Northern New South Wales

Medical Workforce Plan

2020–2026

Focusing on Richmond and Clarence Valleys
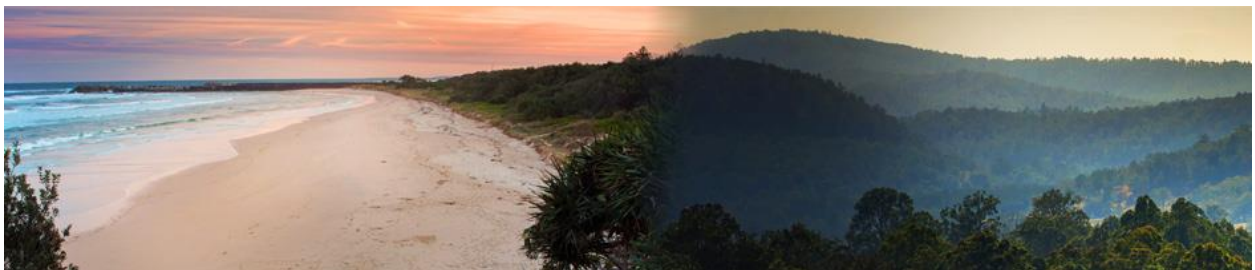
Further information

University Centre for Rural Health
61 Uralba Street, Lismore, NSW, Australia
Phone +61 2 6620 7570

Table of Contents

Foreword

The Australian health care system is among the best in the world. However, it is far from perfect. Although we have an excellent clinician workforce and education system, mal-distribution of the workforce presents substantial challenges for access to high-quality health care for many people living in regional and remote locations.

Workforce shortages in regional and remote Australia, and the resulting gaps in access to and quality of care, are part of the reason for the relatively poor health status of the population in these areas. The workforce shortages compound the disadvantage exacted by the social determinants of health – with overall lower income, poorer employment and educational opportunities for people living in rural and remote areas.

The Northern New South Wales (NNSW) Regional Training Hubs (RTHs) in the Richmond and Clarence Valleys are a part of a recent Australian Government initiative, and of a broader strategy, that aims to strengthen the rural health workforce by providing rural training and career opportunities for junior doctors. Increased training opportunities should enable early career doctors to stay and work in rural areas without the need to return to metropolitan-based teaching hospitals to further their training.

It is vital that the training opportunities in rural and remote Australia are in the areas where current and projected community need is high, and where there are relatively few of the right types of doctors in general practice or in particular specialties. An early task of the RTHs has, therefore, been to identify areas of need and to develop a Medical Workforce Plan (the Plan) to address the priority needs of local communities.

VSA Australia, a consultancy firm committed to improving health and health care, was engaged by the partner agencies for the development of this Plan. This document represents a substantial body of work, and provides an in-depth analysis of the current medical workforce in the Richmond and Clarence Network in NNSW, drawing comparisons with national and state workforce data. This analysis of the current workforce provides the basis for a framework to develop the medical workforce over the next seven years, and a plan for action over the next two years.

The careful work and consultation that underpins this Plan will provide a solid base for the work of the RTHs and others involved in workforce development over the years ahead. We recognise that the implementation of this Plan, similar to its development, will require collaboration and joint action. Such collaboration will be essential to developing the workforce that is required to meet the needs of our communities.

Professor Ross Bailie, Director, University Centre for Rural Health, The University of Sydney

Associate Professor David Garne, University of Wollongong

Mr Wayne Jones, Chief Executive, Northern NSW Local Health District

Ms Julie Sturgess, Chief Executive Officer, North Coast Primary Health Network

List of Acronyms

ACRRM	Australian College of Rural and Remote Medicine
CPD	Continuing Professional Development
EDMS	Executive Director of Medical Services
ENT	Ear, Nose and Throat
GP	General Practitioner
HETI	Health Education and Training Institute
JMO	Junior Medical Officer
LGA	Local Government Area
NCPHN	North Coast Primary Health Network
NHS	National Health Service
NNSW	Northern New South Wales
NNSWLHD	Northern NSW Local Health District
NSW	New South Wales
PGY2	Post-graduate year 2
PHN	Primary Health Network
RACGP	Royal Australian College of General Practitioners
RHMT	Rural Health Multidisciplinary Training
RTH	Regional Training Hub
UDRH	University Departments of Rural Health

Executive Summary

The Australian health care system is a success story, with much of its success due to an excellent clinician workforce and education system. A highly trained medical workforce is pivotal for the delivery of quality health care and services. This Medical Workforce Plan for Northern New South Wales is the result of a collaboration between Lismore Training Hub (The University of Sydney) and the Clarence Valley Training Hub (University of Wollongong), the Northern NSW Local Health District (NNSWLHD) and the North Coast Primary Health Network (NCPHN).

A significant portion of this Plan is the data analysis. Many challenges were faced in accessing data. National medical workforce data were readily accessed and analysed, but the same data from the state were difficult to obtain and were also received late delaying the completion of the Plan. We mapped the Northern NSW medical workforce for all specialists and general practice using the national taxonomy. Using Australian and NSW specialist numbers, ratios were calculated for specialist clinicians per 100,000 population. The same ratio was calculated for Northern NSW and comparisons carried out. This was repeated for both the Richmond and Clarence Valleys, with a threshold of 20 per cent used to flag quotients above and below the national and state ratios.

Additionally, a future medical workforce projection, based on population growth, was calculated for 2021 and 2026. Data tables are provided for specialist workforce ratios and shortfalls (in percentage and headcount) for Northern NSW, Richmond Clarence Network, and the Richmond and Clarence Valleys respectively. The data picture indicates that Richmond Valley is relatively well positioned for a specialist medical workforce. However, Richmond Valley clinicians reach out to, and respond to an inflow of patients from, Clarence Valley in providing specialist care. Based on the data analysis, Clarence Valley is identified as an area of significant need for the medical workforce.

Consultations were undertaken to define the characteristics and trends of the medical workforce in the Richmond and Clarence Network. In the short term, and in comparison to other rural areas, both locations are reasonably placed for most medical workforce disciplines. However, shortages in key disciplines and the distribution of the workforce presents significant challenges. In light of the data analysis, and after consultation and discussion with the Reference Group, the following areas were highlighted as critical to health care delivery and in need of focused attention:

- Psychiatry
- Rehabilitation Medicine
- Palliation Medicine
- Geriatric Medicine
- Neurology
- General Medicine
- Otolaryngology
- Small Hospital Medical Workforce
- General Practitioners.

General Practice is highlighted as an area requiring much focus and development, as it is critical to a well-functioning health system. The three Local Government Areas (LGAs) of Richmond, Clarence and Kyogle (followed by Lismore) have amongst the highest rates of health risks and disadvantage in NSW, and are in most need of more GPs. Additionally, the consultations highlighted the importance of generalist training responding to the needs of smaller rural hospitals, as well as having access to training that builds generalist skills and broader experience.

In recent years, policy directives from both the Australian and State Governments have resulted in the establishment of processes and structures wherein more medical practitioners will be able to complete the various stages of their medical training, from student to specialist, within rural areas. The development of University Departments of Rural Health (UDRH), and the expansion of medical undergraduate places through the establishment of rural clinical schools, has provided opportunities to employ medical graduates in rural and remote health services. The Northern NSW Regional Training Hubs (Lismore and Clarence Valley) are a part of the Australian Government's initiative to enable doctors to stay and work in rural areas without the need to return to metropolitan-based teaching hospitals to further their training.

Northern NSW has all the building blocks of a strong health education infrastructure. However, one priority for action would be to strengthen the relationship of Regional Training Hubs and the Local Health District with the Colleges. This would further build the region's reputation for excellence in the delivery of training and education programs.

It is vital that the training opportunities are in rural areas where current and projected community need is high, and that a Medical Workforce Plan is developed to address the priority needs of these local communities. This Plan articulates the vision, goals and strategies that will be pursued in the Richmond and Clarence Valleys of Northern NSW, through collaborative action on the part of the collaborating agencies. The vision is for the Richmond and Clarence Network to have the "Right medical workforce, at the right place, practising at the peak of their training with a strong training and education infrastructure".

Four goals have been articulated to achieve this vision:

1. Make the best use of the medical workforce
2. Improve the distribution of the medical workforce
3. Attract and retain the right medical workforce
4. Enhance the training infrastructure.

This Plan has been developed through a collaborative process with input from key agencies. Similarly, its implementation requires these agencies to work together. The analysis of the current workforce provides the basis for a framework to develop the medical workforce over the next seven years, and phase 1 of an Implementation Action Plan over the next two years. It is intended that the Plan will be implemented in three distinct phases: 2020–2021, 2022–2023 and 2024–2025, with the final year of the Plan, 2026, earmarked for its review and reformulation.

To ensure systematic implementation of the Plan the following structure is recommended. The Implementation Oversight Group, comprising of senior executives from the key agencies, is responsible for oversight, resourcing and endorsement. The Implementation Coordination Team, comprising of

officers from the agencies, is responsible for the implementation of the Plan and ensuring the necessary collaborations and partnerships essential for sustained and effective action are in place.

Northern NSW Medical Workforce Plan: Summary
2020–2026
(focusing on Richmond and Clarence Valleys)

VISION: Right medical workforce, right place, practising at the peak of their training with a strong training and education infrastructure in place

Goal 1. Make the best use of the medical workforce

- 1.1 – Facilitate processes to assist clinicians to practise at the peak of their skills
- 1.2 – Build on the Northern NSW medical workforce strengths
- 1.3 – Respond to evolving models of care
- 1.4 – Expand the scope of practice of existing health professionals
- 1.5 – Ensure effective financial arrangements for the medical workforce

Goal 2. Improve the distribution of the medical workforce

- 2.1 – Improve the distribution of the specialist medical workforce between Richmond and Clarence Valleys
- 2.2 – Engage key stakeholders in the objective of establishing a private hospital at Grafton
- 2.3 – Promote the Northern NSW region and create incentives to attract the medical workforce to under-serviced areas

Goal 3. Attract and retain the right medical workforce

- 3.1 – Build on the strong reputation of Northern NSW to make it a region of choice to attract and retain the best talent
- 3.2 – Take systematic and collaborative action to address mission-critical workforce challenges
- 3.3 – Establish a regional compact to exercise collective leadership to recruit and retain the medical workforce
- 3.4 – Take collective action to strengthen further the culture of quality and safety in Northern NSW

Goal 4. Enhance the training infrastructure

- 4.1 – Promote Northern NSW as a region of training and education excellence with strong infrastructure and building blocks
- 4.2 – Build collaborative processes that support integrated training pathways from pre- and post-vocational training
- 4.3 – Introduce innovation and creativity to make the system more agile and adaptive, and to foster a future workforce that can respond to need and changing models of care

Moving Forward: 2020–2026

In this section we articulate the vision, goals and strategies that emerged through a process of consultation as the most important to implementing the Plan in the Richmond and Clarence Valleys of Northern NSW. Through collaborative action on the part of the health care delivery sector (the Local Health District and the Primary Health Network) and the education sector, we are developing a structure to ensure implementation and enhance collaboration between the agencies (see p.17). It is intended that the Plan will be implemented over the next seven years, supported by collaborative biennial reviews.

Vision

Right medical workforce, right place, practising at the peak of their training with a strong training and education infrastructure in place

Goals

1. Make the best use of the medical workforce
2. Improve the distribution of the medical workforce
3. Attract and retain the right medical workforce
4. Enhance the training infrastructure.

