - Paediatrics			1	1
	Physician - Rehabilitation Medicine	1			1
	Obstetrics & Gynaecology	1			1
	Emergency Medicine		1		1
	Surgeon - Orthopaedic surgery	2			2
	Surgeon - General surgery	3			3
	Psychiatry	2		2	4
	Physician - General medicine	2	1	2	5
<b>Sub-total</b>		<b>11</b>	<b>2</b>	<b>5</b>	<b>18</b>
<b>Moruya District Hospital</b>	General Practice	2			2
<b>Sub-total</b>		<b>2</b>			<b>2</b>
<b>Queanbeyan Health Service</b>	Obstetrics (GP Obstetrics)	1	1		2
<b>Sub-total</b>		<b>1</b>	<b>1</b>		<b>2</b>

<b>Kenmore Psychiatric Hospital</b>	Psychiatry			1	1
<b>Sub-total</b>				1	1
<b>Grand Total</b>		21	3	16	40

From Figure 7-7 it can be seen that the majority (65%) of trainee positions are accredited.

**Figure 7-7: Accredited status of training positions, 2020**



There were three specialties which accounted for the 9 unaccredited training positions, as listed in Table 7-16:

- Emergency medicine (1 PGY3 unaccredited position);
- General medicine (1 PGY3 and 2 registrar unaccredited positions);
- General surgery (1 PGY3 and 1 registrar unaccredited positions); and
- Orthopaedic surgery (1 PGY3 and 2 registrar unaccredited position).

**Table 7-16: Specialties with unaccredited training positions, 2020**

Specialty	PGY1-4			Registrar			Total
	Accredited	Unaccredited	n.s.	Accredited	Unaccredited	n.s.	
Medical Administration	0	0	0	1	0	0	1
Physician - Rehabilitation Medicine	1	0	0	0	0	0	1
Obstetrics & Gynaecology	1	0	0	0	0	0	1
Obstetrics (GP Obstetrics)	2	0	0	0	0	0	2
Physician - Paediatrics	1	0	0	1	0	0	2
Emergency Medicine	1	1	0	0	0	0	2
General Practice	1	0	2	0	0	0	3
Surgeon - Orthopaedic surgery	2	1	0	0	2	0	5
Psychiatry	0	0	2	2	0	1	5



Surgeon - General surgery	3	1	0	2	1	0	7
Physician - General medicine	4	1	0	4	2	0	11
<b>Total</b>	<b>16</b>	<b>4</b>	<b>4</b>	<b>10</b>	<b>5</b>	<b>1</b>	<b>40</b>

Table 7-17 lists the accreditation status for each health service. It can be seen that:

- Goulburn Base Hospital had 12 accredited and 4 unaccredited positions;
- Bega had 12 accredited and 5 unaccredited positions; and
- Queanbeyan Health Service had two accredited positions.

**Table 7-17: Accreditation status of training positions by health service, 2020**

Health Service	PGY1-4			Registrar			Total
	Accredited	Unaccredited	n.s.	Accredited	Unaccredited	n.s.	
Bega District Hospital	7	0	0	5	5	0	17
Goulburn Base Hospital	7	4	2	5	0	0	18
Moruya District Hospital	0	0	2	0	0	0	2
Queanbeyan Health Service	2	0	0	0	0	0	2
Kenmore Psychiatric Hospital	0	0	0	0	0	1	1
<b>Total</b>	<b>16</b>	<b>4</b>	<b>4</b>	<b>10</b>	<b>5</b>	<b>1</b>	<b>40</b>

Additional details for each health service on rotational arrangements and parent health service affiliation for trainee rotations are summarised in Table 7-18.

**Table 7-18: Health service by specialty by training level by accreditation status and filled/vacant status, 2020**

Health Service	Location	Specialty	Training Level	EFT	Training Status	Filled/ Vacant	Rotational (Y/N)
Queanbeyan Health Service	Northern	Obstetrics (GP Obstetrics)	PGY4	1	Accredited	Filled	n.s.
Queanbeyan Health Service	Northern	Obstetrics (GP Obstetrics)	PGY4	1	Accredited	Vacant	n.s.
Bega District Hospital	Southern	Medical Administration	Registrar	1	Accredited	Filled	N
Bega District Hospital	Southern	Surgeon - Orthopaedic surgery	Registrar	1	Unaccredited	Filled	N
Bega District Hospital	Southern	Surgeon - Orthopaedic surgery	Registrar	1	Unaccredited	Filled	N
Bega District Hospital	Southern	Surgeon - General surgery	Registrar	1	Accredited	Filled	Y
Bega District Hospital	Southern	Surgeon - General surgery	Registrar	1	Accredited	Filled	Y
Bega District Hospital	Southern	Surgeon - General surgery	Registrar	1	Unaccredited	Filled	Y
Bega District Hospital	Southern	Physician - General medicine	Registrar	1	Accredited	Filled	Y
Bega District Hospital	Southern	Physician - General medicine	Registrar	1	Accredited	Filled	Y
Bega District Hospital	Southern	Physician - General medicine	Registrar	1	Unaccredited	Filled	N
Bega District Hospital	Southern	Physician - General medicine	Registrar	1	Unaccredited	Filled	N
Bega District Hospital	Southern	Surgeon - Orthopaedic surgery	PGY2	1	Accredited	Filled	Y
Bega District Hospital	Southern	Surgeon - General surgery	Intern	1	Accredited	Filled	Y
Bega District Hospital	Southern	Physician - General medicine	PGY2	1	Accredited	Filled	Y
Bega District Hospital	Southern	Physician - General medicine	Intern	1	Accredited	Filled	Y
Bega District Hospital	Southern	Physician - Paediatrics	PGY2	1	Accredited	Filled	Y
Bega District Hospital	Southern	General Practice	Intern	1	Accredited	Filled	Y
Bega District Hospital	Southern	Emergency Medicine	Intern	1	Accredited	Filled	Y
Goulburn Base Hospital	Northern	Physician - General medicine	Intern	2	Accredited	Filled	Y
Goulburn Base Hospital	Northern	Physician - Rehabilitation Medicine	Intern	1	Accredited	Filled	Y

Health Service	Location	Specialty	Training Level	EFT	Training Status	Filled/ Vacant	Rotational (Y/N)
Goulburn Base Hospital	Northern	Surgeon - General surgery	Intern	1	Accredited	Filled	Y
Goulburn Base Hospital	Northern	Surgeon - General surgery	PGY2	1	Accredited	Filled	Y
Goulburn Base Hospital	Northern	Surgeon - Orthopaedic surgery	PGY2	1	Accredited	Filled	Y
Goulburn Base Hospital	Northern	Obstetrics & Gynaecology	PGY2	1	Accredited	Filled	Y
Goulburn Base Hospital	Northern	Physician - General medicine	Registrar	2	Accredited	Filled	Y
Goulburn Base Hospital	Northern	Physician - Paediatrics	Registrar	1	Accredited	Filled	Y
Goulburn Base Hospital	Northern	Surgeon - General surgery	PGY3	1	Unaccredited	Filled	Y
Goulburn Base Hospital	Northern	Surgeon - Orthopaedic surgery	PGY3	1	Unaccredited	Filled	Y
Goulburn Base Hospital	Northern	Physician - General medicine	PGY3	1	Unaccredited	Vacant	N
Goulburn Base Hospital	Northern	Emergency Medicine	PGY3	1	Unaccredited	Vacant	N
Moruya District Hospital	Southern	General Practice	PGY2	1	n.s.	Filled	n.s.
Moruya District Hospital	Southern	General Practice	PGY2	1	n.s.	Filled	n.s.
Goulburn Base Hospital	Northern	Psychiatry	Registrar	2	Accredited	Filled	Y
Kenmore Psychiatric Hospital	Northern	Psychiatry	Registrar	1	n.s.	Filled	Y
Goulburn Base Hospital	Northern	Psychiatry	PGY3	2	n.s.	Filled	n.s.

## 7.6. BENCHMARKING

Benchmarking provides an assessment of the alignment of the medical workforce with other regions. The following classifications are currently used by the Department of Health:

- **Distribution Priority Areas** (DPAs) indicate the services of an area compared to a benchmark;
- **Districts of Workforce Shortage** (DWSs) indicate the number of non-GP specialists compared to the population of an area; and
- The **Modified Monash Model** (MMM) indicates the remoteness of a location.

### Distribution Priority Area

The DPA classification identifies locations in Australia with a shortage of medical practitioners. DPAs identify areas without sufficient access to doctors, based on the needs of the community, taking into account gender and age demographics, and the socio-economic status of patients living in an area.<sup>54</sup> To access the Medicare Benefits Schedule, Australian-trained bonded doctors with return-of-service obligations and International Medical Graduates who are GPs are required to work in DPA locations.

The current DPA for the catchment LGAs indicates a GP shortage in all areas, except for Yass Valley and Hilltops (Table 7-19).

**Table 7-19: GP DPA classification, per LGA (as at May 2020)**

SUB-REGION	LGA	GP DPA
Southern sub-region	Bega Valley Shire	Yes
	Eurobodalla Shire	Yes
	Snowy Monaro Regional	Yes
Northern sub-region	Goulburn Mulwaree	Yes
	Queanbeyan-Palerang Regional	Yes
	Upper Lachlan Shire	Yes
	Yass Valley	No
	Cowra Shire	Yes
	Hilltops Shire	No

### Districts of Workforce Shortage

A District of Workforce Shortage (DWS) is a geographic area in which the local population has lower access to Medicare-subsidised medical services compared to the national average. These areas are identified using the latest Medicare billing statistics and are updated on an annual basis to account for changes in the composition and geographic distribution of the Australian medical workforce, and the latest residential population estimates as provided by the ABS.

The Australian Government Department of Health is responsible for assigning DWS determinations. DWS was introduced in October 2001 and continues to be used to identify areas of Australia that experience the most acute needs for medical services, as evidenced by a comparative shortage of doctors who are billing Medicare.

54. <https://www.health.gov.au/health-workforce/health-workforce-classifications/distribution-priority-area>

Table 7-20 indicates that:

- All in-scope specialities are in shortage in the southern sub-region;
- Of the SENSW PHN LGAs in the northern region, all in-scope specialties are in shortage except for Diagnostic Radiology and General Surgery in Goulburn Mulwaree and Upper Lachlan Shire; and
- Cowra has shortages in all specialties whilst Hilltops only has a relative shortage of Psychiatry.

**Table 7-20: DWS for non-GP Specialists, per LGA (as at May 2020)**

SUB-REGION	LGA	ANAESTHETICS	CARDIOLOGY	DIAGNOSTIC RADIOLOGY	GENERAL SURGERY	MEDICAL ONCOLOGY	OBSTETRICS & GYNAECOLOGY	OPHTHALMOLOGY	PSYCHIATRY
Southern sub-region	Bega Valley Shire	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Eurobodalla Shire	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Snowy Monaro Regional	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Goulburn Mulwaree	Yes	Yes	No	No	Yes	Yes	Yes	Yes
	Queanbeyan-Palerang Regional	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Northern sub-region	Upper Lachlan Shire	Yes	Yes	No	No	Yes	Yes	Yes	Yes
	Yass Valley	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Cowra Shire	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
	Hilltops Shire	No	No	No	No	No	No	No	Yes

## Modified Monash Model

The MMM is a geographical classification system, using population data to address the maldistribution of medical services across Australia. Based on both geographical remoteness and town size, the system was developed to recognise the challenges in attracting health workers to more remote and smaller communities.<sup>55</sup> The MMM scale has seven levels, with MMM-1 defining all metropolitan locations, MMM-2 to MMM-5 defining all rural locations, separated by decreasing population size cut-offs, while MMM-6 and MMM-7 define all remote and very remote locations.<sup>56</sup>

The MMM classifications for the catchment include:

- 1: Queanbeyan-Palerang Regional;
- 3: Hilltops Shire;
- 4: Snowy Monaro Regional, Yass Valley and Cowra Shire; and
- 5: Bega Valley Shire, Eurobodalla Shire, Goulburn Mulwaree and Upper Lachlan Shire.