Goal 1. Make the best use of the medical workforce

The Northern NSW region is well placed for Goal 1, as it has a large cadre of highly skilled, capable and committed specialists. The consultations highlighted some key considerations for making the best use of the medical workforce, including:

· Ensure clinicians increasingly practise at the peak of their skill[1]

· Respond to evolving models of care

· Devolve elements of care to non-medical clinicians[2]

· Strike a balance between primary and secondary care

· Improve access and efficiency through the effective use of technology

· Embrace the use of new technology, e.g. telemonitoring, tele health, data and decision support

· Expand the scope of practice of existing health professionals

· Reduce variations in practice and the risk of over-servicing

· Decrease wasteful practice

· Ensure effective financial arrangements (payment for bundles of care, payment for outcomes, revision of incentives and blended payment reforms).

An aging population and the increasing prevalence of chronic and long-term conditions contribute to a heightened demand for services. Care coordination and integration, coupled with the better use of both

---

[1] The United Kingdom's National Health Service *'skills escalator'* sets out such an approach.

[2] Naturally this is only possible when there is sufficient number of clinicians in the field in which the care is to be devolved.

primary health care and new technology, can assist in managing the demand on acute services and increasing efficiency and productivity.

During the consultations the current strength of the region in terms of its medical workforce was highlighted, and the importance of building on this strength emphasised. Additionally, it was highlighted that greater use can be made of the General Practice workforce in support of the specialist workforce, with steps already taken in this direction with regard to Palliative Care and Pain Management. However, better use can be made of those who are already trained. For example, training possibilities should be explored for GPs to address specialist areas of need such as Geriatric Medicine, Palliative Care and Pain Management. In this way, training opportunities for GPs can be enhanced and support provided in practice. Another dimension of this is the design and implementation of models of care that make better use of the non-specialist workforce, with specialists training, supporting and supervising the work.

Goal 2. Improve the distribution of the medical workforce

Despite advances made through state and national policy efforts, inconsistent distribution of medical services in Australia remains a persistent and complex issue. A series of policy initiatives has steadily improved the number of graduates entering rural practice over the past three decades, commencing with the Rural Undergraduate Support and Coordination Program in 1993, followed by the the University Departments of Rural Health and Rural Clinical Schools, and the Rural Clinical Training and Support Program. These initiatives have resulted in 25 per cent of the intake of students in medical schools now coming from a rural background as a mandated minimum for all Schools, with some programs having a considerably higher rural origin minimum requirements (eg 56% for University of Wollongong). Additionally, all federally supported medical students are required to undertake a four-week structured rural placement and there is also a requirement for a proportion of students to undertake an extended rural clinical placement.

Subsequent initiatives such as the Australian General Practice Training Program are required to ensure that at least 50 per cent of General Practice vocational training placements are in rural or remote areas. As a result, the number of GPs who adopt rural practice has increased by 23 per cent since 2010, compared with a 3.5 per cent population increase in these areas and only a 10 per cent rise in the metropolitan General Practice workforce (Ranmuthgala 2016).

In a joint submission on medical workforce distribution in 2017, the Medical Deans of Australia's medical schools noted that

> …what is needed to achieve a better distribution of doctors in rural Australia is a 'flipped' model of regionally based specialist training with rotations back into metropolitan hospitals if needed. (Medical Deans 2017)

In 2016, the Australian Government introduced the Integrated Rural Training Pipeline to be based at Rural Health Multidisciplinary Training (RHMT) program sites across Australia. RHMT supports a network of rural clinical training sites, with university staff living and working in regional, rural and remote areas teaching health students, and encouraging them to remain in these communities when they complete their training program. In combination with infrastructure, equipment and staffing resource investment through the RTHs, these investments will ensure that more practitioners will be able to complete the various stages of their medical training – from student to specialist – within rural areas.

The result of our Northern NSW workforce mapping highlighted a significant challenge with regard to the distribution of the medical workforce, with the Clarence Valley having a much lower concentration of medical professionals than the Richmond Valley. As it is unlikely that the medical workforce distribution can be adjusted in the short to medium term, strategies must be adopted to facilitate a more even distribution of a specialist medical workforce between the Richmond and Clarence Valleys.

One such strategy could be the establishment of clinical streams. For example, the establishment of a Cardiology clinical stream would provide medical care to both the Clarence and Richmond Valleys by giving clinicians responsibility to make clinical decisions. Consideration could also be given to the greater use of telemedicine to expand not only the reach of services but to make better use of specialists' time.

Another strategy would be to set up a private hospital in the Clarence Valley, which currently has none, as this has proven to be an effective way of attracting specialists. Establishing a private hospital – coupled with enhanced training opportunities, better promotion of the region, conjoint appointments, establishment of multidisciplinary teams, and family friendly arrangements – would have a significant impact in addressing the workforce distribution and shortfall challenges in Clarence Valley.

Goal 3. Attract and retain the right medical workforce

Most progressive organisations aspire to become employers of choice so they can attract and retain the best talent. Medical workforces function within a complex and dynamic environment and system, with members facing considerable time and work pressures and their work subjected to much scrutiny both in terms of quality and cost. To maintain the requisite quality and effectiveness of care, their core medical skills have to be refreshed and refined through ongoing education and upskilling.

To attract the right workforce, an organisation needs to focus on learning and development. This necessitates strong partnerships with higher education, vocational education and training providers, all of which will help ensure a future supply of well-trained and educated professionals for the current workforce.

Access to ongoing training and professional development is essential to the recruitment and retention of medical professionals in rural areas. Geetha Ranmuthugala (2016) identifies the importance of exercising local leadership to retain doctors. This, in many cases, requires access to hospital practice and strong links to colleagues within the funded hospital system. The importance of networking, high-quality locum support to permit continuing education, and access to hospitals and hospital care is important, particularly for newly trained generalist doctors. Organisations that are favoured by employees are those with a strong reputation that invest in staff learning and development, operate ethically, support family and life work balance practices, and ensure staff feel valued and well rewarded (Employee view, Lead Management Australia 2010).

Among the characteristics that give an organisation a strong reputation in the industry are its values and culture, how it treats its staff, the career pathways it offers to employees, its communications platforms (website etc.), its diversity policies, and the care it shows for the wellbeing of its employees.

Within the health industry the reputation of an organisation is tied to its culture of quality and safety education, training, systems and processes. In an organisation with a strong quality and safety culture the care of the patient comes before all else. In these organisations there are much lower incident and accident rates, higher productivity and greater commitment from employees, as health professionals

work collaboratively with management in eliminating hazards, mitigating unsafe behaviours, and building systems that improve the quality of care and the safety of patients and employees.

Another sign of a strong organisational culture, essential to being an employer of choice, is low absenteeism due to sickness. In such organisations staff are fully engaged in the organisational life of the workplace rather than on simply being satisfied with their job (as demonstrated by satisfaction surveys). Full engagement heightens employees' sense of belonging and use of their talents resulting in improved performance and reduced absenteeism (Harter et al. 2003; Chenoweth 2011).

> **Internet and social media**
> - Have visible on-line presence – especially as it is the main avenue by which new employees engage with an organisation
> - Have brand ambassadors
> - Participate in on-line forums
> - Be aware that everything posted reflects the organisation's values and creates an impression
> - Select the right media for the message
> - Have a strategy to deal with feedback – especially negative feedback

Management plays an imperative role in creating a strong workplace culture by introducing initiatives such as a structured employee recognition framework in which employees are recognised for their contribution to various aspects of the organisation's work, such as their length of service, quality of work, and contribution to patient care, patient safety and so forth.

The NSW *Health Professional Workforce Plan 2012–2022* recommends flexible working arrangements to allow the health workforce to manage the conflicting demands of family and work. There is evidence that, should these arrangements be implemented well and responsibly, they will yield considerable benefits to the organisation, its employees and the community. Further, these flexible arrangements have been shown to increase employees' commitment to the organisation and increase rates of staff attraction and retention, earlier return to work after parental leave, improved staff morale and engagement in the workplace, as well as reduced absenteeism and sick leave.

> Family friendly flexible work arrangements may include:
> - leave-without-pay provisions
> - accessing accrued rostered days off in part-days or more flexible job share arrangements
> - accessing annual leave in single or part-day periods
> - taking time off in lieu of overtime payments
> - working additional hours to make-up for time taken off
> - working part-time or creating part-time work opportunities
> - study leave
> - phased retirement.

In an effective organisation, staff are given regular feedback on their performance. However, in demanding work environments, performance feedback and development are often not prioritised. This can leave staff unaware of how their performance is viewed, with a lack of professional development pathways and a feeling of not being valued. Building opportunities to discuss employees' performance can create a culture of effective communication, provide staff with opportunities for professional and career developments, and create possibilities for a review of position descriptions and remuneration.

To be an employer of choice, an organisation must pay attention to its communications and messaging – both internal and external. Significant investment of time and energy is required to build a respected and recognised 'brand' through thoughtful consideration of the use of social media and all communication mediums, internal and external to the organisation.

The intimate and critical involvement of the medical workforce in the core function of the health care system necessitates their engagement in organisational decision-making processes, both strategic and operational, for the system to benefit from their unique perspective. This requires organisations to develop processes and incentives to facilitate the leadership of the medical workforce. Given the well-recognised and critical importance of clinical leadership, it is most beneficial for the organisation to develop programs in this area. These can include leadership training opportunities, networking arrangements and learning sets, engagement in projects and programs in both clinical and administrative domains, and secondments.

Additionally, some organisations have implemented successful leadership development programs in which clinicians with talent and interest are employed in leadership roles, and considerable investment given to building their capacity and capability. In this way local leaders are identified and developed.

It is not uncommon for organisations to have in place employer-sponsored employment programs, the objective of which is to attract and retain clinicians.

> The NSW Health Leadership Framework (2013) was developed by the NSW Health Education and Training Institute. This framework includes five areas of leadership development:
>
> 1. Achieving outcomes
> 2. Developing and leading self
> 3. Engaging people and building relationships
> 4. Partnering and collaborating across boundaries
> 5. Transforming the system.

These programs often target hard-to-recruit clinical staff such as Aboriginal and Torres Strait Islander clinicians, nurses and other medical professionals. They include traineeship and scholarship programs for staff to undertake employer-supported education programs.

An organisation with a sound understanding of its workforce priorities has information on positions and employees that are mission-critical, understands which ones are hard to fill and has a plan (with a workforce supply pipeline) for these roles. Related to this is a sound understanding of the clinicians who will retire over the next 10 to 15 years.

A medical workforce strategy needs to respond to the challenges that will be caused by the imminent retirement of those currently employed in hard-to-fill medical positions. This requires a sound understanding by agencies of the retirement intentions of staff, particularly those in mission-critical positions. This might include communicating with clinicians in the 54–65+ age group about their retirement intentions, and a survey of all staff to get a better understanding of their concerns around this issue. Part of the objective of such engagement is to facilitate a process for the smooth transition of staff into retirement and greater control by them over managing the end of their careers. Furthermore, it was highlighted during the consultations that conjoint appointments between the health industry and the education sector can be attractive to specialists.

> *Measurement of rural GP location changes reveals annual mobility rates of about 5 per cent for doctors in regional centres, 10 per cent for those in smaller rural towns (populations of less than 15,000) and 18 per cent for very remote areas. This evidence supports retention policies which weight incentives by both geographical remoteness and town size.* (McGrail 2017)

This issue raises the medical staff succession risk of being unable to recruit to a critical medical workforce role within an acceptable timeframe. Management of this risk involves efforts to reduce the

likelihood of lengthy vacancies requiring the use of an alternative workforce. Actions to manage and mitigate this risk include:

- a sound understanding of the mission-critical roles, and the intention of those serving in them
- regular discussion with clinical leaders about these roles
- knowledge about the capacity of the system to respond should a position fall vacant without notice.

Additionally, cross-region sharing by Local Health Districts of their experience and successful approaches in recruitment and retention would help all organisations in the system. This requires moving away from the current competitive approach to strategies such as locum engagement and incentive offers, and creating a collaborative environment where greater leverage is made of the strength of the collective.

Analysis of data, along with the consultations, identified the following areas for focus and prioritisation with regard to recruitment and retention:

- Psychiatry
- Rehabilitation Medicine
- Palliation Medicine
- Geriatric Medicine
- Neurology
- General Medicine
- Otolaryngology (ENT)
- Small Hospital Medical Workforce
- General Practitioners.

This does not negate the importance of recruiting and retaining other specialist disciplines.

Attracting medical graduates

There are a number of successful strategies that attract medical graduates to rural and remote areas, which are listed here.

Selection of rural-origin medical students

Selecting medical students with a rural-origin background increases the supply of rural GPs by a factor of 2.5 (McGrail 2017). Successful methods to encourage students from rural areas to study medicine include promoting health careers in primary and secondary education, and provision of scholarships to support their studies.

Pedagogical approaches

Gorman (2017) cites evidence that promoting rural practice through medical education improves rural recruitment. He recommends that universities employ a pedagogical approach to medical student education that showcases 'desirable' careers, and promotes practice locations as those where there is a high level of unmet health need.

The available evidence indicates that first-hand experience of rural or remote health care in education and training is a critical factor to improving recruitment in these locations (Humphries, Lyle & Barlow 2018). Gorman (2017) recommends that all medical graduates be exposed at the commencement of their postgraduate careers (i.e. internship) to careers and locations where there is a high level of unmet health need.

Rural vocational training

> *GP vocational training of Australian-trained doctors in rural settings is associated with subsequent rural practice that is sustained for at least five years. This effect is independent of, and strengthened by, doctors' rural childhood origin, demonstrating the importance of policies that support both rural training pathways and medical student selection.* (McGrail 2017)

Evidence generated by the Medicine in Australia: Balancing Employment and Life (MABEL) longitudinal study confirms that current government policies – of encouraging rural-based students to study medicine, increasing opportunities for medical education outside urban areas and facilitating GP vocational training in rural areas – are increasingly attracting and retaining rural health professionals.

Goal 4. Enhance training infrastructure

A Health Workforce Australia study in 2012 reports that the number of medical students nearly doubled between 2003 and 2012 (1,889 to 3,686). For this region to attract and retain a medical workforce it must take strides to be known as a learning region with strong educational organisations. This requires not only well-established educational programs, but also agencies that have the systems and processes necessary to support staff development and organisational growth and transformation.

All organisations could work together to strengthen the systems and processes which encourage flexibility and multidisciplinary teaching and learning. This learning mode will assist with the recruitment and retention of clinicians, as well as with fostering a future workforce that can respond to changing models of care, while ensuring safety and quality. The emphasis on building the required systems and processes ensures sustainable training pathways, ones that are not dependent on personalities, are hardwired and not subjected to vicissitudes of change.

Several studies note the importance of RTHs in supporting integrated training pathways from pre- to post-vocational training. Evaluation of the existing University Departments of Rural Health has shown that these facilities have been effective in increasing the number of students in rural practice as well as in forming centres of knowledge for research, networking and ongoing professional development (Humphries & Lyle 2018). Recent expansion of these University Departments, and the use of Rural Clinical Schools attached to Faculties of Medicine, has led to a distribution of medical training, or components of it, throughout most of Australia.

Rural Generalist Medicine is an important vocational pathway that has been developed to meet the needs of rural communities. A Rural Generalist is a medical practitioner qualified to serve in a rural hospital or community-based primary medical practice, and/or in a hospital-based secondary medical practice, in at least one specialised medical discipline without supervision by a specialist medical

practitioner. In 2013, the Health Education and Training Institute (HETI) established the NSW Rural Generalist Training program with an initial investment of 15 places per year. The program has been expanding by five places per year, and by 2020 will achieve 50 training places per annum. Among non-GP specialists, those working in general medicine or general surgery are often the mainstay of rural specialist supply, particularly in small regional centres. Increasing support for their training and development in rural areas is critical for ensuring an adequate supply of doctors in rural practice, particularly in the face of increasing sub-specialisation. As surgeons in rural areas are required to perform a wide range of surgeries, specialist urban-based surgical training has limitations for rural practice. Providing an opportunity for surgeons to train in regional areas also supports stability, as this training often coincides with the period of life in which doctors are establishing homes and families.

Northern NSW has all the building blocks of a strong health education infrastructure. One priority for action would be to strengthen the relationship of Regional Training Hubs and the Local Health District with the Colleges, so as to gain greater training opportunities and accreditation for the region. This would build the region's reputation for sound delivery of training and educational programs.

A fit-for-purpose medical workforce requires an integrated training strategy, now established in many states for general practice and also beginning in other areas of specialist training. The training organisations on the Northern Rivers provide excellent nationally recognised education programs, a competitive advantage that is unique to the region. The full potential and possibilities that these agencies bring to the region is yet to be realised. The region can also take advantage of the e-learning products developed by HETI, which allow staff to learn at their own pace.

During the consultations, especially with the Reference Group consultation, the following needs were highlighted:

- generalist training opportunities
- a workforce that would fulfil the requirements of smaller rural hospitals
- early career doctors with access to training that builds generalist skills and a broader experience to assist them with the decision between specialist or general practice training.

The region could position itself to address the above needs systematically and to take steps to gain access to new funding for Rural Generalist training. On 27 March 2019 the Australian Government announced allocation of $62million to fast track the Rural Generalist Pathway Program over four years. The objective of this program is to provide easier access to doctors and shorter waiting times for rural and regional areas. Rural Generalist Pathway funding focuses on the challenge of medical workforce distribution in Australia. The intention is to fund pathways to encourage Rural Generalists to work in difficult-to-serve parts of the country. This is in recognition of the key role that these doctors play in providing rural and remote Australians with access to General Practice, Emergency Care and other specialist services both in hospitals and in the community. The funding is for initiatives such as coordinated training for Rural Generalists, expansion of the Rural Junior Doctor Training Innovation Fund to provide more early exposure to rural training, and seeking sub-specialty recognition of Rural Generalism through the Medical Board of Australia.

To achieve the above outcomes, the linkage between the RTHs and Medical Training Providers such as GP Synergy, the Colleges and the health industry has been instrumental. Concerted and collaborative

steps need to be taken to ensure that a proportion of those who are trained in rural areas stay on there to work, and that the pre-vocational and vocational trainees have a positive and fulfilling experience, including a diversity of training exposures.

Medical Workforce Plan: Framework for Action 2020–2026 (Seven-Year Plan)

This Plan sets out the framework for the development of the medical workforce over the next seven years. This framework will be implemented in three distinct two-year phases (see next Section page 27 for the first phase of implementation in 2020–2021).

Goal 1: Make the best use of the medical workforce

    1.1 – Facilitate processes to assist clinicians to practise at the peak of their skills
    1.2 – Build on the Northern NSW medical workforce strengths
    1.3 – Respond to evolving models of care
    1.4 – Expand the scope of practice of existing health professionals
    1.5 – Ensure effective financial arrangements for the medical workforce

1.1 Facilitate processes to assist clinicians to practise at the peak of their skills
1.1.1 Explore the utilisation of the approach set out in the United Kingdom's National Health Service (NHS) 'skills escalator'
1.1.2 Ensure medical practitioners are not doing work that is below their level of training • Survey clinicians to identify elements of work that could be devolved • Establish a process to assess and devolve elements of care to non-medical clinicians so as to free up clinicians for the clinical work in which they are trained
1.1.3 Examine models of care in the health care industry to make better use of the non-specialist workforce

1.2 Build on the Northern NSW medical workforce strengths
1.2.1 Improve patient access and efficiency through the effective use of technology, for example: • Telemonitoring, telehealth, data and decision support
1.2.2 Take advantage of the Commonwealth Rural Generalist Pathway to attract additional resources to Northern NSW (see Goal 2)
1.2.3 Use advocacy with State and Australian Governments and professional Colleges to influence policy along with champions and networks

1.3 Respond to evolving models of care
1.3.1 Design and implement models of care that make better use of non-specialist workforce, with specialists supporting and supervising the work
1.3.2 Establish integrated planning between training providers and health service providers
1.3.3 Reduce variations in practice; risk of over-servicing; wasteful practices

1.4 Expand the scope of practice of existing health professionals
1.4.1 Establish more and varied training pathways and enablement structures for GPs to support specialists, for example: • Palliative Care, Pain Management, Pathology and Geriatric Medicine

- Address the delay for GPs between completing training and commencing sub-specialised practice[3]

1.4.2 Establish more nurse and allied health specialists, such as educators (diabetes), nurse specialists (pulmonary) and nurse practitioners (wound care)

1.5 Ensure effective financial arrangements for the medical workforce

1.5.1 Take steps to assess funding models for medical workforce either to take local action or influence national policy, for example:
- Local opportunities that are not fee-for-service
- Incentive and payment reforms, such as blended payments
- Funding for supervision and training

Goal 2: Improve the distribution of the medical workforce

2.1 – Take steps to improve the distribution of the specialist medical workforce between the Richmond and Clarence Valleys

2.2 – Engage key stakeholders in the objective of establishing a private hospital at Grafton

2.3 – Promote the Northern NSW region and create incentives to attract the medical workforce to under-serviced areas

2.1 Take steps to improve the distribution of the specialist medical workforce between Richmond and Clarence Valleys

2.1.1 Formulate strategies to facilitate a more even distribution of the medical workforce between the Richmond and Clarence Valleys and improve access to specialist care in under-serviced areas, for example:

- Hub and spoke model – reaching out from regional centres to smaller communities
- Clinical streams – with clinicians' taking responsibility for patients in under-serviced areas having easier access to specialty services that cannot be supplied locally in the short-term
- Easier referral pathways and more specialist outreach clinics in under-serviced areas
- Use of telemedicine not only to expand the reach of services but to make better use of specialists' time
- Modern facilities and technology in under-serviced areas

2.2 Engage key stakeholders in the objective of establishing a private hospital at Grafton

2.2.1 Encourage Public/Private Partnerships for the development of a private hospital in the Clarence Valley to bolster specialist medical workforce recruitment and retention

2.3 Promote the Northern NSW region and create incentives to attract the medical workforce to under-serviced areas

2.3.1 Build incentives to attract the medical workforce to under-serviced areas
- Improve training and support for sole practitioners – e.g. Emergency Medicine Training Program that visits smaller sites regularly to upskill staff

---

[3] Currently at least two GPs trained in Palliative Care have not had the opportunity to be engaged in the field.

• Give practitioners the opportunity to teach – place medical students at smaller sites for part of their training • Enhance training opportunities – JMO rotation • Advocate for the recruitment of multidisciplinary teams – including allied health staff to support specialists • Explore opportunities to seek out rurally bonded practitioners to the region • Provide regular leave relief, explore opportunities with agencies such as RDN to achieve this • Allow medical staff from under-serviced areas to attend conferences – provide infrastructure to support meetings with their colleagues in regional and metro areas via video conferencing • Ensure practitioners feel valued and appreciated by community and health services

2.3.2 Promote Northern NSW as an attractive setting for practice and family life
 	
• Produce simple promotional material to demonstrate the desirable attributes of the region, especially the under-serviced areas, that:
    o Showcases role models currently working in these areas
    o Highlights the desirable lifestyle
    o Outlines tangible training pathways
    o Uses podcasts and social media to reach emerging practitioners
 	
• Promote the region as an attractive place for family life by:
    o Ensuring there are opportunities for practitioners' families and highlighting them
    o Creating a welcoming environment for new arrivals
    o Encouraging social activities to reduce isolation

2.3.3 Train more doctors in our own communities • Make better use of online learning so doctors do not have to go metro to learn new skills • Hold more conferences and courses locally • Increase flexibility by offering part-time and job-sharing positions
2.3.4 Influence the Colleges to develop new training models and pathways to suit the needs of under-serviced communities: • Develop limited scope training pathways for proceduralists – e.g. GP Endoscopy, GP ENT Surgery, Nurse Practitioners • Accredit specialist training positions in under-serviced areas.