The 2016 MMM provides the EFT per 100,000 population for specified primary specialties at an SA1 level. When aggregated, this provides a benchmark for service access for each sub-region.

55. <http://www.health.gov.au/internet/main/publishing.nsf/Content/modified-monash-model>

56. <http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes>.

### **Key messages – workforce**

- In 2018, the GP FTE per 100,000 population was lower than the SE NSW PHN benchmarks in Queanbeyan-Palerang Regional, Yass Valley, Bega Valley and Goulburn Mulwaree.
- Limited current data is available relating to hospital VMO and staff specialists.
- The current DPA for the catchment LGAs indicates a GP shortage in all areas, except for Yass Valley and Hilltops, and DWS benchmarks indicate: all in-scope specialities are in shortage in the southern sub-region; of the SENSW PHN LGAs in the northern region, all in-scope specialties are in shortage except for Diagnostic Radiology and General Surgery in Goulburn Mulwaree and Upper Lachlan Shire; and Cowra has shortages in all specialties whilst Hilltops only has a relative shortage of Psychiatry.

## 8. Workforce demand

This chapter presents analysis of projected workforce demand for GPs and for non-GP specialist medical workforce.

### 8.1. DEMAND FOR GPs

#### *Methodology*

Demand has been modelled through reference to current age utilisation for each LGA of GP services and calculating the impact of changes in the size and age profile of the population for each LGA from 2019 to 2031. Changes in the intensity of utilisation are not modelled and would yield additional demand beyond the estimates based on demographic change alone. The existing demand for GPs in 2019 is 287.8 FTE. This based on existing supply as reported to the National Health Workforce Data-set. (This differs from the survey of reported FTE from the survey undertaken by the Regional Training Hub in which there was a reported to be 239 FTE. The major reason reason for lower reported FTE in the Regional Training Hub survey is that it does not count GPs employed in hospital settings.)

#### *Results*

Demand for GP services is summarised by LGA and catchment location in Table 8-1. There is modest demand growth of 0.22% per annum for GP services in the north of the catchment. This is projected to yield an increase in demand of 4.5 FTE between 2019 to 2031. By contrast, in the south there is a projected *reduction* in demand of 5.2 FTE, reflecting a reduction of -0.37% per annum between 2019 to 2031. Across the catchment, the change in demand is relatively stable, with -0.02% per annum projected change, resulting in the same demand for the overall GP workforce as in 2019.

**Table 8-1: Demand for GP workforce, FTE, 2019 to 2031**

Location	2019	2021	2026	2031	Change	Change % p.a.
Cowra (A)	15.4	15.4	15.4	15.4	0.0	0.03%
Goulburn Mulwaree (A)	37.1	37.4	38.2	38.9	1.8	0.40%
Hilltops (A)	19.9	19.7	19.3	18.8	-1.1	-0.47%
Queanbeyan-Palerang Regional (A)	54.3	54.7	55.8	56.9	2.6	0.39%
Upper Lachlan Shire (A)	20.8	20.9	21.3	21.6	0.8	0.30%
Yass Valley (A)	20.8	20.9	21.0	21.2	0.4	0.15%
<b>North - sub-total</b>	<b>168.3</b>	<b>169.1</b>	<b>170.9</b>	<b>172.8</b>	<b>4.5</b>	<b>0.22%</b>
Bega Valley (A)	40.7	40.6	40.2	39.8	-0.9	-0.19%
Eurobodalla (A)	48.9	48.5	47.6	46.7	-2.2	-0.38%
Snowy Monaro Regional (A)	29.9	29.5	28.6	27.8	-2.1	-0.60%
<b>South - sub-total</b>	<b>119.5</b>	<b>118.6</b>	<b>116.4</b>	<b>114.3</b>	<b>-5.2</b>	<b>-0.37%</b>
<b>Total</b>	<b>287.8</b>	<b>287.6</b>	<b>287.3</b>	<b>287.1</b>	<b>-0.7</b>	<b>-0.02%</b>

## 8.2. DEMAND FOR SPECIALIST MEDICAL WORKFORCE

Projected changes in demand for the specialist medical workforce in the SNSW LHD catchment is summarised in Table 8-2. Across all specialties, there is a projected increase in demand of 0.77% per annum, yielding an expected increase of 17.8 FTE from 183.5 FTE in 2019 to 201.3 FTE in 2031.

It can be seen that there is modest growth projected increase in the acute workforce specialties, with medicine projected to increase at 1.59% per annum between 2019 to 2031, an increase of 5.1 FTE and surgical specialties by 0.78% per annum, an increase of 3.9 FTE. There is a projected decline in O&G of -0.29% per annum, resulting in a marginal change from 8.0 FTE to 7.8 FTE. Similarly, paediatrics is modelled to have a reduction in demand of -1.09% per annum from 8.8 FTE to 7.8 FTE.

Emergency medicine is projected to remain relatively stable with the current workforce of 36.5 FTE expected to stay at that level.

Given population ageing, there is an anticipated increase in the subacute specialist medical workforce over the period of 2.61% per annum, yielding an increase of 2.0 FTE from 5.6 to 7.6 FTE. Despite the increase in demand of 2.36% per annum for palliative care, there is no current palliative care workforce and accordingly, the projected change in demand is nil. (The gap analysis in the next section addresses this workforce shortfall.)

**Table 8-2: Projected specialist medical workforce demand, SNSW LHD, 2019 to 2031**

Specialty	2019	2021	2026	2031	Change	% per annum change
Medicine	24.3	25.1	27.2	29.4	5.1	1.59%
Surgery	40.4	41.0	42.6	44.3	3.9	0.78%
Ophthalmology	1.7	1.8	1.9	2.1	0.4	1.68%
O&G	8.0	8.0	7.9	7.8	-0.3	-0.29%
Paediatrics	8.8	8.6	8.2	7.8	-1.1	-1.09%
Anaesthetics	10.1	10.2	10.6	11.0	0.9	0.74%
Intensive Care medicine	9.6	9.9	10.6	11.4	1.8	1.47%
Emergency medicine	36.4	36.3	36.3	36.3	-0.1	-0.02%
<b>Acute Sub-total</b>	<b>139.3</b>	<b>140.9</b>	<b>145.3</b>	<b>150.0</b>	<b>10.7</b>	<b>0.62%</b>
Geriatric medicine	2.2	2.3	2.6	2.9	0.8	2.56%
Rehabilitation Medicine	3.4	3.6	4.1	4.6	1.2	2.64%
Palliative care	0.0	0.0	0.0	0.0	0.0	2.36%
<b>Subacute Sub-total</b>	<b>5.6</b>	<b>5.9</b>	<b>6.7</b>	<b>7.6</b>	<b>2.0</b>	<b>2.61%</b>
Psychiatry	23.6	24.1	25.4	26.9	3.3	1.09%
Other	15.0	15.3	16.0	16.8	1.8	0.94%
<b>Total</b>	<b>183.5</b>	<b>186.2</b>	<b>193.4</b>	<b>201.3</b>	<b>17.8</b>	<b>0.77%</b>



There are differences in projected changes in demand for the specialist medical workforce according to the demographic shifts within the catchment. Population growth and ageing is contributing greater demand in the north of the catchment, resulting in a projected 1.21% per annum increase, with an increase in FTE of 14.3 FTE from 92.1 in 2019 to 106.4 FTE in 2031.

There is lower projected demand growth in the south of the catchment, with FTE for the specialist medical workforce modelled to grow by a modest 0.31% per annum, yielding an increase in FTE of only 3.5 from 91.4 to 94.9 FTE.

**Table 8-3: Projected specialist medical workforce demand, SNSW LHD by north and south catchment location, 2019 to 2031**

Location	Specialty	2019	2021	2026	2031	Change	% per annum change
North	Medicine	14.6	15.1	16.7	18.5	3.9	2.01%
North	Surgery	13.3	13.7	14.6	15.5	2.2	1.28%
North	Ophthalmology	0.0	0.0	0.0	0.0	0.0	0.00%
North	O&G	4.5	4.5	4.5	4.4	0.0	-0.08%
North	Paediatrics	4.8	4.7	4.5	4.4	-0.4	-0.68%
North	Intensive Care medicine	7.6	7.9	8.5	9.3	1.7	1.65%
North	Anaesthetics	2.8	2.9	3.1	3.3	0.5	1.28%
North	Emergency medicine	17.1	17.2	17.5	17.8	0.7	0.34%
	<b>Acute Sub-total</b>	<b>64.6</b>	<b>65.9</b>	<b>69.4</b>	<b>73.2</b>	<b>8.5</b>	<b>1.04%</b>
North	Geriatric medicine	0.0	0.0	0.0	0.0	0.0	0.00%
North	Rehabilitation Medicine	3.4	3.6	4.1	4.6	1.2	2.64%
North	Palliative care	0.0	0.0	0.0	0.0	0.0	2.80%
	<b>Subacute Sub-total</b>	<b>3.4</b>	<b>3.6</b>	<b>4.1</b>	<b>4.6</b>	<b>1.2</b>	<b>2.64%</b>
North	Psychiatry	18.1	18.6	20.0	21.6	3.5	1.48%
North	Other #	6.0	6.2	6.6	7.0	1.0	1.33%
	<b>North Sub-total</b>	<b>92.1</b>	<b>94.3</b>	<b>100.1</b>	<b>106.4</b>	<b>14.3</b>	<b>1.21%</b>
South	Medicine	9.8	10.0	10.5	10.9	1.2	0.93%
South	Surgery	27.1	27.3	28.1	28.8	1.7	0.52%
South	Ophthalmology	1.7	1.8	1.9	2.1	0.4	1.68%
South	O&G	3.5	3.5	3.4	3.3	-0.2	-0.55%
South	Paediatrics	4.1	4.0	3.6	3.4	-0.7	-1.59%
South	Intensive Care medicine	2.0	2.0	2.1	2.2	0.2	0.77%
South	Anaesthetics	7.3	7.3	7.5	7.7	0.5	0.52%
South	Emergency medicine	19.3	19.1	18.8	18.4	-0.8	-0.35%
	<b>Acute Sub-total</b>	<b>74.7</b>	<b>75.0</b>	<b>75.9</b>	<b>76.9</b>	<b>2.2</b>	<b>0.24%</b>
South	Geriatric medicine	2.2	2.3	2.6	2.9	0.8	2.56%
South	Rehabilitation Medicine	0.0	0.0	0.0	0.0	0.0	1.90%
South	Palliative care	0.0	0.0	0.0	0.0	0.0	1.98%
	<b>Subacute Sub-total</b>	<b>2.2</b>	<b>2.3</b>	<b>2.6</b>	<b>2.9</b>	<b>0.8</b>	<b>2.56%</b>

Location	Specialty	2019	2021	2026	2031	Change	% per annum change
South	Psychiatry	5.5	5.5	5.4	5.3	-0.2	-0.31%
South	Other #	9.0	9.1	9.4	9.7	0.7	0.67%
	<b>South Sub-total</b>	<b>91.4</b>	<b>91.9</b>	<b>93.3</b>	<b>94.9</b>	<b>3.5</b>	<b>0.31%</b>
<b>Total</b>		<b>183.5</b>	<b>186.2</b>	<b>193.4</b>	<b>201.3</b>	<b>17.8</b>	<b>0.77%</b>

Note: # 'Other' comprises radiology, pathology, medical administration and other low volume medical specialties including addiction medicine, dermatology, occupational and environmental health, pain medicine, public health medicine radiation oncology, sexual health medicine and sports and exercise medicine.

### 8.3. DEMAND FOR TRAINEES

Table 8-4 summarises the projected changes over time in demand for trainee GPs and trainee specialists. The modelling of demand for GP trainees is based on the same expected change in demand as applies for the wider GP workforce. Similarly, trainee specialist demand is based on the demand changes modelled for the specialist medical workforce.