Goal 3: Attracting and retaining the right medical workforce

3.1 – Build on the strong reputation of Northern NSW to make it a region of choice to attract and retain the best talent

3.2 – Take systematic and collaborative action to address mission-critical workforce challenges

3.3 – Establish a regional compact to exercise collective leadership to recruit and retain a medical workforce

3.4 – Take collective action to strengthen further the culture of quality and safety in Northern NSW

3.1 Build on the strong reputation of Northern NSW to make it a region of choice to attract and retain the best talent
3.1.1. Invest in staff learning and development to attract and retain the right workforce

- Foster a culture where quality is maintained, and core medical skills are refreshed and refined through ongoing education and upskilling
- Build strong collaboration between higher education, vocational education and training providers
- Provide opportunities for con-joint appointment between the health industry and the education sector

3.1.2 Engage staff in organisational life and increase work satisfaction
- Using staff talent, reducing absenteeism, increasing a sense of belonging and improving staff morale

3.1.3 Establish and maintain a structured employee recognition framework
- Recognise employees for their contribution across the spectrum of the organisation's work, e.g. length of service, quality of work, contribution to patient care, and contribution to patient safety

3.1.4 Support family and life–work balance[1]
- Family friendly flexible work arrangements may include:
  - Leave-without-pay provisions
  - Access to accrued rostered days off in part-days or more flexible job share arrangements
  - Access to annual leave in single or part-day periods
  - Availability of flexible time off in lieu arrangements
  - Opportunities for part-time work
  - Provisions for study leave
  - Arrangements for phased retirement

3.1.5 Establish processes and systems to give employees regular feedback on performance
- Ensure staff feedback is prioritised, including opportunities to discuss employees' performance and development pathways

3.1.5 Pay attention to organisational communications and messaging, both internal and external
- Give thoughtful consideration to the use of social media and all communication mediums internal and external to the organisation

---

3.2 **Take systematic and collaborative action to address mission-critical workforce challenges**

3.2.1 Establish a process to gain an ongoing understanding of mission-critical medical workforce issues, particularly those roles that are hard to fill in public and private hospitals

3.2.2 Focus and prioritise the retention and recruitment of the following disciplines, as highlighted by the data analysis, consultations and survey information:
- General Practice in Clarence, Richmond, Kyogle and Lismore LGAs
- Psychiatry
- Rehabilitation Medicine
- Palliation Medicine
- Geriatric Medicine
- Neurology
- General Medicine
- Otolaryngology (ENT)
- Small Hospital Medical Workforce
- General Practitioners with sub-specialised interest

---

[1] Employee View, Lead Management Australia, 2010

3.3 Establish a regional compact to exercise collective leadership to recruit and retain medical workforce

3.3.1 Develop a recruitment package that includes incentives, such as:
- Opportunity for public and private hospital practice
- Links to networks of professionals and colleagues
- Continual educational opportunities
- Involvement in ongoing health care design and decision-making processes, both strategic and operational, to benefit from the medical workforce's unique perspective
- Greater interaction and action between private and public facilities in recruitment endeavours
- Engaging local governments in promoting the region for workforce recruitment, e.g. Smart Move campaign
- Developing concise and attractive information packages to promote the region, with a single point of contact for all information
- Making temporary housing available to assist with the smooth settlement of newly arrived clinicians
- Assisting with career opportunities for spouse and partners.

3.3.2 Develop a Clinical Leadership Program to identify and nurture local clinical leaders. The program could include:
- Identifying clinicians with talent and interest in leadership and investing in their development
- Networking arrangements and learning sets
- Engaging the medical workforce in projects, programs and roles in clinical and administrative domains
- Establishing secondment opportunities

3.3.3 Establish a process for the transition of medical staff into retirement, thereby reducing the likelihood of lengthy vacancies requiring use of alternative workforce. The process could include:
- Engaging staff in the process of succession planning, including assisting staff in the transition, with greater control into retirement
- Ongoing communications with clinicians in the >60 years bracket
- Surveying the medical workforce to gain understanding of their retirement intentions.

3.3.4 Connect with other health districts to establish collaborative processes to leverage the strength of the collective for the recruitment and retention of the medical workforce. Such as
- Sharing of knowledge and experience
- Moving away from competitive approaches to collaborative strategies for locum engagement and incentive offers

3.3.5 Strengthen the executive leadership arrangements for medical services in the Richmond and Clarence Network, or more broadly within the LHD

3.4 Take collective action to strengthen further the culture of quality and safety in Northern NSW

3.4.1 Ensure a universally adopted and supported system for ongoing quality and safety education and training through:
- Commitment from management and employees, resulting in lower incident and accident rates

3.4.2 Engage health professionals to work in partnership with management in building a system to eliminate hazards, mitigate unsafe behaviours and improve the quality and safety of patients and employees

Goal 4: Enhance the training infrastructure

4.1 Promote Northern NSW as region of training and education excellence with strong infrastructure and building blocks

4.2 Build collaborative processes that support integrated training pathways from pre- to post-vocational training

4.3 Introduce innovation and creativity to make the system more agile and adaptive, and foster a future workforce that can respond to need and changing models of care

4.1 Promote Northern NSW as a region of training and education excellence with strong infrastructure and building blocks
4.1.1 Build on the current strengths, knowledge and willingness to create a collaborative culture of learning, with reciprocity and shared responsibility, between agencies
4.1.2 Formulate creative approaches to build on the partnership between public and private sectors to create more capacity to offer services and placement opportunities, e.g. St Vincent's partnership with LHD
4.1.3 Work together to strengthen the systems and processes that encourage flexibility and multidisciplinary teaching and learning
4.1.4 Highlight learning and teaching as a priority, and encourage policies and approaches that support learning, e.g. provision of resources, facilities, time and incentives for learning and teaching including through: • Strong leadership within hospitals to support learning, training and education • Promoting strong understanding of training pathways and curriculum • Use of private facilities for training with possible shared supervision and more flexible arrangements • Staff rosters with time for learning
4.1.5 Ensure the design of new facilities, and redesign of existing facilities, to enable and support teaching and learning, e.g. facilities that include education spaces as learning hubs
4.1.6 Take advantage of the e-learning products developed by HETI to allow staff to learn at their own pace
4.1.7 Continue to build professional networks and strengthen linkages between rural and metropolitan services and professionals to facilitate opportunities for secondments, professional development and collaboration

4.2 Build collaborative processes that support integrated training pathways from pre- to post-vocational training
4.2.1 Collaborate to develop an integrated training strategy for General Practice in some specialist areas
4.2.2 Ensure early-career doctors have access to training that builds generalist skills and enables a broader generalist experience to assist with the decision of specialist or GP training
4.2.3 Attract more talented younger GPs and medical graduates to the region through: • Ensuring that the experience of placements and internships is positive and satisfying • Attracting medical students with a rural-origin background • Encouraging a diversity of training exposures with more generalist opportunities • Promoting early exposure to rural training/practice through medical education

VSA AUSTRALIA

• Increasing Rural GP Vocational Training, encouraging training in areas of need to increase recruitment and retention
• Exploring models such as Hunter and Murrumbidgee General Practice Training Consortium for regions with inadequate training facilities

4.2.4 Support generalist health professional career pathways and the development and utilisation of generalist clinical skills, including through the Rural Generalist Training Program
• Take advantage of the Commonwealth Rural Generalist Medicine Pathway Program to meet the needs of rural communities by:
o Boosting General Practice, Emergency Care and other specialist services in hospitals and in the community
o Developing a collective proposal to commence initiatives to coordinate training for Rural Generalists
4.2.5 Continue to roll-out the generalist medicine training pathway for rural hospitals and establish more rural fellowship specialist positions
4.2.6 Further strengthen the linkage between RTHs and Medical Training Providers, e.g. GP Synergy, the Colleges and the health industry
4.2.7 Take steps to increase GP registrar placement in the Clarence, Richmond and Kyogle LGAs. Use RTH networks to build relationship with the Colleges

4.3 Introduce innovation and creativity to make the system more agile and adaptive, and foster a future workforce that can respond to need and changing models of care

4.3.1 Create more opportunities for JMOs to work in other/smaller hospitals
    • Rural preferential recruitment of JMOs
    • Increase accreditation for pre-vocational training
    • Appropriate levels of supervision
    • Introduction of JMO rotation from Lismore to Grafton Base Hospital

4.3.2 Facilitate training pathways so that medical professionals do not need to relocate for prolonged periods of time to train in identified areas of priority need
4.3.3 Develop and incentivise medical training and workforce that would fulfil the requirements of smaller rural hospitals
4.3.4 Improve arrangements for medical practitioners in smaller facilities to allow for private and public medical practices to enable greater flexibility and improve patient care
4.3.5 Draw on late-career doctors by providing honorary appointments for them to contribute to learning and teaching

Implementation Action Plan for 2020-2021

The Medical Workforce Plan will be implemented in three distinct phases, with partner agencies developing Implementation Action Plans for 2020–2021, 2022–2023 and 2024–2025. The final year of the Plan, 2026, is earmarked for its review and reformulation.
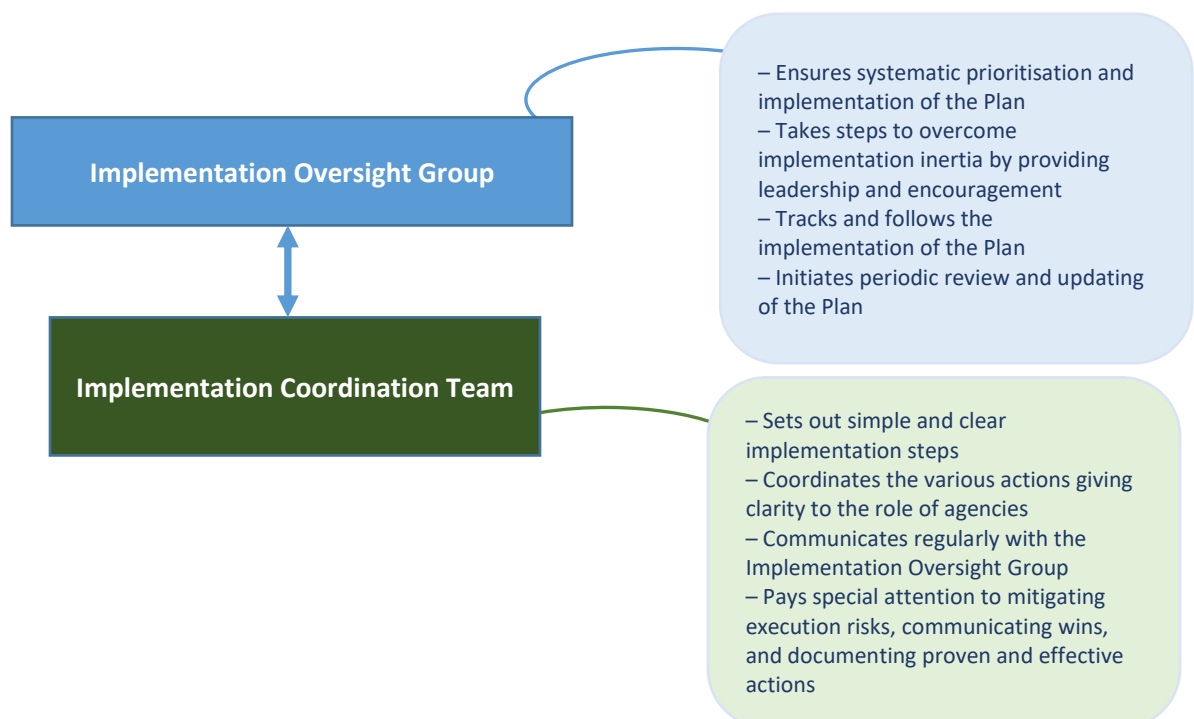
Implementation oversight and coordination

The Plan has been developed through a collaborative process with input from key agencies. Similarly, its implementation requires these agencies to work together. The following structure is recommended for the implementation of the Plan.