In summary, there is relatively stable demand for GP trainees, with a slight decline of 1 FTE in the south of the catchment.

There is an increase of 2 FTE for specialist trainees, with this demand concentrated in the north of the catchment.

**Table 8-4: Demand for trainees, FTE**

Location	2019	2021	2026	2031	Change	Change % p.a.
GPs in training						
North	12.7	12.7	12.9	13.0	0	0.22%
South	16.3	16.2	15.9	15.6	-1	-0.37%
Total	29.0	28.9	28.9	28.9	0	-0.02%
Specialists in training						
North	11.8	12.1	12.8	13.6	2	1.21%
South	9.6	9.7	9.9	10.0	0	0.31%
Total	21.4	21.8	22.6	23.5	2	0.77%

## 9. Gap analysis

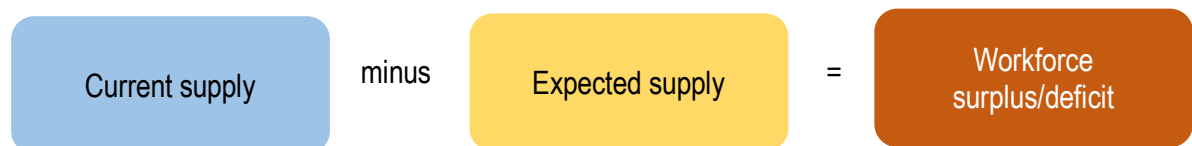
This chapter presents results of the gap analysis of the medical workforce in the catchment.

### 9.1. METHODOLOGY

#### GPs

For the GP workforce, the following 'population share' methodology has been used for the gap analysis as shown schematically in Figure 9-1. Current workforce is quantified through reference to the number of GPs in each LGA of the catchment based on data reported to the National Health Workforce Dataset (NHWD). Expected workforce is quantified through reference to the per capita supply of GPs across rural NSW. To quantify FTE from headcount, the actual hours worked for GPs per annum (as reported to NHWD) is calculated relative to the hours per annum that would be worked for a full-time equivalent GP (assumed to work 37 hours per week for 46 weeks per year).<sup>57</sup> For GPs, a headcount of 1.0 equates to 0.91 FTE.

**Figure 9-1: Gap analysis methodology 1 – population share method**



The gap is quantified by applying the expected rural NSW number of GPs per 10,000 population as at 2019 to each LGA population in the catchment based on ABS estimates of the population as at 2019.

#### Specialists

For specialists, the above population share methodology is used. Additionally, a second method (market share method) has been used to validate the quantification of the workforce gap, as summarised schematically in Figure 9-2. To quantify specialist FTE from headcount, the actual hours worked for specialists per annum (as reported to NHWD) is calculated relative to the hours per annum that would be worked for a full time equivalent specialist (assumed to work 50 hours per week for 46 weeks per year).<sup>58</sup> For specialists, a headcount of 1.0 equates to 1.07 FTE.

Under the market share method, the following steps are used to quantify the workforce surplus/gap.

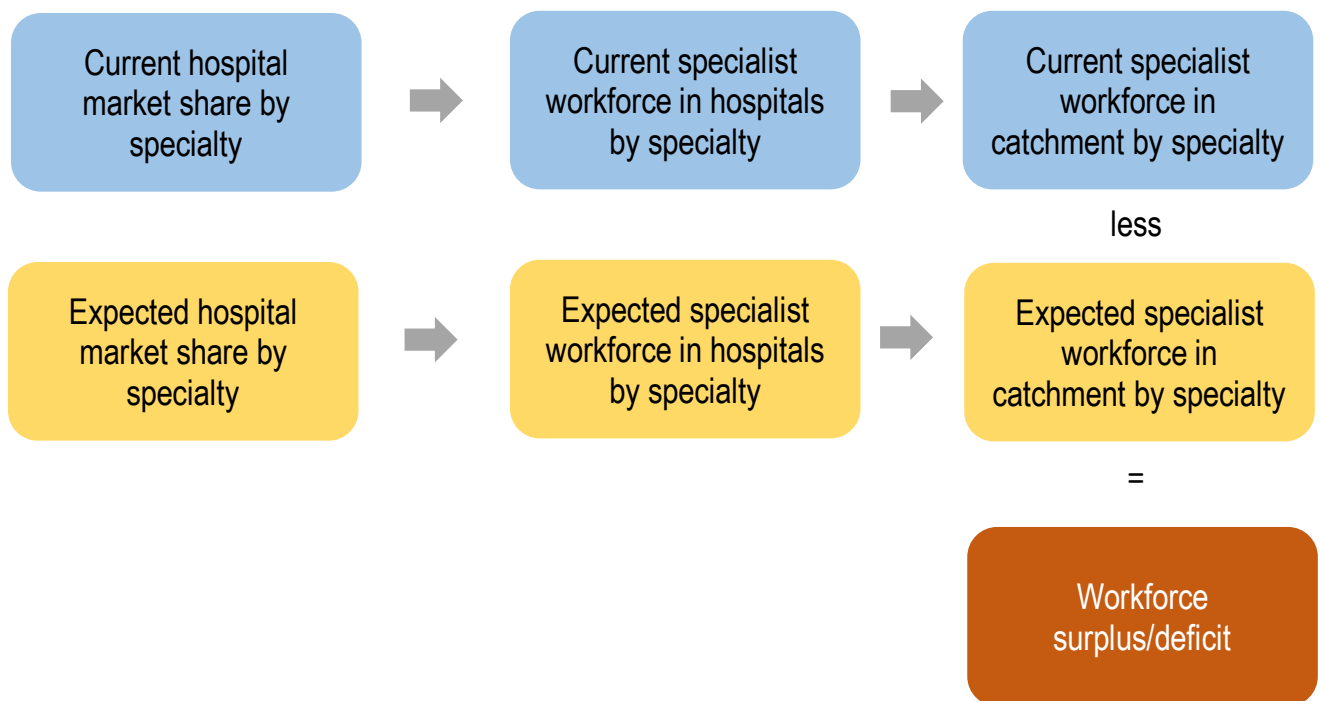
1. **Quantify existing market share** – this involves assessing the proportion of hospital separations treated in public hospitals within the catchment compared to the total volume of hospitals separations (i.e. at hospitals both inside and outside the catchment) for residents from the catchment. Market share can be calculated for each specialty and for each LGA.

<sup>57</sup> Deloitte Access Economics, General Practitioner workforce report 2019

<sup>58</sup> Munir V, 2018, MABEL: doctors shouldn't work in excess of 50 hours per week, Insight MJA, Issue 6 / 19 February 2018  
<https://insightplus.mja.com.au/2018/6/mabel-doctors-shouldnt-work-in-excess-of-50-hours-per-week/>

2. **Quantify expected market share** – this involves assessing the market share that could be achieved if the hospitals in the catchment were providing services at a reasonable level of self-sufficiency. Typically, for most specialties, there is a benchmark of 70% market share assumed. For more complex specialties, e.g. ENT and head and neck surgery, lower market share is assumed. For this project, in some specialties, such as interventional cardiology, no change to the existing market share of 0% has been made given that there would be infrastructure and other clinical support service inputs required to deliver these specialist, tertiary services.
3. **Quantify existing specialist workforce** – this involves collecting hospital workforce data from hospitals in the catchment.
4. **Quantify expected specialist workforce** – this involves modelling the additional specialist workforce that would be required to undertake the additional hospital services to meet the expected market share for each specialty.
5. **Quantify the specialist workforce in the community** – apply an uplift factor to recognise the additional FTE associated with each specialist for out-of-hospital clinic service provision. (Exceptions apply to specialist roles such as ICU/anaesthetics/Emergency where out-of-hospital clinic provision is not applicable.)
6. **Quantify the specialist gap** – the workforce gap is quantified by subtracting current specialist workforce capacity from the expected specialist workforce capacity.

**Figure 9-2: Gap analysis methodology 2 - market share method**



## Trainees

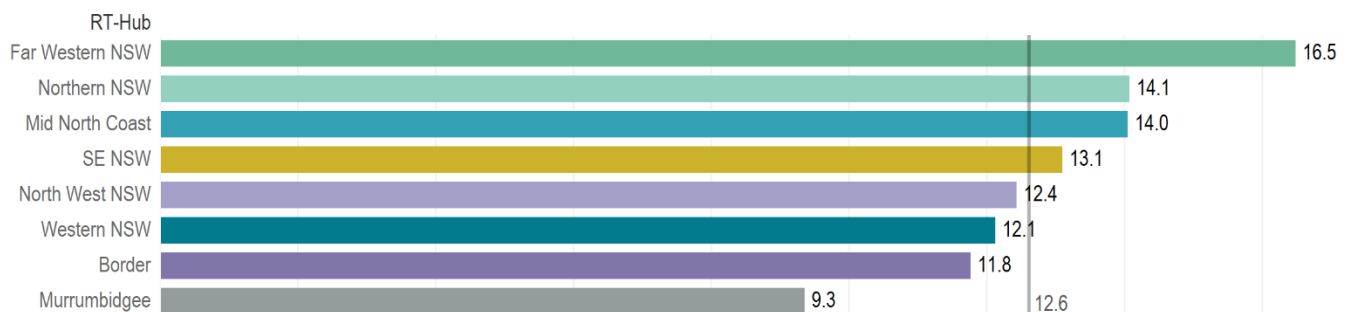
The methodology for estimating the workforce gaps for GPs and specialists in training is based on methodology 1 (population share method). The headcount to FTE calculations for GP trainees are estimated using the same method as for GPs and likewise, for specialist trainees, the specialist FTE:headcount formula is applied.

## 9.2. GP WORKFORCE

There was a headcount of 318 GPs (288 FTE) in the SENSW catchment in 2019. This represents a headcount of 13.1 GPs per 10,000 population, in excess of the rural NSW average of 12.6. On this measure, the SENSW catchment has a relatively larger per capita supply of GPs – a relative surplus of 11 GPs – compared to rural NSW.

**Figure 9-3: GPs per 10,000 population, regional training hubs, GP headcount, 2019**

### GPs per 10,000 population

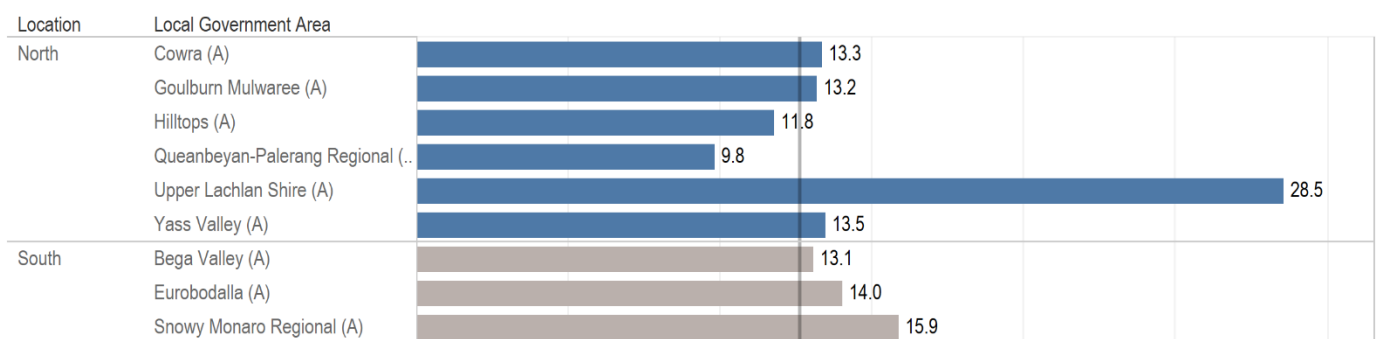


As shown in Figure 9-4, there was a much higher relative supply of GPs in the Upper Lachlan Shire, with 28.5 GPs per 10,000 population, more than twice the catchment average of 12.6. Two LGAs were below the catchment average: Queanbeyan-Palerang Regional at 9.8 per 10,000 population and Hilltops Shire at 11.8. Most other LGAs are close to the regional average.

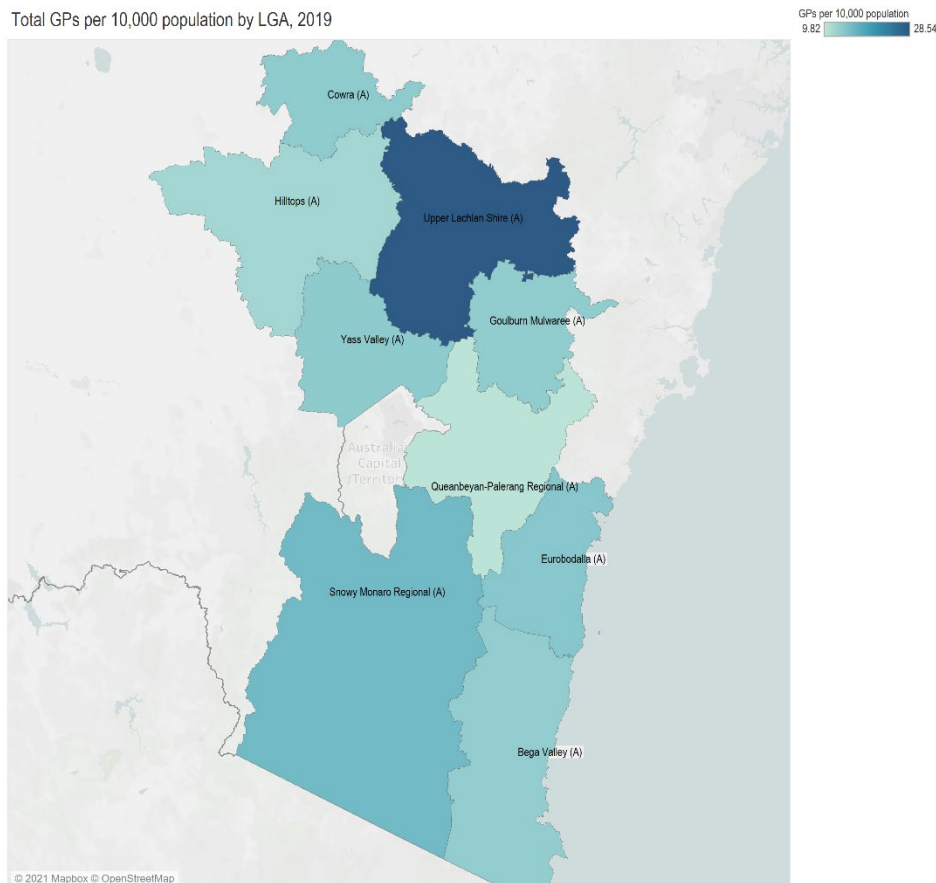
For LGAs in the north of the catchment, there was a headcount of 186 GPs (168 FTE) and a population average of 12.5 GPs per 10,000 compared to the south of the catchment with a headcount of 132 GPs (119 FTE), with a relatively higher per capita average at 14.1 GPs per 10,000.

**Figure 9-4: GPs per LGA, SENSW regional training hub, headcount, 2019**

### GPs per 10,000 population



**Figure 9-5: Map of GPs per LGA, SENSW regional training hub, GP headcount, 2019**

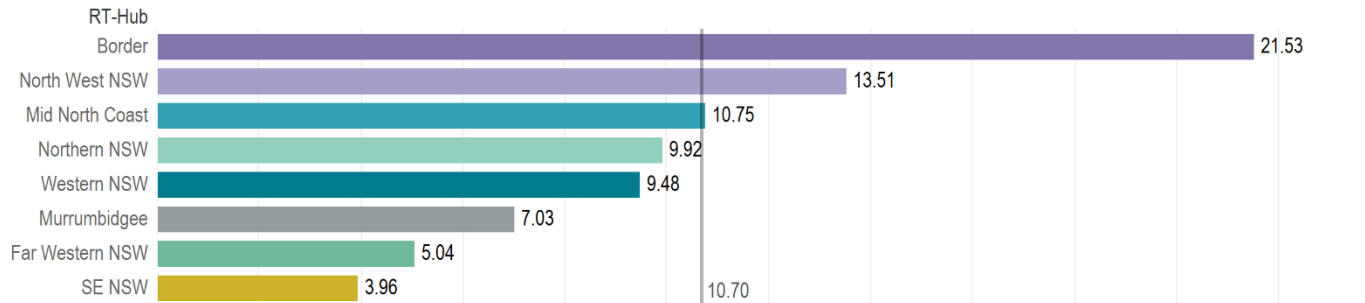


### 9.3. SPECIALIST WORKFORCE

There was a headcount of 96 specialists (103 FTE) in the SENSW catchment in 2019, yielding a population average of 4.0 specialists per 10,000 population. This represents a very substantial under-supply of specialists compared to the rural NSW average of 10.70 specialists per 10,000 population. The 'expected' number of specialists in the SENSW catchment based on the NSW average would be 257 (275 FTE), a gap of 161 specialists. Given that the reported supply of specialists in the NHWD data-set does not include locum specialists where the principal practice location is outside the catchment, this estimation of the workforce gap is not considered robust, is likely to be overstated and should be treated with caution. The revised gap estimation method (market-share method) overcomes this through reference to actual workforce reported by each LHD hospital, inclusive of locums.

**Figure 9-6: Specialists per 10,000 population by regional training hub, headcount, 2019**

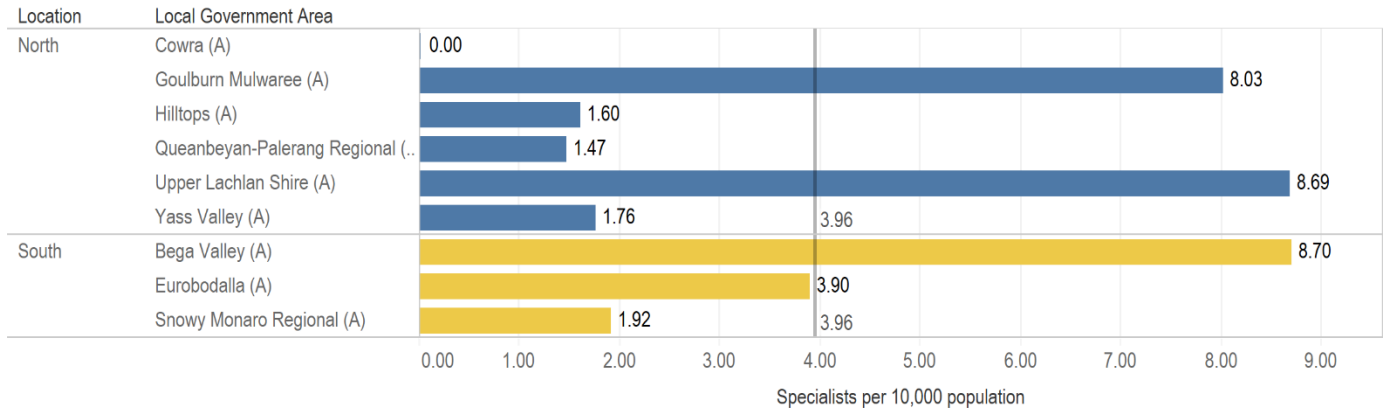
Specialists per 10,000 population



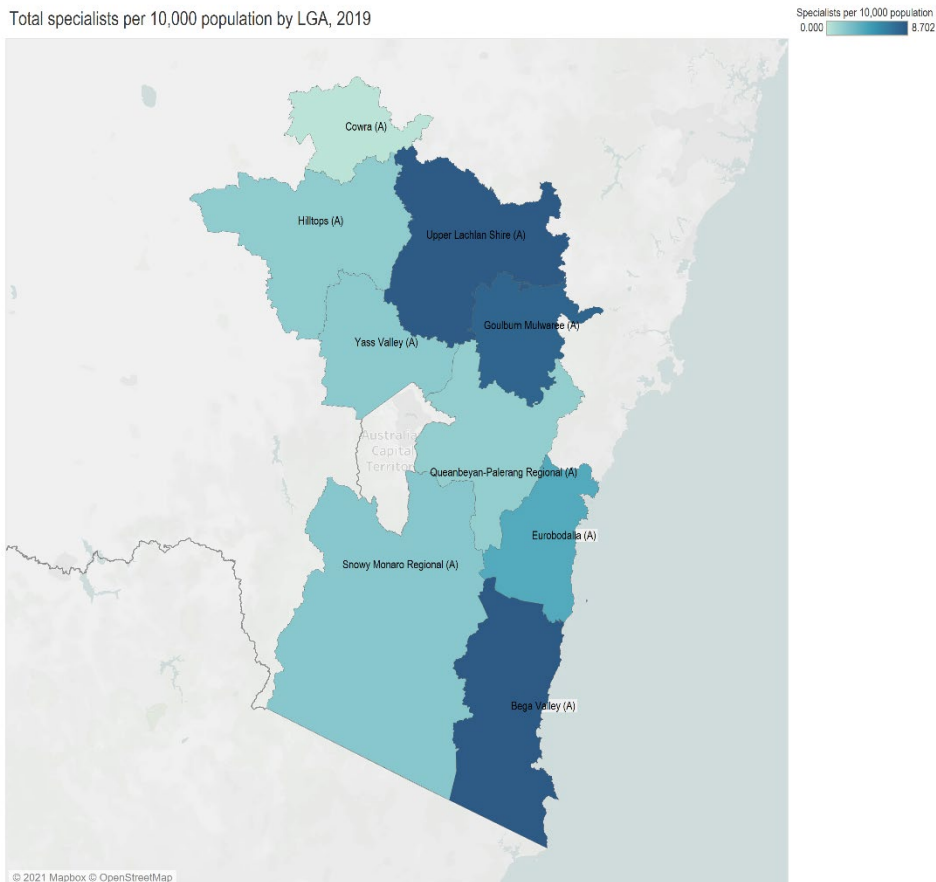
As would be expected, there is a higher per capita supply of specialists in the LGAs with the largest hospitals, namely Goulburn-Mulwaree (8.03 specialists per 10,000 population); and Bega Valley (8.70 specialists per 10,000 population). Whilst there is also a high relative supply in the Upper Lachlan Shire (8.69 specialists per 10,000 population), the actual number of specialists is relatively small at 7.

**Figure 9-7: Specialists per 10,000 population, LGA by SENSW regional training hub, headcount, 2019**

Specialists per 10,000 population



**Figure 9-8: Map of specialists per 10,000 population, SENSW regional training hub, headcount, 2019**



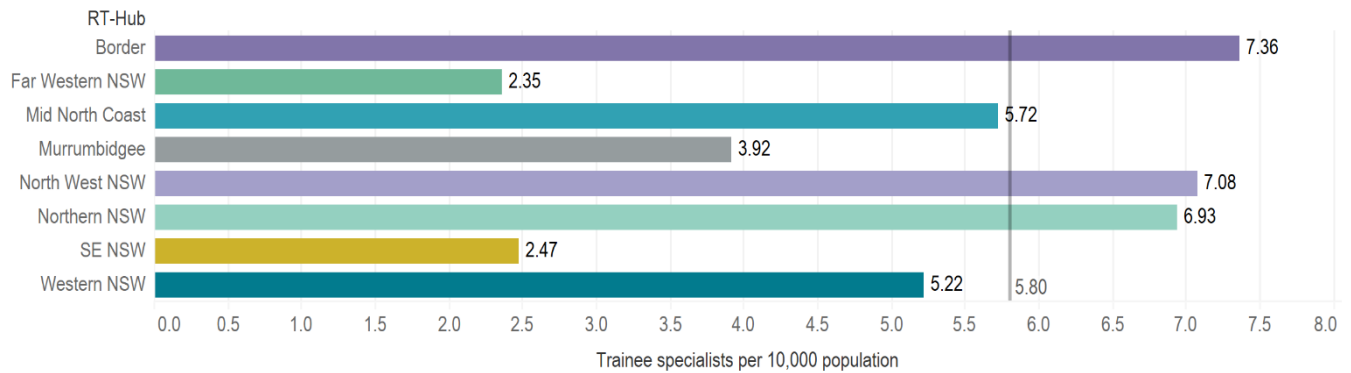


### 9.4. MEDICAL TRAINEES

There is a very low supply of medical trainees in the SENSW catchment at 2.47 trainees per 10,000 population, just under one half the rural NSW rate of 5.80. Compared to the current supply of 60 trainees in 2019 in the SENSW catchment, the expected number of trainees would be 140.6, yielding a ‘gap’ of 80.6 FTE. The data on reported supply of trainees includes both GP vocational and specialist vocational trainees.