Implementation Oversight Group

- The role of this Group, which comprises senior executive from the key agencies, is to provide oversight and prioritisation, and ongoing commitment by the partner agencies to the implementation of the Plan. It will ensure that the agencies are supported to incorporate the Plan's strategies in their own workforce plans. The Group will track and follow the implementation of the strategies, providing periodic implementation reports, and will initiate the review and updating of the Plan.

Implementation Coordination Team

- The Implementation Coordination Team is made up of officers from the agencies involved in the implementation of the Plan. The Team coordinates its implementation and ensures the necessary collaboration and partnership, essential for sustained and effective action, is in place.

Implementation Oversight Group

– Ensures systematic prioritisation and implementation of the Plan
– Takes steps to overcome implementation inertia by providing leadership and encouragement
– Tracks and follows the implementation of the Plan
– Initiates periodic review and updating of the Plan

Implementation Coordination Team

– Sets out simple and clear implementation steps
– Coordinates the various actions giving clarity to the role of agencies
– Communicates regularly with the Implementation Oversight Group
– Pays special attention to mitigating execution risks, communicating wins, and documenting proven and effective actions

VSA
AUSTRALIA

Priorities for Phase 1: 2020–2021

Goal 1: Make the best use of the medical workforce

1.1.1	Skill escalator and capability framework
1.2.1	Telehealth infrastructure review and improvement
1.2.1	
1.3.1	Better use of non-specialist workforce with specialist support
1.3.1	
1.3.2	Integrated and coordinated approach to training and development
1.4.1	Varied training pathways

Goal 2: Improve the distribution of the medical workforce

2.1.1	Improve distribution of specialist workforce
2.2.1	Examine options for possible private hospital at Grafton
2.3.1	Incentives to attract medical workforce to under-serviced areas
2.3.3	Collaboration in delivery of local training, simulation centre and seminars
2.3.3	Opportunities to address training gaps in Clarence and Richmond Valleys

Goal 3: Attract and retain the right medical workforce

3.1.1	Learning and development unit
3.1.2	CPD Training – Focusing on professional gaps as priorities
3.1.4	JMO wellbeing plan
3.1.5	Employee professional feedback and training, and medical workforce performance feedback
3.1.6	Communication strategy and coordination of messaging
3.1.6	
3.1.6	
3.2.1	Analyse and plan for mission-critical workforce
3.3.2	Strengthen clinical leadership
3.3.2	
3.3.2	
3.3.3	Succession planning and retirement
3.3.4	Rural Chief Executives address challenges by collaborating
3.3.5	Establish EDMS
3.4.1	Training and education for quality, safety and research
3.4.1	

Goal 4: Enhance the training infrastructure

4.1.2	Public and private sector collaboration for workforce
4.1.3	Flexibility in multidisciplinary teaching and training
4.1.4	Policies and approaches that support learning and teaching
4.1.5	Built spaces for teaching and learning
4.1.7	Rural and metro networks for professional development
4.1.7	
4.2.2	More pathway options for PGY2+
4.2.3	Focus on medical workforce challenges at Kyogle, Clarence and Richmond LGAs
4.2.3	
4.2.4	Utilise the extended skills of GPs
4.2.5	Generalist Medicine training pathways – Federal funding
4.2.6	Acute and primary care training pathways
4.2.7	Training facilities in Clarence, Richmond and Kyogle LGAs
4.3.1	JMO workforce rotation
4.3.2	Extended training placement in Northern NSW
4.3.3	Smaller rural hospitals' workforce needs
4.3.4	GP-effective practice arrangements, smaller facilities
4.3.5	Transitioning later-career doctors

Legend:
- North Coast Primary Health Network
- North Coast Regional Training Hubs
- NNSW Local Health District

VSA AUSTRALIA

Implementation Action Plan 2020–2021

Goal 1: Make the best use of the medical workforce

Objective		Strategy		Actions	Period	Commencement Date	Key Agency - Partner		Indicator of progress
1.1	**Facilitate processes to assist clinicians to practise at the peak of their skills**	1.1.1	Explore the utilisation of the approach set out in the United Kingdom's NHS 'skills escalator'	Examine NHS Skills Escalator in the context of capability framework	**2020–21**	**Q1**	**NNSWLHD;** NCPHN; Northern NSW Regional Training Hubs		- NHS model examined for application and utility - A model alighted with capability framework developed
1.2	**Build on the Northern NSW medical workforce strengths**	1.2.1	Improve patient access and efficiency through the effective use of technology	Review telehealth infrastructure and identify improvements and make adjustments	**2020–21**	**Q1**	**NNSWLHD**	**NCPHN**	- Process for review of telehealth structure developed - Consultation held and review document produced - Adjustments and improvement undertaken
1.3	**Respond to evolving models of care**	1.3.1	Design and implement models of care that make better use of non-specialist workforce, with specialists supporting and supervising the work	Take steps to make better use of GPs in: Pain Management; Palliative Care; Addiction Medicine; and Outpatient Clinics	**2020–21**	**Q1**	**NNSWLHD**	**NCPHN**	- Consultation held and mapping of current GPs with skills or interests in specialist areas developed - Process established for upskilling, models for delivery of care and support
		1.3.2	Establish integrated planning between training providers and health service provider	Get agreement between LHD, PHN and Northern NSW Regional Training Hubs to establish an integrated and coordinated approach to training and development pathways	**2020–21**	**Q2**	**Northern NSW Regional Training Hubs;** NCPH; NNNSWLHD		- Approach established for a compact between agencies for an integrated and coordinated approach to sustained skills development

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

				and sustained skill maintenance				
1.4	**Expand the scope of practice of existing health professionals**	**1.4.1**	Establish more and varied training pathways, and enablement structures, for GPs to support specialists	See actions 1.3.1 and 1.3.2	**2020–21**	**Q2**	**Northern NSW Regional Training Hubs,** NCPH, NNNSWLHD	

The implementation of Strategies 1.1.2 and 1.1.3 will commence in Phase 2: 2022–2023
The implementation of Strategies 1.2.2 and 1.2.3 will commence in Phase 2: 2022–2023
The implementation of Strategy 1.3.3 will commence in Phase 2: 2022–2023
The implementation of Strategy 1.4.2 will commence in Phase 2: 2022–2023

Goal 2: Improve the distribution of the medical workforce

Objective		Strategy		Actions	Period	Commencement Date	Key Agency - Partner	Indicator of progress
2.1	Take steps to improve the distribution of the specialist medical workforce between the Richmond and Clarence Valleys	2.1.1	Formulate strategies to facilitate a more even distribution of medical workforce between Richmond and Clarence Valleys and improve access to specialist care in under-serviced areas	Initiate dialogue between clinicians and management in Richmond Clarence Network for innovative approaches to improve distribution of specialist workforce and access to services	2020–21	Q1	**NNSWLHD**	- Consultation undertaken - Model for improving distribution formulated - Framework developed with agreed strategies
2.2	Engage key stakeholders in the objective of establishing a private hospital at Grafton	2.2.1	Encourage Public/Private Partnerships for the development of a private hospital in the Clarence Valley to bolster specialist medical workforce recruitment and retention	Commence discussion of options and examination of opportunities for the possibility of a private hospital in Clarence Valley	2020–21	Q1	**NNSWLHD**	- Options for possibility of private facility in Clarence Valley examined - Strategy developed with engagement of not only medical workforce but other partners such as Local Government
2.3	Promote the Northern NSW region and create incentives to attract the medical workforce to under-serviced areas	2.3.1	Build incentives to attract medical workforce to under-serviced areas	Establish a process to map pragmatic and effective incentives to attract medical workforce to under-serviced areas	2020–21	Q3	**NNSWLHD;** NCPHN; Northern NSW Regional Training Hubs	-Incentive option paper developed -Effective incentives identified
		2.3.3	Train more doctors in our own communities	Work together to map current actions by agencies for training and education of medical workforce, and how these could be done conjointly – *e.g. local training, use of simulation centre, local seminars and conferences*	2020–21	Q2	**Northern NSW Regional Training Hubs;** NCPH; NNNSWLHD	- Joint training opportunities between agencies identified - Business model for effective use of infrastructure developed – Lismore Simulation Centre - At least two joint

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

				Map training spaces for Clarence and Richmond, identify opportunities for training, determine gaps and implement action	**2020–21**	**Q2**	**Northern NSW Regional Training Hubs;** NCPH; NNNSWLHD	conferences or seminars organised
								- Mapping of training spaces in Richmond and Clarence Network completed - Gaps identified and strategies for addressing these developed

The implementation of Strategy 2.3.2 will commence in Phase 2: 2022–2023, given its dependence on work being done in this implementation Phase.
The implementation of Strategy 2.3.4 will commence in Phase 2: 2022–2023

Goal 3: Attract and retain the right medical workforce

Objective		Strategy		Actions	Period	Commencement Date	Key Agency - Partner	Indicator of progress
3.1	**Build on the strong reputation of Northern NSW to make it a region of choice to attract and retain the best talent**	**3.1.1**	Invest in staff learning and development to attract and retain the right workforce	Establish Learning and Development Unit	**2020–21**	**Q1**	**NNSWLHD;** NCPHN; Northern NSW Regional Training Hub	Process for establishment of NNSWLHD L&D Unit commenced L&D Unit established
				Prioritise CPD courses in priority skill areas determined in the Plan - target professional groups that can fill priority gaps	**2020–21**	**Q2**	**Northern NSW Regional Training Hubs;** NNSWLHD; NCP	- Process for collaboration between higher education, vocational education and training providers established - Agreement reached on CPD delivery mode and business model
		3.1.4	Support family, and life work balance	Establish and implement JMO Wellbeing Plan; reasonable rostering hours and opportunities for part time/shared college training	**2020–21**	**Q2**	**NNSWLHD**	- JMO Wellbeing Plan completed - JMO Wellbeing Plan implemented
		3.1.5	Establish processes and systems to give employees regular feedback on performance	Map current processes and structures for employee performance feedback and management	**2020–21**	**Q1**	**NNSWLHD**	- Mapping of employee performance feedback arrangements carried out - Consultation on way forward completed
				Develop framework for medical workforce performance feedback and management	**2020–21**	**Q1**	**NNSWLHD**	- Current process for medical workforce performance feedback documented - A framework with possible options developed
		3.1.6	Pay attention to organisation	Develop cross-agency communication strategy and	**2020–21**	**Q2**	**NNSW** NC **NNSW**	- Cross agency consultation as to the

			communications and messaging, both internal and external	coordinate information between all the agencies to streamline messaging			RTH / PHN / LHD	current messaging in promoting the region for attracting workforce completed
3.2	Take systematic and collaborative action to address mission critical workforce challenges	3.2.1	Establish a process to gain ongoing understanding of mission critical medical workforce, particularly those which are hard to fill (Public and Private Hospitals)	Establish interagency process and consultation to further analyse and plan for mission critical workforce	2020–21	Q2	NNNSWLHD; Northern NSW Regional Training Hubs; NCPH	- Interagency process established for analysis of critical medical workforce: recruitment; distribution; training and education
			Focus and prioritise the retention and recruitment of the following disciplines, as highlighted by the data analysis, consultation and survey information	Implement cross-agency strategy to prioritise recruitment to the identified mission critical specialist positions	2020–21	Q2	NNNSWLHD; Northern NSW Regional Training Hubs; NCPH	- Process for joint approach to support recruitment to mission critical positions established
3.3	Establish a regional compact to exercise collective leadership to recruit and retain medical workforce	3.3.2	Develop a Clinical Leadership Program to identify and nurture local clinical leaders[4]	Identify current leaders and continue to strengthen the process for supporting and nurturing them	2020–21	Q2	NNSWLHD / NNSWRTH / NCPHN	- Region-wide clinical leaders mapped and process for support agreed to
		3.3.3	Establish a process for the transition of medical staff into retirement, thereby reducing the likelihood of lengthy vacancies requiring use of alternative workforce	Establish a process to gain better understanding of the retirement intentions of medical workforce – especially those in mission critical roles	2020–21	Q4	NNNSWLHD; Northern NSW Regional Training Hubs; NCPH	- Process for better understanding of the retirement intentions of critical medical workforce established
		3.3.4	Connect with other health districts to establish collaborative processes to leverage the strength of the collective, for the	Seek opportunities to discuss and identify joint action (Rural CEOs Forum and NSW/QLD Cross Border Committees)	2020–21	Q3	NNNSWLHD	- Joint action discussed at NSW Rural CEO forum and cross border meetings