**Figure 9-9: Trainees per 10,000 population by regional training hub, headcount, 2019**

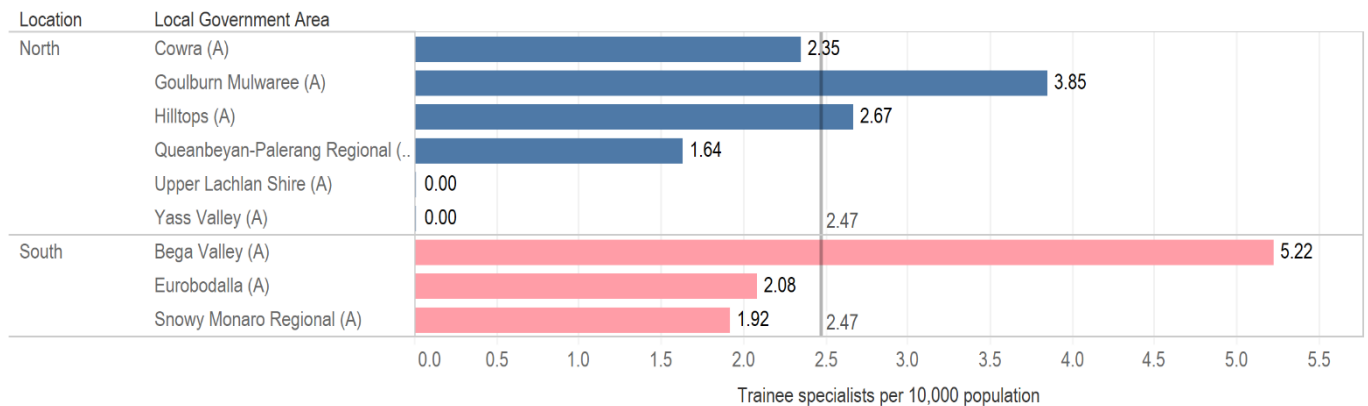
Trainees per 10,000 population



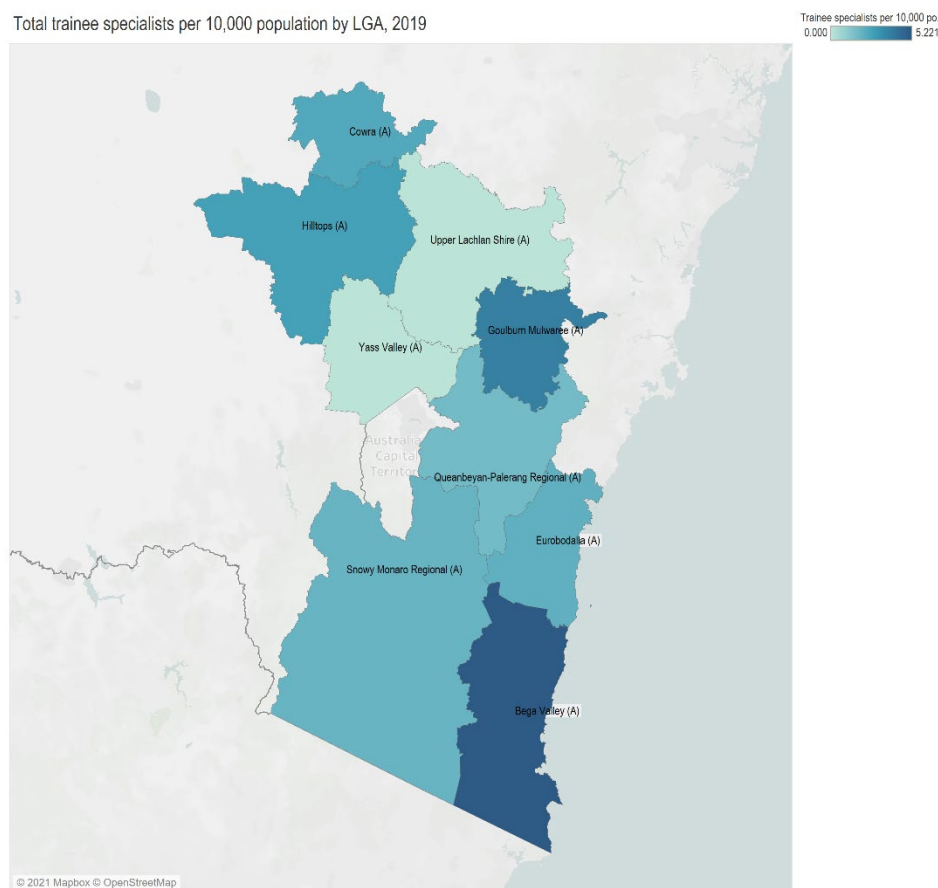
As would be expected, there is a higher supply of the trainee workforce in the LGAs with the largest hospitals: Goulburn Mulwaree (3.85 trainees per 10,000 population) and Bega Valley (5.22 trainees per 10,000 population).

**Figure 9-10: Trainees per 10,000 population, LGA by SENSW regional training hub, headcount, 2019**

Trainees per 10,000 population



**Figure 9-11: Map of trainees per 10,000 population, SENSW regional training hub, headcount, 2019**



## 9.5. TOTAL MEDICAL WORKFORCE

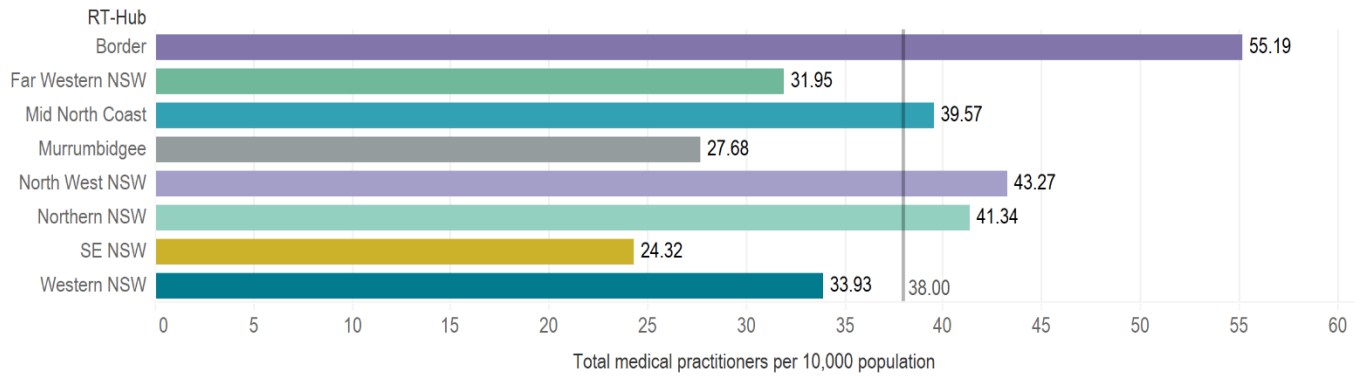
There were a total of 590 medical practitioners in 2019 in the SENSW catchment, a per capita supply of 24.3 practitioners per 10,000 population. This was more than one third (36%) below the rural NSW average of 38.0 practitioners per 10,000 population. There would be an additional 331 medical practitioners required in the SENSW catchment to reach the same per capita provision as the rural NSW medical workforce supply. As noted above, there are two main areas of under-supply in the SENSW catchment:

- Insufficient specialists; and
- Insufficient trainees.

It should also be noted that this estimation of the workforce 'gap' is only a crude estimate – it does not take into account the locum workforce in the SENSW catchment. To the extent that there is a systematically higher reliance on locums in the SENSW catchment, this is likely to over-state the workforce gap. Accordingly, a revised estimate of the medical workforce gap has been calculated based on a combination of the two measures used to quantify the 'expected' demand for the medical workforce. The second method uses a market share methodology through reference to specialty-specific market share rates reported to the NSW hospital morbidity data-set. This data has a high level of integrity. The method also quantifies supply based on reported hospital workforce estimates provided by the LHD, with an uplift adjustment to quantify the specialist workforce component provided in community settings.

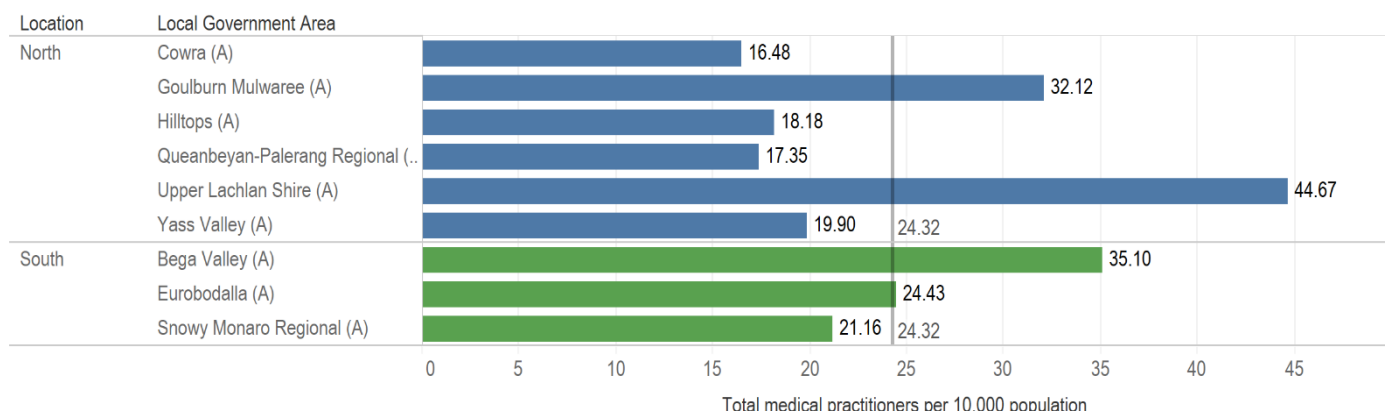
**Figure 9-12: Total medical practitioners per 10,000 population by regional training hub, headcount, 2019**

Total medical workforce per 10,000 population



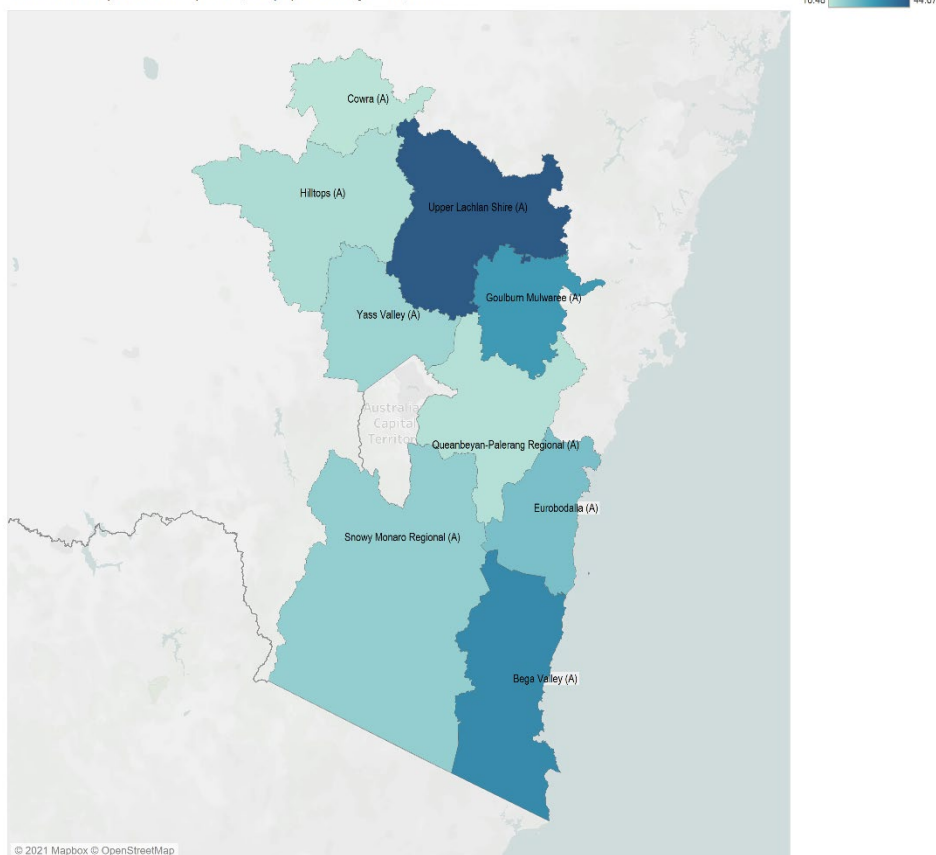
**Figure 9-13: Total medical practitioners per 10,000 population, LGA by SENS regional training hub, headcount, 2019**

Total medical workforce per 10,000 population



**Figure 9-14: Map of total medical practitioners per 10,000 population, SENS regional training hub, headcount, 2019**

Total medical practitioners per 10,000 population by LGA, 2019



## 9.6. CONSOLIDATED WORKFORCE GAP ESTIMATION

Table 9-1 provides a consolidated estimate of the specialist workforce gap for the NSW LHD and for the north and south of the catchment. The consolidated estimate uses the mid-point between the gap estimated through reference to the population share method and the market share method. Negative gap numbers in the table refer to an under-supply (deficit) and positive gap numbers reflect a notional 'surplus'.

At a catchment-wide level, the NSW LHD has an estimated specialist medical workforce gap of 52 FTE, with current supply of 183, which is below the expected requirements of 235 FTE. The north of the catchment has the largest gap of 38 FTE compared to the south with an estimated gap of 13 FTE.

By specialty, the largest gap is for anaesthetists, with an overall deficit of 12 FTE, a gap of 8 in the north and 4 in the south.

The next largest gap is for medicine, with 11 fewer physicians than required. The north has a gap of 6 physicians compared to 4 in the south. The gap for surgery is highest also in the north, with a deficit of 6. By contrast, the supply of surgeons in the south is adequate.

There is a gap of 4 subacute specialists across the catchment, with deficits for geriatric medicine (gap of 2), rehabilitation medicine (gap of 1) and palliative care medicine (gap of 1).

In terms of other specialists (pathology, radiology and other low volume medical specialties, there is an estimated gap of 24 specialists (this gap has only been estimated on the basis of the population share method) and may be an over-statement.

**Table 9-1: Consolidated estimate of specialist workforce gap by location, SNSW LHD, FTE, 2019**

Workforce specialty	North			South			SNSW LHD		
	Current FTE	Expected FTE	Gap FTE	Current FTE	Expected FTE	Gap FTE	Current FTE	Expected FTE	Gap FTE
Medicine	15	21	-6	10	14	-4	24	35	-11
Surgery	13	22	-9	27	23	4	40	45	-5
O&G	4	6	-1	4	4	-1	8	10	-2
Paediatrics	5	7	-2	4	5	-1	9	12	-3
Ophthalmology	0	2	-2	2	2	0	2	4	-3
Anaesthetics	3	11	-8	7	11	-4	10	22	-12
Intensive Care medicine	8	7	1	2	2	0	10	9	0
Emergency medicine	17	13	4	19	14	6	36	27	9
<b>Acute Sub-total</b>	<b>65</b>	<b>89</b>	<b>-25</b>	<b>75</b>	<b>76</b>	<b>-1</b>	<b>139</b>	<b>165</b>	<b>-26</b>
Geriatric medicine	0	2	-2	2	2	0	2	4	-2
Palliative care	0	1	-1	0	1	-1	0	1	-1
Rehabilitation Medicine	3	3	1	0	2	-2	3	4	-1
<b>Subacute - sub-total</b>	<b>3</b>	<b>5</b>	<b>-2</b>	<b>2</b>	<b>4</b>	<b>-2</b>	<b>6</b>	<b>10</b>	<b>-4</b>
Psychiatry	18	14	4	6	7	-1	24	21	2
<b>Sub-total</b>	<b>86</b>	<b>109</b>	<b>-23</b>	<b>82</b>	<b>87</b>	<b>-5</b>	<b>168</b>	<b>196</b>	<b>-28</b>
Pathology, Radiology & other	6	22	-15	9	17	-9	15	39	-24
<b>Total</b>	<b>93</b>	<b>131</b>	<b>-38</b>	<b>91</b>	<b>104</b>	<b>-13</b>	<b>183</b>	<b>235</b>	<b>-52</b>

## 10. Stakeholder consultations

This chapter presents a summary of stakeholder consultations undertaken over the period June to August 2021. The range of stakeholder organisation and individuals who were consulted is listed in Appendix 1.

### 10.1. STAKEHOLDER THEMES

#### 10.1.1. Pressure points

##### *Reliance on locums*

The lack of a permanent medical workforce was identified as an over-riding priority for the region in many stakeholder consultations. There is an over-reliance on locums with around one third of medical positions reliant on locums. At some health services, there is a lower reliance on locums – 10% to 20% at Queanbeyan Health.

Locums at senior level are problematic for training. This is because it is important to have adequate senior levels who are available to provide the support and supervision requirements for trainees. Without this, the trainee experience is sub-par and they are unlikely to feel motivated to stay into the future.

##### *Specialties*

There are particular specialties that were identified as having significant shortages:

- Emergency medicine – there is a very high reliance on locums particularly at Goulburn (discussed below);
- Paediatrics – limited neonatal capability in Bega;
- Lack of specialist clinical leads in key disciplines (discussed below);
- Lack of GP proceduralists in some rural areas including Cowra, Cooma and Eurobodalla.

Anaesthetics has gone down in the region because there's no private hospital and no ICU.

Goulburn ED is entirely staffed by locums.

Ideally would like more anaesthetists. The typical pathways is for a Canberra Hospital anaesthetist who is new to the ACT to start at Queabeyan – but then they tend to leave and go full time to Canberra.

##### *Burden of disease*

The increasing burden of disease in the community creates additional pressure for a robust and reliable medical workforce. There is increasing acuity of presentations with patient co-morbidities. The implication of population ageing is that there is an increased need for GP-led primary health care.

### *Lack of private hospital capacity*

The lack of a private hospital is a disincentive to workforce development. The example was cited of specialists who refer their patients to Canberra for treatment at an ACT private hospital. There are other flow-on consequences for other specialties such as anaesthetics.

### *Pressure points by locality*

#### **Goulburn Base Hospital**

There is a medical workforce shortage in Goulburn. Many pointed to the longstanding issues in recruiting and retaining medical workforce at Goulburn Base Hospital.

*Goulburn has always been a problem. People commute from Sydney. Once they get a good job in Sydney they pull out. Both GPs and senior medical staff are in low supply.*

One of the consequences is that there is a flow of patients out of the region into Canberra. This is not considered cost-effective as the costs associated with inter-state treatment are higher than for local treatment. There is a need for the LHD to reverse the flow of patients out of the region. In order to address this strategically, it was acknowledged that a high-level negotiated agreement is required between the LHD and the ACT to support clarity about volume/demand expectations by specialty.

That said, it was noted that there are dedicated clinicians at Goulburn. However, the challenge is that there tends to be over-reliance on some individuals and that this is difficult to sustain over time.

*The load falls disproportionately on them. This contributes to overwork and leads to dissatisfaction over time.*

The relative proximity to Sydney has positive and negative consequences. Whilst it assists in promoting Goulburn as a relatively accessible destination for the medical workforce, without a strong workforce attachment to the hospital, the placements are temporary, leading to churn.

*Goulburn has always been a problem. People commute from Sydney. Once they get a good job in Sydney they pull out. Senior medical staff are in low supply.*

#### **Bega Hospital**

One of the challenges identified for Bega Hospital is that whilst optimally, the hospital would be increasing the breadth of its specialist workforce, supported by a strong pipeline of medical trainees, currently junior medical workforce training may be inhibited by insufficient case volumes.

*Bega hospital is trying to expand. But a problem is that there are too many trainees for the amount of patient work that is needed. There is a high ratio of patients to doctors. Hospitals like Bega often don't have the volume of patient service that justifies full use of medical students.*

#### **Eurobodalla**

Opportunities for increased registrar training placements from the ACT to Eurobodalla were identified including for surgical and O&G placements at Eurobodalla. This was considered

relevant to support the GP VMO model at Eurobodalla and to increase the local access to healthcare, avoiding the need for patient outflow to Canberra.

## Cowra

Population ageing with its concomitant increased community burden of disease is increasing pressure on the GP-led Cowra Hospital. The hospital's strong reliance on GP proceduralists is increasingly at risk as the available GPs are ageing and the supply pipeline considered insufficient (see discussion under GP workforce below).

### *Cross-border flow issues*

The outflow of patients to receive treatment in the ACT was identified by several stakeholders as an important planning priority for the region and that the outflow should be reversed where the clinical services could be safely provided within health services in the region.

There is potential for more elective surgery to be undertaken in Queanbeyan to avoid the need for these patients to be treated in the ACT, which has its own elective surgery waiting lists.

There are relatively longer waiting lists for accessing elective surgery in Canberra compared to the access available in Bega. This represents a counter incentive to cross-border flow.

Waiting lists in Canberra are very long – but wait times are better in Bega so that Drs can get their patients into the NSW side of the border.

Aside from access to medical workforce, the other factor influencing referrals to Canberra is the higher capability levels, particularly for ICU. The ICU at Bega is considered to have some limitations in the acuity/complexity of patients that are admitted to its ICU with risk stratification undertaken so that more complex patients, including those with elevated BMI referred to Canberra. Lack of high capability after-hours emergency support services including for stroke patients is another factor leading to referral to Canberra.

An over-riding factor identified is risk aversion with transfers to Canberra an option chosen for risk management reasons – a factor that is considered to be clinician dependent.

This perception is considered to be also a factor at the level of community attitudes. There is said to be a perception among the community that treatment for more serious conditions requires a trip to Canberra.

From a system planning perspective, the point was made that the proximity to a tertiary hospital in Canberra has a distorting effect on patient flow. This makes the SNSW patient flow patterns distinctive to many other LHDs, with the consequence that there is a disproportionate cross-border flow. This in some ways may be interpreted as an artefact of jurisdictional borders.

Data on patient flow and workforce supply would look different if the Canberra Hospital was considered to be within the SNSW LHD catchment.

## 10.1.2. GP workforce availability

The importance of the GP workforce was emphasised by most stakeholders. The broader workforce training trends create some difficulties given that increasingly many doctors are pursuing specialties other than general practice, part of a broader trend towards sub-



specialisation of medicine. In rural areas, this lack is compounded by broader preferences for city-based locations. Across the board, there has been a general under subscription in GP registrar training opportunities.