[4] The program could include: identify clinicians with talent and interest in leadership and invest in their development; Networking arrangements and learning sets; Engagement of medical workforce in projects, programs and roles in clinical and administrative domains; Secondment opportunities.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

			recruitment and retention of the medical workforce, especially alternative workforce					NNNSWLHD	
		3.3.5	Strengthen the executive leadership arrangements for medical services in Richmond and Clarence Network (or more broadly within the LHD)	Establish EDMS and restructure current arrangements so they actively support LHD functional areas	2020–21	Q1		NNNSWLHD	- Process for establishment of EDMS established and completed
3.4	Take collective action to strengthen further the culture of quality and safety in Northern NSW	3.4.1	Ensure a universally adopted and supported system for the ongoing quality and safety education and training	Integrate quality, safety, audit, and research into training and education	2020–21	Q3	NNSWLHD	NNSW RTH	- Current inclusion of safety, quality and research into training and education programs mapped - Opportunities identified and joint action initiated

The implementation of Strategies 3.1.2 and 3.1.3 will commence in Phase 2: 2022–2023

The implementation of Strategies 3.3.1 will commence following implementation of Strategy 2.3.1

Goal 4: Enhance the training infrastructure

Objective		Strategy		Actions	Period	Commencement Date	Key Agency - Partner		Indicator of progress
4.1	**Objective 4.1 Promote Northern NSW as a region of training and education excellence with strong infrastructure and building blocks**	4.1.2	Formulate creative approaches to further build on the partnership between public and private sectors to create more capacity to offer services and placement opportunities	Continue to build collaborative approaches between the private and public sectors to attract, recruit and train	**2020–21**	**Q2**	**NNSWLHD; St Vincent's Hospital Lismore;** Northern NSW Regional Training Hubs		- Regular meetings and interactions between public and private sectors held to enhance services and placements – at least four meetings held per annum
		4.1.3	Work together to strengthen the systems and processes which encourage flexibility and multidisciplinary teaching and learning	Build on Hub initiatives that encourage flexibility	**2020–21**	**Q2**	**Northern NSW Regional Training Hubs;** NNSWLHD		- Annual process to assess skill mix for multidisciplinary engagement and learning established and reviewed
		4.1.4	Highlight learning and teaching as a priority; encourage policies and approaches that support learning	Examine opportunities to encourage policies and approaches that support learning and teaching	**2020–21**	**Q3**	**NNSWLHD**	**NCPHN**	- Processes and policies reviewed and aligned for medical teaching with a focus on interdisciplinary and inter-agency training to meet and exceed prevocational and vocational training requirements
		4..1.5	Ensure the design of new facilities, and redesign of existing facilities, enable and support teaching and learning	Ensure new built and refurbished spaces satisfy the training and educational needs of all disciplines	**2020–21**	**Q4**	**NNNSWLHD**		- Leadership within hospital show strong support for continuous learning and teaching - Educational spaces included in all facilities
		4.1.7	Continue to build professional networks and strengthen linkages	Plan initiatives that build rural and metro networks for	**2020–21**	**Q2**	**NNNSWLHD**	**NCPHN**	- Examine opportunities for NNSW and metro

			between rural and metropolitan services, and professionals, to facilitate opportunities for secondments, professional development and collaboration.	professional development				professional networks for professional development - Commence two initiatives
4.2	**Build collaborative processes that support integrated training pathways from pre - post vocational training**	**4.2.2**	Ensure early career doctors have access to training that builds generalist skills and enables a broader general experience - to assist with the decision of specialist or general practice training	Ensure PGY2+ opportunities are not wedded to a specific pathway and given more opportunities and options	**2020–21**	**Q2**	**Northern NSW Regional Training Hubs;** NNSWLHD	- PGY2+ have multiple options and pathways opportunities within Northern NSW
		4.2.3	Attract more talented younger GPs and medical graduates to the region	Focus on challenges in Kyogle, Clarence and Richmond LGAs	**2020–21**	**Q2**	**NCPHN** **NNSWRTH**	- Map challenges and establish a collaborative process to identify opportunities for immediate yields and outcomes
		4.2.4	Support generalist health professional career pathways and the development and utilisation of generalist clinical skills, including through the Rural Generalist Training Program	Identify and make use of the extended/advanced skills of Northern NSW General Practitioners	**2020–21**	**Q3**	**Northern NSW Regional Training Hubs;** NNSWLHD; NCPHN	- A process for inter-agency identification and registering GPs with extended/advanced skills established - Framework established for the engagement and use of the identified clinicians' extended /advanced skills
		4.2.5	Continue to roll-out the generalist medicine training pathway for	Gain a better understanding of Commonwealth	**2020–21**	**Q2**	**Northern NSW Regional Training Hubs;** NNSWLHD; NCPHN	- Opportunities for increased pathways identified

				rural hospitals and establish more rural fellowship specialist positions	approach and funding, and its possibilities for Northern NSW					- Commonwealth funding opportunities accessed to benefit Generalist pathways
		4.2.6	Further strengthen the linkage between the Rural Training Hubs and Medical Training Provides (e.g. GP Synergy and Colleges) and Health Industry	Take steps to identify synergies and integrate acute and primary training pathways	2020–21	Q3	**Northern NSW Regional Training Hubs;** NNSWLHD; GP Synergy; NCPHN	- Opportunities for greater integration identified by close examination of the two pathways - Initiatives formulated an actions undertaken to achieve higher integration of the two pathways
		4.2.7	Take steps to increase GP registrar placement in Clarence LGA, Richmond LGA and Kyogle LGA. Use RTH networks to build relationship with colleges and build relationships	Increase training facilities in Clarence, Richmond and Kyogle LGAs for registrar placement and training	2020–21	Q2	**Northern NSW Regional Training Hubs;** GP Synergy; NCPHN	- Innovative solutions identified and actioned collaboratively with local practitioners to increase training facilities and opportunities - 20% increase in registrar placement within Clarence, Richmond and Kyogle LGAs
4.3	**Introduce innovation and creativity to make the system more agile and adaptive, and foster a future workforce that can respond to need and changing models of care**	4.3.1	Create more opportunities for JMOs to work in other / smaller hospitals	Examine possibility for Junior Medical Workforce rotations to Grafton, Maclean, Casino and Ballina	2020–21	Q2	**Northern NSW Regional Training Hubs**	**NNSWLHD**	- Rotations established to Grafton
		4.3.2	Facilitate training pathways so that medical professionals need not have to relocate for prolong periods of time to train: public health; surgery; critical care; medicine	Examine accreditation outcomes for extended training placements with minimal metropolitan placement requirements	2020–21	Q2	**Northern NSW Regional Training Hubs;** NNSWLHD; NCPHN	- Local placement established for public health training - Rural basic physician training (BPT) hub established at Lismore - Explore paediatric surgery training options

		4.3.3	Develop and incentivise medical training and workforce that would fulfil the requirements of smaller rural hospitals	Ensure attention to needs of smaller rural hospitals in workforce mapping and planning	**2020–21**	**Q2**	**Northern NSW Regional Training Hubs;** NNSWLHD; NCPHN	- Smaller rural hospitals captured in mapping and planning documentation - Clear pathways and training opportunities identified for smaller rural hospitals
		4.3.4	Improve arrangements for medical practitioners in smaller facilities to allow for private and public medical practice to enable greater flexibility and improve patient care	Examine characteristics of effective practice arrangements in smaller hospitals and facilities for General Practitioners	**2020–21**	**Q2**	**NNSWLHD**; NCPHN	- Queensland 'Med-Super' model examined for possible elements that could be implemented within the NSW Public Health framework
		4.3.5	Draw on late career doctors, providing honorary appointments to contribute to learning and teaching	Explore options for transitioning late career doctors from clinical practice to honorary appointments in a staged progression	**2020–21**	**Q2**	**Northern NSW Regional Training Hubs;** NNSWLHD; NCPHN	- Process established within Northern NSW for transition from clinical practice to honorary and academic appointments for late career doctors

The implementation of Strategies 4.1.1 will commence following implementation of Strategy 1.3.2
The implementation of Strategies 4.1.6 will commence in Phase 2: 2022–2023
Strategy 4.2.1, see 1.3.2, 3.2, and 2.2.3

Appendix 1: Process for the Development of the Plan

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Process for the Development of the Plan

The Medical Workforce Plan was developed in three interconnected phases.

Phase		Process / Approach
1	Planning Scope and Framework	Consultation was held to gain agreement on the overall planning framework and approach. During this phase, documentation pertaining to the overall approach for the development of the NNSW Health Workforce Strategy, including Planning Scope & Framework, was completed.

The project initiation undertaken included
- Establishment of the Steering Committee
- Development of the project scope and consultation strategy
- Development of a detailed project plan
- Development of a Medical Workforce Planning Framework.

Phase		Process / Approach
2	Workforce Mapping & Ratio Analysis	During this phase a medical workforce mapping exercise to document the current workforce distribution was completed. A ratio analysis was undertaken to determine the workforce comparison. The comparison was undertaken with the national and state ratios.

Many challenges were faced in accessing state medical workforce data. National workforce data were readily accessed and analysed. Despite many attempts state data were not made available. The decision was taken to complete the analyses using national and local data. The Expert Panel met during this phase and provided input into the methodology. The Expert Panel advised that a Survey of each specialist craft group be undertaken to provide qualitative input into the analysis. This was done in December 2018 and January 2020. A survey instrument was designed for this purpose and 18 responses, one from each department, received.

In March 2020 information was received that state data were being published, this coincided with the availability of additional General Practice data from GP Synergy. The decision was made to recalculate the ratios and include the state and the additional General Practice data. This resulted in a further delay, in addition to the survey, in the completion of the project.

Phase		Process / Approach
3	NNSW Medical Workforce Plan	During this phase, the Northern NSW Medical Workforce Plan was written. Consultation was undertaken to develop the vision, goals and strategies for the seven-year medical workforce Plan for Northern NSW, with a focus on the Richmond and Clarence Network.

Given the delay in completion of Phase 2, some of the phase 2 and 3 work had to be undertaken at the same time. Phase 3 included the development of strategies. During this phase a workshop was held for the Reference Group to develop the strategies to achieve each of the four goals of the Plan. At this phase a number of consultative spaces were organised where invaluable input was received.

Consultation

The aim of the consultation strategy was to ensure stakeholders had opportunity to provide input into the NNSW Medical Workforce Plan.

The objectives included

- To enrich the various aspects of the Plan by seeking diverse input
- To benefit from the collective wisdom and experience of those with expertise in the field
- To engage stakeholders in the planning process and ensure their buy-in and willingness to share data and information, thereby making the implementation path smoother
- To provide a reality-check and ground-truthing to the proposed way forward from those with experience and those working in the field.

Careful thought was given to the modes of consultation to ensure no pressure is placed on stakeholders by unreasonable time frames. Sufficient information will be provided to those consulted prior to the consultation, in the form of information packages or discussion papers.

The following structures were established for oversight of, and input into, the Northern NSW Medical Workforce Plan.