Increasingly medical graduates are not really choosing general practice as a career of first choice

Despite these broader system issues, SE NSW is one of the most sought out training regions. It has longstanding relationships for training within the region. Importantly, there is a reasonable retention level by GPs trained in rural areas with around one third undertaking rural placements remaining in the rural region. That said, some stakeholders observed that following a rural training placement, there was still a flow back to metropolitan areas by many GPs.

Influences that are relevant to GP retention are many and varied:

- Adequacy of rosters – expressed colloquially, GPs are keen to ensure they are not over-committed to health services that are under-staff, that is, they avoid the risk of being “roster fodder”
- Accommodation – in some parts of the region this is less available. For example, it is difficult to find accommodation in the Snow Monaro Regional area because of Snowy Mountains 2.0;
- Roster equity – GPs are concerned that their roster on-call requirements are shared fairly;
- Childcare – this is important for GPs with younger children; and
- Partner satisfaction – this is a perennial concern that both the GP and their partner need to be satisfied with the chosen town for work location.

GP VMOs will continue to have an important and relevant role. In group 2 district hospitals such as Cowra, Eurobodalla, Young, Queanbeyan, and Cooma Health service, GPs are the backbone of the health service. They are essential to the provision of emergency care, anaesthetics, birthing, and the provision of medical care for inpatients. Continued access to a GP procedural workforce is key for these health services to enable continued provision of core acute care, birthing and emergency services and to support VMO surgeons through GP anaesthetics.

Queanbeyan Health Service is strongly reliant on GP VMOs. It has achieved a sustainable medical workforce based largely on a GP VMO model. This health service has one of the highest increases in demand, with the highest population growth in the region. This contributes directly to demand for ED and birthing services. The hospital has over 600 births per annum and its GP obstetrician workforce is key to the continued provision of birthing services, supported by specialist O&G back-up from Canberra. The health service has recently been accredited for GP procedural training, further securing the sustainability of its GP workforce.

The Queanbeyan Health Service provides an example of a group 2 district hospital that has been able to attract an emergency medicine physician (FACEM) to be director of its ED. This provides clinical leadership and support to GP VMOs in Queanbeyan and supports the capability of the ED workforce. The health service does not have any other specialists in lead roles such as general medicine, general surgery or paediatrics.

Whilst there is relevance to the continued provision of the GP VMO model at hospitals such as Eurobodalla Health Service, there is also an opportunity to support GPs through the appointment of specialist positions such as Director of Medicine and Director of Emergency. Such positions may be outreached from other higher level hospitals.

“Having a physician onsite 1-2 days would be useful.”

Similarly, GPs play a key role for community hospitals (Pambula, Yass and Crookwell Health Service) and are relevant for multi-purpose services.

The point was also made that hospitals must plan deliberately to ensure an adequate supply of GP proceduralists and must ensure that there are hospital VMO positions available for GPs. The advantage is that this enables sharing of the roster with senior medical workforce specialists. Some health services in the region do not facilitate positions to be made available for GP VMOs. This was identified as a problem at Goulburn, with consultants not giving up lists to enable GP proceduralists to retain a procedural case load.

If we want to attract rural generalists we must have GP VMO staff trained positions at the end of training. People want to stay where they've been trained. The Queensland model is successful because they have good jobs at the end.

The other broader, system trend identified is towards centralization of services leading to a potential decline in the relevance and role of smaller, GP-led hospitals.

With increasing ageing, the frailty of hospital admissions also reinforces a focus on centralizing their care and treatment at tertiary hospitals. "Can't do surgery on older person...unless have high level ICU."

### **Rural generalist training**

Rural generalist training is encouraged to support the supply pipeline required for smaller district and community hospitals and skill training posts are encouraged. There is an interest in including Queanbeyan within the sites used for GP training by GP Synergy, with a view that this should encourage local retention within the region.

### **Supply influences**

In the west of the region, Cowra, the GP cohort is ageing with looming retirements creating workforce supply challenges. The training supply pipeline is not considered sufficient to offset the workforce decline.

In the south of the region, Cooma, a similar picture of GP decline with workforce ageing was identified.

"The GP ranks are thinning"

Whilst Cooma has a strong GP synergy presence for training, very few GPs are retained after completing their training.

There are competing market incentives for GPs that decrease the attractiveness of permanent rural locations. The relatively high fees available for locum work create an alternative incentive as do the reported higher EBA salaries in Queensland and NT. A further disincentive is work-life balance considerations with GPs less attracted to rural placements that necessitate on-call arrangements to support hospital rosters.

GPs' willingness to work at district hospitals may be negatively influenced by adequacy of staffing. Stretched rosters with frequent call-outs create disincentives for GPs to work at the hospital.

"Hospitals are not that popular for GPs to work at."

### 10.1.3. Specialist services

There was a positive endorsement of the cancer services provided by Canberra Health Service, with oncologists providing weekly on-site consultancy and patient clinics to SNSW LHD health services at Eurobodalla Health Service.

Queanbeyan has the advantage of relative close proximity to Canberra. This enables relative ease of access to specialist services such as O&G and a geriatric medicine that are considered effective.

There is an inherent attraction for new fellows to stay in the cities. This is despite the fact that there are relatively too many specialists in the city. One stakeholder suggested that this relative over-supply in some specialties could be used to the advantage of the LHD.

The LHD or Training Hub should offer new fellows an amazing fellowship – this could reignite their generalist skills. For example, rheumatologists could practice as a general physician within the regional hospital setting. The challenge is that otherwise, once they're specialists and practice as specialists, they lose their ability to be generalists.

The other challenge identified is that specialist consultants are more likely to be keen to accept a recruitment offer to the extent that there is an existing support structure of registrars and junior medical staff to support them.

To attract a specialist physician, requires a registrar and JMO team

The point was made that whilst there will be a growing demand for primary care services delivered by GPs, it is also essential that communities in the SE NSW region have access to the specialist medical services that are required. This includes access to diagnostics and definitive care that specialists would provide in urban settings.

### 10.1.4. Senior workforce availability

There were two elements identified as pressure points for the senior workforce:

- Insufficient investment in senior doctors to share the load; and
- Insufficient senior doctors who have been in positions for years.

Stakeholders noted that a key challenge is that even when a senior clinician appointment is made, unless there is adequate coverage for that specialty, the on-call requirements may have a disproportionate impact on the core workforce. This in turn contributes to burnout.

In terms of promoting an attractive training context, it was emphasized that the depth of coverage of senior workforce was of paramount importance.

It's important so that junior people can have a good time when they do rotations and be motivated to return to work.

There is a need to over-employ so that for consultants there is sufficient capacity to support work/life balance ... so that life is enjoyable. This is important so that the health service can keep specialists over time.

The point was made that locums are not an effective substitute for staff-based specialists with ongoing appointments who can develop a strong training platform and attract and inspire a future intake of trainees.

Locums at a senior level are problematic for training. This is because it's important to have adequate senior levels who are available to provide the support and supervision requirements for trainees. Without this, the trainee experience is sub-par and they're unlikely to feel motivated to stay into the future.

There is a particular priority for attracting a permanent ED workforce. Effective staffing of the ED is mission-critical priority for the LHD. There are reputational and quality/safety risks if there is insufficient roster coverage.

The ED at Goulburn is entirely staffed by locums.

### 10.1.5. Clinical leads

In the medium term, there are advantages to appointing clinical leads for the main specialty areas at the larger district hospitals Bega and Goulburn Base. A recent example of where this has been achieved is the ICU. Other areas where clinical leads should be appointed include:

- ED
- Medicine
- Surgery
  - ▶ O&G
  - ▶ Orthopaedics
- ICU (now covered at Goulburn)
- Anaesthetics
- Integrated care (covering specialist clinics and subacute care)

### 10.1.6. Trainee workforce

There has recently been a shortage of RMOs (PGY2). This is problematic for regional hospitals given their reliance on RMOs for ensuring adequacy of workforce coverage. Similarly, the availability of senior registrars is considered insufficient for demand.

Everyone wants the senior registrar. They do all the work and don't require much supervision.

At a strategic level it will be relevant if specialist colleges were to require rural placements. To improve regional retention, it would be optimal if there was some city-based training but the majority of training undertaken in rural areas.

From the broader planning perspective, it was acknowledged that it was opportune for Canberra-based specialist trainees to have the opportunity to undertake rural placements in SE NSW.

# 11. Strategic implications

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This chapter presents strategic implications arising from the review of the medical workforce supply and demand trends, findings of the gap analysis and stakeholder feedback. It concludes with key recommendations.

## 11.1. TRAINING

Based on service volume and expected acuity, the following specialties have been identified as the priorities for vocational training pathway development:

- General Practice;
- General Medicine;
- General Surgery;
- Obstetrics and Gynaecology;
- Gastroenterology;
- Orthopaedics;
- Paediatrics; and
- Emergency Medicine.

The focus on general practice is important given that primary health care is a cornerstone of the health system and that this workforce is essential to community hospitals in the catchment.

The additional non-GP specialties listed are identified given the relatively high volume of existing throughput at catchment hospitals and the importance of providing acute hospital services locally accessible to the catchment. Key considerations for workforce training for these specialties include:

- A critical mass of service demand is required to first attract medical workforce. With increased critical mass and growth in the medical workforce, this in turn presents greater training opportunities;
- The population size and profile impacts on the level of sub-specialisation required. Whilst GPs, non-subspecialty medicine and surgery are critical pathways to strengthen, there is an observed trend towards specialisation and reduction in generalists and GPs training;<sup>59</sup>
- Training positions will not be credentialled where services are delivered by locums and fly-in, fly-out VMOs. Building the local workforce and supervision capacity is essential to driving further training capacity in the future; and
- The north of the catchment has the largest under-supply of specialist medical workforce. Accordingly, the highest priority should be given to consolidation and expansion of the training capability at the Goulburn Base Hospital.

## 11.2. SPECIALIST WORKFORCE GAPS

The gap analysis has identified that the north of the catchment has a much larger specialist workforce deficit (38 FTE) compared to the south (13 FTE).

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59 McGrail M et al. (2017) Solving Australia's rural medical workforce shortage, Centre for Research Excellence in Medical Workforce Dynamics: Policy Brief, [www.mabel.org.au](http://www.mabel.org.au)

### 11.3. GP WORKFORCE GAPS

There is an emerging risk of fragility in the GP workforce that requires focused initiatives in succession planning at the following LGAs:

- Upper Lachlan
- Cowra
- Eurobodalla
- Bega Valley

### 11.4. SENSW RTH KEY PRIORITIES

The objectives for Regional Training Hubs are to:

- Identify regional **medical workforce needs**;
- Improve **coordination** of medical training;
- Develop regional **training capacity** and the trainee **pipeline**; and
- Improve the **continuity of training** for trainees within the Hub region.

For the SENSW Rural Training Hub, key priorities include:

1. **Strengthening partnerships** between key stakeholders, recognising there is a wide diversity of organisations that play a role in medical workforce education, training, accreditation, networking and program development.
2. **Strengthening training pathways**, with a strong focus on the GP/Rural Generalist pathway;
3. Early identification and recruitment of potential trainees to ensure a **medical training pipeline**.

This requires, amongst other tasks, promotion to undergraduate students of:

- ▶ The regional/rural medical model;
  - ▶ The advanced skills GP/ rural generalist model; and
  - ▶ The training opportunities in the district and the significant procedural training, close supervision and mentorship available;
4. **Coordination of the supports** required to enhance trainee ties to the local medical and non-medical social community; and
  5. Working with the Regional Training Hub networks to **advocate**:
    - ▶ To Universities for rural immersion of undergraduate students for as long as possible and as early as possible in the education and training pathway;
    - ▶ To Medical Colleges for more credentialled regional training positions with rotations to metropolitan services, where case load permits; and
    - ▶ To Government for appropriate financial incentives for regional medical workforce (e.g. remote subsidies and relocation allowances) and funding training positions beyond one-year appointments (see below).

## 11.5. RECOMMENDATIONS

There are six recommendations to address the workforce planning issues identified in this report.

- **Recommendation 1.** Prioritise GP succession planning to address imminent workforce attrition at identified localities (Upper Lachlan; Cowra; Cooma; Bombala; Eurobodalla; and Bega Valley) and pursue the development of innovative models for attracting and retaining GPs within the region.
- **Recommendation 2.** Establish training and career pathways to enable retention of GP proceduralists and GP generalists within LHD hospitals.
- **Recommendation 3.** Develop a LHD workforce strategy to reduce the high outflow of patients from the catchment to the ACT and to increase LHD public hospital market share to 70% in six high volume specialties:
  - ▶ Orthopaedics;
  - ▶ Gastroenterology;
  - ▶ General medicine;
  - ▶ General surgery;
  - ▶ Obstetrics; and
  - ▶ Urology.
- **Recommendation 4.** Develop a strategy to increase the size of the LHD's permanent senior medical workforce, reducing reliance on locums, with a particular focus on Goulburn Base Hospital, enabled by clinical leads appointed in priority specialties (emergency medicine, ICU, medicine, surgery and integrated care), with the aim of retaining a robust and engaged local medical workforce within the LHD and supporting high quality medical training placements; and
- **Recommendation 5.** Explore opportunities for joint appointments between the LHD and tertiary hospitals to support senior medical workforce roles in the region to strengthen inter-connectedness and develop communities of practice.
- **Recommendation 6.** Strengthen the region's medical workforce planning capability and develop a dashboard monitoring system that can be updated quarterly to track the implementation of the recommendations of this report.



## A1. List of stakeholders consulted

There were interviews with 14 individuals from 11 organisations as listed below.

Individual	Position and Organisation
Dr Sunil Adusumilli	DMS, Goulburn Base Hospital
Dr Pankaj Banga	Sector DMS, Murrumbidgee LHD, NSW Health
Dr Clayton Spencer	Chief Executive of the Western NSW LHD
Dr Simrat Sachdev	Acting DMS, Eurobodalla
Dr Liz Mullins	Executive DMS, SNSW LHD
Dr David Dumbrell	Queanbeyan Health Service
Ms Janelle Corey	Director, Medical Officer Support, Credentialing, Employment and Training Unit, ACT Health
Jacinta George,	Executive Group Manager, Health System Planning & Evaluation, ACT Health
Dinesh Arya	CMO, ACT Health
Dr Katrina Anderson,	Chair Canberra Region Medical Education Council CRMEC, ACT Health
Georgina van de Water	CEO, GP Synergy
Dr Allison Miller,	SE NSW Regional Head of Education, GP Synergy
Felicity Gemmell-Smith	Rural Programs Manager, Moree Kamilaroi Nation

A discussion guide was provided as part of the discussions with the following discussion points:

- [1] What are the **main pressure points that affect demand** for the medical workforce in the region?
- [2] What are the **specific supply issues** and challenges relevant to:
  - ▶ GPs
  - ▶ Non-GP specialists
  - ▶ Trainee GPs
  - ▶ Trainee specialists
- [3] What are the main factors that explain the **relatively low per capita workforce supply** of the catchment compared to rural NSW?
- [4] What are the main factors that lead to the **observed differences in workforce supply in the north versus the south**?
- [5] Are the **gaps identified for individual specialties** consistent with the experience of health services in meeting local workforce requirements?
- [6] What are the implications of the data on workforce gaps for **strategic workforce planning priorities**?



## A2. Technical notes

### A.2.1. CALCULATION OF CATCHMENT OUTFLOW TO ACT

The data on acute hospital separations includes NSW Health data on patients from the SE NSW catchment treated in NSW hospitals and data from ACT Health on patients from the SE NSW catchment treated in ACT Health hospitals. These two data-sets were merged to enable a comprehensive picture of the flow of patients into and out of the SE NSW catchment.

The data-set provided by the SNSW LHD contained patient place of residence data at an LGA level. However, the data-set provided by ACT Health contained patient place of residence data *only* at an SA3 level only – not at the LGA level.

As shown in Table 11-1, there is not a direct mapping of LGAs to SA3s.

- The SE NSW RTH has six SA3s: South Coast SA3; Goulburn – Mulwaree SA3; Queanbeyan SA3; Snowy Mountains SA3, Young – Yass SA3, and Lachlan Valley SA3.
  - ▶ However, only part of the Lachlan Valley SA3 is located within SE NSW RTH (the Shire of Cowra) – the following LGAs are outside the SE NSW RTH: the Shires of Bland, Forbes, Lachlan, Parkes, and Weddin.
- The SNSW LHD has five SA3s: South Coast SA3; Goulburn – Mulwaree SA3; Queanbeyan SA3; Snowy Mountains SA3, and Young – Yass SA3.
  - ▶ However, only part of the Young – Yass SA3 is located within SNSW LHD (the Shire of Yass Valley) – the Shire of Hilltops is outside the LHD and is covered by the Murrumbidgee LHD.

**Table 11-1: LGA to SA3 mapping**

LGA	SNSW LHD	SA3 NAME	REGIONAL TRAINING HUB	
Bega Valley Shire	SNSW LHD	South Coast	SE NSW RTH	
Eurobodalla Shire	SNSW LHD			
Goulburn Mulwaree	SNSW LHD	Goulburn – Mulwaree*		
Upper Lachlan Shire	SNSW LHD			
Queanbeyan-Palerang Regional	SNSW LHD	Queanbeyan		
Snowy Monaro Regional	SNSW LHD	Snowy Mountains		
Yass Valley	SNSW LHD	Young – Yass*		
<i>Hilltops Shire</i>	Murrumbidgee LHD			
<i>Cowra Shire</i>	Western NSW LHD	Lachlan Valley		Murrumbidgee RTH
<i>Bland Shire</i>	Murrumbidgee LHD			Western NSW RTH
<i>Forbes Shire</i>	Western NSW LHD		Western NSW RTH	
<i>Lachlan Shire</i>	Western NSW LHD		Western NSW RTH	
<i>Parkes</i>	Western NSW LHD		Western NSW RTH	
<i>Weddin Shire</i>	Western NSW LHD		Western NSW RTH	



### **SA3 border issues relevant to the SE NSW RTH analysis**

In order to estimate the volume of separations from the SE NSW RTH catchment that are treated in ACT hospitals, an adjustment has been made for the overlap of the Lachlan Valley SA3 which spans three RTHs: SE NSW RTH, Murrumbidgee RTH and Western NSW RTH. The adjustment involved data interpolation and applied the same catchment outflow to the ACT from the Lachlan Valley as for Queanbeyan and Young-Yass SA3. In this way, the modelling assumes that only a proportion of the outflow from the Lachlan Valley – specifically the Shire of Cowra – is attributable to the SE NSW RTH. Without this adjustment, the catchment outflow analysis would substantially over-state the volume of patient separations from the Cowra Shire component of the Lachlan Valley SA3 to the ACT.

### **SA3 border issues relevant to the SNSW LHD analysis**

In the case of the SA3 of Young-Yass there is a similar issue in which the SA3 spans two LHDs: the SNSW LHD and Murrumbidgee LHD. Young-Yass SA3 comprises two LGAs: Hilltops Shire and Cowra Shire. Only the Hilltops Shire is located in the SNSW LHD and the Cowra Shire is located in the Murrumbidgee LHD. Rather than apply data interpolation modelling, in the instance of assessing patient outflow to the ACT, the modelling for the SNSW LHD incorporates all five SA3s, including all of the Young-Yass SA3. Accordingly, this will tend to somewhat over-state the volume of patients from the LHD catchment as it includes those patients from the Shire of Cowra. Similarly, estimates of market share for the SNSW LHD will tend to be slightly reduced as the calculation will include the outflow from the Shire of Cowra.

## **11.6. DEMAND MODELLING**

The modelling of demand for workforce involved the following methodology for different medical workforce categories.

### **GPs**

The age-utilisation rates of GP services was identified based on reported age groups using Medicare Australia rates of GP service use for 2019. For each LGA in the SE NSW catchment, age-specific GP utilisation rates were used to estimate future demand for GP services by reference to age-specific population forecasts at an LGA level. GP utilisation rates were held constant. Whilst this methodology adjusts for changes in the size and age profile of each LGA in the SE NSW population it does not adjust for changes in the intensity of service use that may reflect increases or decreases in utilisation based on technology change or innovations in models of care.

### **Specialists**

Age-specific utilisation rates were calculated for all main acute and subacute specialties and for ED attendances based on hospital utilisation rates for 2019 for the SE NSW catchment area. These age-specific utilisation rates were then applied to future age-specific population forecasts for the south and north of the catchment and for the catchment as a whole. Accordingly, the future demand for specialist services is assumed to be influenced by the impact of the changes in the size and age profile of the SE NSW population, with the main driver of specialist utilisation based on demand for acute, subacute and ED hospital service

use. Whilst this methodology adjusts for changes in the size and age profile of each LGA in the SE NSW population it does not adjust for changes in the intensity of service use that may reflect increases or decreases in utilisation based on technology change of innovations in models of care.

## A3. Sub-set analysis for SNSW LHD

This appendix includes specific catchment flow analysis for the SNSW LHD.

### A.3.1. CATCHMENT OUTFLOW

As shown in Table 11-2, there were a total of 64,589 acute public hospital separations from the catchment, with 34,411 from the north and 30,178 from the south. The outflow to the ACT accounted for 16,061 separations in total, with most of this, 11,199 separations from the north, and 4,862 separations from the south.

**Table 11-2: Catchment outflow from SNSW LHD SA3s, 2017-18**

SA3 (group)	SA3	ACT	Catchment hospitals	Out of catchm't NSW public hosps	Total
Catchment North SA3s	Goulburn Mulwaree	1,433	9,906	1,167	12,506
	Queanbeyan	6,278	5,574	472	12,324
	Young - Yass	3,488	3,438	2,655	9,581
	<b>Total</b>	<b>11,199</b>	<b>18,918</b>	<b>4,294</b>	<b>34,411</b>
Catchment South SA3s	Snowy Mountains	1,370	4,294	244	5,908
	South Coast	3,492	19,535	1,243	24,270
	<b>Total</b>	<b>4,862</b>	<b>23,829</b>	<b>1,487</b>	<b>30,178</b>
<b>Grand Total</b>		<b>16,061</b>	<b>42,747</b>	<b>5,781</b>	<b>64,589</b>

### A.3.2. MARKET SHARE

As shown in Table 11-3, the market share for the SNSW LHD in total was 66%. This means that two thirds (42,747 separations) of the total separations (64,589 separations) from the catchment were treated at public hospitals located in the SNSW LHD catchment. Conversely, one third of separations received treatment in public hospitals outside the catchment. Of the outflow of 21,842 patients to out-of-catchment public hospitals, most went to the ACT, 16,061 separations or 25% market share and 5,781 went to other NSW hospitals which accounted for 9% market share.

Further, it can be seen that the ACT market share was much higher in the north at 33% compared to 16% in the south. Unsurprisingly, for the SA3 of Queanbeyan, the ACT market share was the highest at 51%.

The SNSW LHD market share was 55% in the north compared to 79% in the south.

**Table 11-3: Market share for SNSW LHD, 2017-18**

SA3 (group)	SA3	ACT	Catchment hospitals	Out of catchm't NSW public hosps	Total
Catchment North SA3s	Goulburn Mulwaree	11%	79%	9%	100%
	Queanbeyan	51%	45%	4%	100%
	Young - Yass	36%	36%	28%	100%
	<b>Total</b>	<b>33%</b>	<b>55%</b>	<b>12%</b>	<b>100%</b>
Catchment South SA3s	Snowy Mountains	23%	73%	4%	100%
	South Coast	14%	80%	5%	100%
	<b>Total</b>	<b>16%</b>	<b>79%</b>	<b>5%</b>	<b>100%</b>
<b>Grand Total</b>		<b>25%</b>	<b>66%</b>	<b>9%</b>	<b>100%</b>