Governance and Oversight	Input and Feedback
NNSW Medical Workforce Plan Steering Committee	NNSW Medical Workforce Plan Reference Group
	Planning Expert Panel
	Other ad-hoc consultation structures
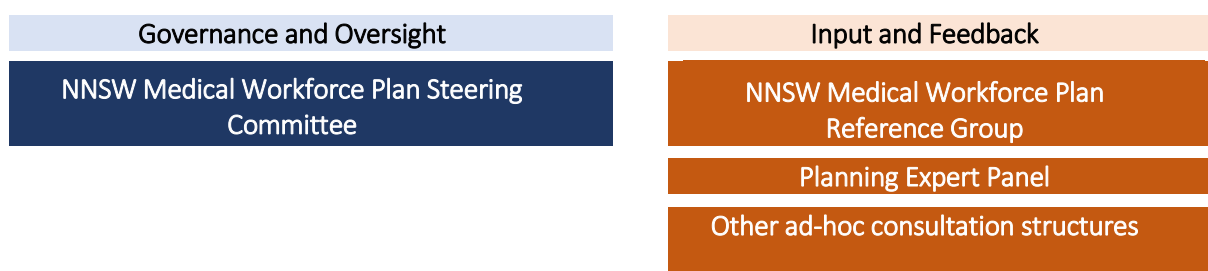
Distinct consultation methods and structures were utilised at each development phase. This is noted below.

Phase	Focus	Guided by
1	Framework for NNSW Medical Workforce Plan	Steering Committee; Medical Services Directorate; Individual Consultations; NNSW LHD Human Resource Directorate
2	Workforce modelling and gap analysis	Steering Committee; Expert Panel; Survey of each Specialist Group; Medical Services Directorate
3	Vision and direction for the NNSW Medical Workforce Plan	Steering Committee; Reference Group; NCPHN Clinical Council; targeted consultations (Grafton); distribution of the draft Plan for feedback.

The membership of the NNSW Medical Workforce Plan Reference Group was determined in consultation with the Steering Committee and University Centre for Rural Health. This Group provided input into the direction and strategies of the Plan.

The Expert Panel and Reference Group played crucial roles in the planning process as noted below.

Expert Panel	Reference Group
The Expert Panel consisted of a small number (less than 10) of content experts that provided special input into the plan, especially as it related to medical workforce data and modelling. *The Expert panel members* - Had a good understanding of Northern NSW region and health care services - Had a sound understanding of medical workforce, as it related to recruitment, retention and education - Had an understanding of workforce modelling and gap analysis. - Were able to assist with data capture, analysis and testing of planning assumptions.	The Reference Group consisted of representatives from the key stakeholder organisations – especially the partner agencies. *The objective of the Reference Group was to* • Provide input into the Plan's strategies and direction • engage in the planning process and share the Plan's vision and directions within the stakeholder organisations - making the implementation path smooth • Facilitate access to data and information • provide reality-check and ground-truthing for the Plan's strategies and actions. *Members had* • Relevant experience and/or expertise in the workforce planning and/or medical workforce field • Ability to promote the planning process and facilitate access to data and other relevant information. The Reference Group met once. This was a three-hour workshop.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Appendix 2: Background

Background

Medical education and training in Australia is comprised of four phases:
1. Basic education
2. Prevocational training (internships)
3. Vocational training (specialist or GP credentialing)
4. Continuing professional development

All four phases of the education programs are accredited and overseen by the Australian Medical Council.[5] Pre-vocational training is led by State Health Departments and postgraduate by Medical Education Councils.

Policies addressing maldistribution of medical workforce – National efforts

The Australian Government is attempting to address the inconsistent distribution of the rural health workforce in a number of ways. While steps have been taken to increase regional and rural training, it has been noted that the potential benefits of rural training have been compromised by the requirement of graduates, or junior doctors, to return to cities for vocational training. Many junior doctors have the desire to work in rural areas having come from rural Australia, or as the result of working in rural communities during a placement or internship.

Medical Deans Australia and New Zealand, and the Group of Eight Deans of Medical Faculties, made a joint submission to the Commonwealth in response to a request for their views on the distribution of medical school places across Australia. This was titled *Assessment of the Distribution of Medical School Places in Australia.* In this submission the Deans noted that it is not undergraduate places in medicine that need to be increased to address maldistribution of workforce across urban and rural settings. They stated that "domestic medical student commencements have increased from 1,871 in 2005 to 3,215 in 2016".[6] Rather, in the 2017 *Assessment of the Distribution of Medical School Places in Australia*, the Deans state *Medical Deans have long advocated that what is needed to achieve a better distribution of doctors in rural Australia is a "flipped" model of regionally based specialist training with rotations back into metropolitan hospitals if needed.*[7]

In 2016, endeavours pertaining to education were consolidated into the Rural Health Multidisciplinary Training (RHMT) program to support high quality rural health training as a way for the Australian Government to encourage the recruitment and retention of rural and remote health professionals. This program is supported by multidisciplinary University Departments of Rural Health; Rural Clinical Schools; and the expansion of Rural Dental School clinical placements.

The latest funding package includes an expansion to multidisciplinary training by almost doubling the funding to UDRHs. This provides funds to establish three new UDRHs, with an Integrated Rural Training Pipeline for Medicine (IRTP) to be based at RHMT program sites. The RHMT supports a network of rural clinical training sites across Australia: University staff live and work in regional, rural and remote areas, in order to deliver rural clinical training experiences to health students, and to encourage them to remain in these communities when they complete their training program. The effectiveness of these entities depends on the quality of the educators and clinicians in practice, who contribute to student and early graduate learning.

---

[5] *A brief history of medical education and training in Australia; Laurence Geffen; Med J Aust 2014; 201 (1 Suppl): S19-S22. || doi:10.5694/mja14.00118 Published online: 2014-07-07*

[6] *Assessment of the Distribution of Medical School Places in Australia; Joint Submission-Medical Deans Australia and New Zealand Group of Eight Deans of Medical Faculties Group; 9 February 2017 p 6*

[7] *Assessment of the Distribution of Medical School Places in Australia; Joint Submission-Medical Deans Australia and New Zealand Group of Eight Deans of Medical Faculties Group; 9 February 2017 p2.*

The IRTPs are designed to consolidate the rural training system by increasing opportunities for graduates who are interested in rural careers to maintain connections to rural communities while they complete post graduate training and deliver a sustainable, Australian-trained future medical workforce for regional, rural and remote communities. The program also establishes Regional Training Hubs (RTHs) which are a funded component of the RHMT program, focussed on medicine, and established under the IRTP initiative. The Regional Training Hubs consolidate opportunities for medical education through provision of equipment, staff and other resources for prevocational and vocationally focussed training in medicine.

As a result of the establishment of these structures, more practitioners will be able to complete the various stages of their medical training, from student to specialist, within rural areas.

The development of University Departments of Rural Health (UDRH) over 20 years ago, and the expansion of medical undergraduate places more recently through the establishment of 18 rural clinical schools, has provided the undergraduate opportunities necessary to staff rural and remote health services with medical graduates.[8]

The University Departments of Rural Health model has proven highly successful. The role and contribution of the UDRH were measured before the 2016 expansion, in research led by Humphries and Lyle. This research indicated that the UDRH are well-integrated entities covering 40% of the rural landmass; generating clinical learning; fostering local research with a focus on health services; generating publications and opportunities for students.[9]

State polices and leadership

At the state level, the underlying problem of poor distribution of medical graduates is acknowledged. In the *NSW Health Professionals Workforce Plan 2012–2022* it is written that

> *The [state] workforce modelling may indicate that there is an overall adequate supply of medical specialists in that specialty in NSW, but does not reflect maldistribution that may arise from specialists working predominantly in one sector (such as private practice) and/or mainly in one location (such as metropolitan Sydney).*[10]

The recently released NSW Health Professional Workforce report identifies priority specialisation needs for rural or small facilities. These include specialities such as General Medicine, Addiction Medicine, General Surgery and Medical Administration. These are specialities which lend themselves to locally based specialist training, supported by occasional placements in high-volume urban settings.[11]

Advantages of locally based specialist training

The Medical Deans Australia and New Zealand, and the Group of Eight Deans of Medical Faculties Group, in their paper *Assessment of the Distribution of Medical School Places in Australia; Joint Submission-Medical Deans, 2017,* identify practice that may be possible to emulate locally. For example, they refer to West Victorian General Surgery Training Program as well as the Northern Clinical Training Network involving James Cook University and four of the regional Queensland Health and Hospital Services.

There are significant advantages in local training, and the benefits are not limited to workforce related issues. Surgery is one area of practice where the benefits are evident. Surgeons trained in

---

[8] *Assessment of the Distribution of Medical School Places in Australia; Joint Submission-Medical Deans Australia and New Zealand Group of Eight Deans of Medical Faculties Group; 9 February 2017 p 6*
[9] *Humphreys, J., Lyle, D., Barlow, V. (2018). University departments of rural health: Is a national network of multidisciplinary academic departments in Australia making a difference? Rural and Remote Health, 18(1), 1-11.*
[10] *NSW Health Professionals Workforce Plan 2012-2022, NSW Ministry of Health, Sydney 2018, p.22*
[11] *NSW Health Professionals Workforce Plan 2012-2022, NSW Ministry of Health, Sydney 2018*

regional locations (with a specific focused high-volume surgical placement in an urban area) are more equipped to work in regional areas upon completion of their training. As surgeons in rural areas are required to perform a wide range of surgeries, specialist urban-based surgical training has limitations for rural practice. Providing opportunity for surgeons to train in regional areas also supports stability, as this training often coincides with the period of life when homes and families are being established.

Rural Generalist Medicine is critical to rural service delivery. A Rural Generalist is a rural medical practitioner qualified to serve in hospital or community-based primary medical practice, as well as hospital-based secondary medical practice, in at least one specialised medical discipline without supervision by a specialist medical practitioner. The specialist areas commonly covered by Rural Generalists include obstetrics, anaesthetics and surgery, but other specialist areas are also served by Rural Generalists. The Queensland Health Rural Generalist Pathway has led to the development of Rural Generalist Medicine nationally.[12] It was developed in response to a trend of increased reliance on international medical graduates, as well as a decline in the agility of rural medical services to attract and retain rural medical officers. The program was developed in 2002 by a consortium comprised of Queensland Health; the Australian College of Rural and Remote Medicine (ACRRM); General Practice Education and Training; Remote Vocational Training Scheme and the Royal Australian College of General Practitioners (RACGP). The first rural generalist trainees completed the program and were awarded fellowships in 2012.

The two colleges associated with rural generalist medicine and authorising competence are the RACGP and ACRRM. The RACGP states that for many rural GPs, Fellowship of the RACGP (FRACGP) is sufficient recognition of their competence to provide unsupervised, high-quality, patient-centred rural general practice care. RACGP advocates that an NRGP would allow alignment of rural GPs' acquirement of an advanced skill set to the specific needs of their communities.[13] If the endpoint of the NRGP is vocational recognition as a GP, there must be adequate, supported and valued General Practice exposure in training. Training must not be limited to that which is hospital-based. It must award training positions and placements equitably and ensure access to training for all General Practice registrars who wish to pursue an advanced skill in preparation for rural and remote practice, regardless of their college of preference. Hence, NRGP would need to ensure placements are available across the primary and secondary sectors, and across the clinic, hospital and outreach settings.[14]

ACRRM endorses a definition of Rural Generalist Medicine that incorporates the skills typically associated with urban general practice clinics but argues that the definition should include advanced skills and a broader scope of practice. ACRRM highlights that Rural Generalist Medicine is the provision of a broad scope of medical care by a doctor in the rural context that encompasses the following:

> *Comprehensive primary care for individuals, families and communities; Hospital in-patient care and/or related secondary medical care in the institutional, home or ambulatory setting; Emergency care; Extended and evolving service in one or more areas of focused cognitive and/or procedural practice as required to sustain needed health services locally among a network of colleagues; A population health approach that is relevant to the community; Working as part of a multi-professional and multi-disciplinary team of colleagues, both local and distant, to provide services within a 'system of care' that is aligned and responsive to community needs.*[15]

In NSW, the *Health Professionals Workforce Plan 2012-2022 – Revised 2015* makes it clear that specialist training in medicine is becoming more broadly located and is no longer solely urban based. General medicine provides an example of how this is being operationalised. In order to be

---

[12] *rural_generalist@health.qld.gov.au*
13 *Rural generalism 2020 – Royal Australian College of General Practitioners, Position statement – 3 July 2017*
14 *ibid*
15 *World Summit on Rural Generalist Medicine, Cairns, 2014. © Australian College of Rural and Remote Medicine 2014, p.2*

considered 'performing' in this area the current Service Compact between Health Education and Training Institute (HETI) and the Ministry of Health states that HETI must have "*established a general medicine training program and network/s that support general medicine trainees in metropolitan and rural areas by October 2014"*.[16] The following principles are used to guide the development of this work:

- High quality training should be delivered at all sites accredited for General Medicine Training in NSW;
- All General Medicine Trainees should have access to high quality clinical and educational opportunities, to assist them to meet the curriculum as specified by the Royal Australasian College of Physicians (RACP);
- All General Medicine Trainees should follow a coordinated training pathway;
- General Medicine should be promoted as a viable/ positive career choice for junior doctors.[17]

<u>NSW state policy</u>

The first strategy of the NSW Rural Health Plan, towards 2012, is "enhance the rural health workforce". This strategy focuses on: "Continue to build the health workforce in rural areas through enhanced recruitment, training, career development and support". The document states that, this Strategy supports the continued implementation of the *Health Professionals Workforce Plan 2012–2022* to help attract and retain a skilled workforce, recognising the importance of the range of staff that enable the delivery of health services in rural areas. The goals and initiatives in this Strategy aim to increase the Aboriginal health workforce in rural areas; implement innovative workforce models to ensure the diverse needs of rural communities are met; and strengthen the provision of training, development and support for the rural health workforce.

The role of all clinical workforce in delivery of health care services is recognised. Attracting, retaining and appropriate geographical distribution of health workforce is a persistent challenge in rural regions. The *NSW Health Professionals Workforce Plan 2012–2022* sets out to address some of these issues.

With regard to Aboriginal workforce the *Good Health – Great Jobs NSW Health Aboriginal Workforce Strategic Framework 2011–2015*, focuses on increasing the number and profile of Aboriginal workforce across the public health sector in clinical, non-clinical, management and leadership roles.

The NSW Rural Health Plan further focuses on initiatives to attract health professionals to rural and remote areas. This plan highlights the role of educational programs; locating educational institutions in rural areas; financial incentives; and career development as the means of attracting and retaining clinical workforce in rural areas.

Expanded roles, such as nurse practitioner and paramedic roles, are occurring in rural NSW settings. Achieving a balance between generalist and specialist workforces in rural areas is also important, as well as supporting peer and consumer workforces.

---

16 *Health Professionals Workforce Plan 2012-2022 – Revised 2015 NSW HEALTH, p.3*
17 *General Medicine Training in NSW - Recommendations Paper Page 3 of 21 Version: 4.0, Tuesday, 29 May 2018 TRIM Ref: DOC14/3482, pp.3-4*

Appendix 3: Northern NSW Medical Education

Northern NSW Medical Education

There are three levels of providers engaged in medical education at undergraduate, graduate and postgraduate levels on the North Coast of NSW.

UNDERGRADUATE MEDICAL EDUCATION	**Mandated & Contracted Universities** • University of Sydney • University of Wollongong • Western Sydney University **Non-contracted Universities** • University of NSW • Griffith University • Bond University
PREVOCATIONAL TRAINING	• Health Education and Training Institute (HETI)
VOCATIONAL TRAINING	• GP Synergy (for General Practice only) • Relevant specialist Colleges such as Australasian *College* of Emergency *Medicine* (ACEM), Australasian *College* of Anaesthetists (ANZCA), and *Australian College* of Rural and Remote *Medicine* (ACRRM).

Northern NSW Regional Training Hubs – Clarence Valley and Lismore

The Northern NSW Regional Training Hub consists of two semi-autonomous hubs established in 2017, one based in Lismore and operated through the University of Sydney, and the other based in Grafton and operated through the University of Wollongong. These hubs are intended to collaborate to support training for junior doctors (pre-vocational and vocational training) across NNSW.

The Regional Training Hubs build on long standing collaborations between these universities, through the UCRH, to provide rural focussed medical education in Northern NSW. This has provided a base of staff, facilities and equipment that are beneficial to the new Regional Training Hubs. In 2017 UCRH provided placements for 53 medical students from Sydney, Wollongong and Western Sydney Universities for a full year of their training, and short term placements for another 271 medical students from a range of universities. During the same period UCRH coordinated and supported short term rural placements for 750 allied health students from a range of universities. While the focus of the UCRH has been on undergraduate education, it also supports graduate and continuing education. This is exemplified through the use of simulation facilities and regular courses at various locations across NNSW. The UCRH has a strong emphasis on inter-disciplinary education and training.

In addition to the infrastructure and existing partnerships with clinicians in the region supported by the UCRH, the Regional Training Hub initiative complements the mission of the collaborating universities to produce medical practitioners with the capacity and desire to contribute to the enhancement of health care for patients in regional, rural and remote communities. This is achieved in part through a focus on recruiting rural origin students into medical programs, and offering medical students extended rural clinical training opportunities. The collaborating universities regard this initiative as a natural extension of their medical programs
The Lismore Medical Regional Training Hub is based at UCRH and was established in 2017, through the University of Sydney. Its focus is the Richmond Valley and it is centred at Lismore Base Hospital. While the focus of the UCRH is undergraduate preparation, it supports graduate and continuing education as well. This is exemplified through the use of simulation facilities at Lismore. Undergraduates as well as qualified practitioners currently undertake training in this facility. It has

also been used for cross disciplinary training. For example, many of the primary health network GPs and their nurses upgraded their emergency training using these facilities.

The Clarence Valley Regional Training Hub (CVRTH) has been established through the University of Wollongong (UOW) to expand and support expansion of training opportunities in a region centred on Grafton. As with all other Regional Training Hubs, the objectives of the CVRTH are to develop regional training capacity in the Clarence Valley, improve the coordination of the stages of medical training, identify students with an interest in practicing rurally, strengthen existing and develop new connections to improve the continuity of training for medical students/trainees, and identify regional medical workforce needs and use this information to prioritise activity. The capacity for additional training is being leveraged off pre-existing infrastructure developed for undergraduate training by UOW and UCRH in partnership with Grafton Base Hospital and the Local Health District. The establishment of the CVRTH has been through a planning phase and is currently in the process of being implemented.

The contract between the University of Wollongong and the Commonwealth related to CVRTH includes six activities: appointment of a suitably qualified team (including a senior clinical academic); establishment of arrangements with relevant education, professional and health service stakeholders; development of new medical training capacity; provision of support, including assistance with career planning, placement and mentoring, to medical students with interest in rural practice; development of training capacity to address regional medical workforce priorities; and reporting on training placements.

Pre-vocational education

Pre-vocational Training provides the opportunity for doctors to develop applied clinical competencies after completion of their basic university medical qualification. The first two postgraduate years after medical graduation (PGY1 and PGY2) provide the foundation for future vocational training. In NSW, this program is under the leadership of the Health Education and Training Institute (HETI) and its Prevocational Accreditation Committee (PAC).[18] The program is conducted in collaboration with the health service which employs the interns. The Institute's main function is coordination and evaluation of education and training, and ensuring programs and courses meet service delivery needs and operational requirements. Its work is accredited by the Medical Board of Australia as the intern training accreditation authority for New South Wales. HETI's Prevocational Training Program oversees the training of all prevocational trainees in their first two postgraduate years (PGY1 and PGY2) Students in their first two postgraduate years are collectively referred to as Junior Medical Officers or JMOs. The aim of the Pre-vocational Training Program is to promote a universally and consistently high standard of general clinical training.

While Lismore Base and Tweed Hospitals have developed recognised programs for pre-vocational training, the Grafton Base Hospital at this stage is not accredited to receive JMOs through the NSW Health HETI program.

Vocational education

Following completion of university medical education and the pre-requisite intern year, provided by the health service, medical graduates may decide to undertake specialist medical practice. In order to do this, they must compete for a place in a medical specialty training program accredited by the

---

[18] *PAC provides accreditation to prevocational training positions (Post Graduate Year 1; PGY1 and PGY2, collectively known as Junior Medical Officers or JMOs). Accreditation is provided at the individual hospital level and each ten-week term offered requires accreditation. JMOs undertake placements across hospitals within a training network (generally centred on a major metropolitan hospital) but may be employed by any hospital within the training network. NNSWLHD is primarily responsible for employment of JMOs and a subsidy is paid by HETI.*

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Australian Medical Council (AMC)[19]. Many of these posts are highly competitive and difficult to obtain.

The time required to complete vocational training programs varies from three to seven years, depending upon which specialty is undertaken. Accreditation of vocational training and ultimate authorisation to practice is the domain of relevant colleges. An example is the Royal Australian College of General Practitioners (RACGP), which is Australia's largest professional General Practice organisation. RACGP represents urban and rural General Practitioners and provides accreditation for them. The training however is provided[20] by the Regional Training Organisation, GP Synergy. See below for more information.

Supervision of junior trainees who are undertaking vocational programs is usually provided by a specialist and/or a senior trainee in association with a specialist. This is the responsibility of the health service and an important part of skill development and training as a doctor. Specialist vocational training has traditionally been undertaken in large teaching hospitals for most specialties. Speciality vocational training in regional or rural hospitals is relatively recent and can only be provided in facilities with capacity to provide supervision. Provision of speciality vocational training is also dependent on an appropriate volume and complexity of clinical presentations.[21]

Pre-vocational training during the intern year is a health service contribution but specialist training is less so, except as an employer who has the responsibility to ensure appropriate clinical supervision. The exception to this rule pertains to training in anaesthetics. Funding for the establishment of vocational positions for training in anaesthetics largely rests with public hospitals.

GP Synergy is the leading provider of general practice education and training across NSW and Canberra. GP Synergy delivers vocational training to doctors seeking to specialise as General Practitioners (GP).[22] The shift to a state-wide coordinator of GP training in 2015 caused consternation as the previous system was perceived to be working effectively and to be of benefit to regional areas through having established strong relationships with practice-based training providers. It has taken some time to try to re-establish relationships with general practice and embed new management processes. GP Synergy is responsible to General Practice Education and Training (GPET) which in turn is responsible to the Commonwealth Department of Health (DoH) in terms of its contract and to the College (RACGP) and the Australian Medical Council for accreditation. This is now transitioning back to the RACGP holding the national level head contract with DoH.

---

[19] The AMC is the independent national standards body for medical education and training and also accredits undergraduate programs. It also advises the Commonwealth and states and territories on medical speciality and accredits specialist medical training programs. Specialist registration is available to medical practitioners who have been assessed by an AMC accredited specialist college as being eligible for fellowship. Fellowship is not a pre-requisite for specialist registration. Medical practitioners with the necessary qualifications in the approved specialties are included on the Specialist Register and their specialist title is protected by law.

[20] Most of the training is provided by the private practice GP supervisor, with additional workshops coordinated by GP synergy who also manage the funding streams in NSW.

[21] Some of the clinical training experience for traditionally hospital based specialty programs can now be delivered through private specialist rooms. This is particularly important in some rural settings where there are limited hospital outpatient clinics for trainees to gain outpatient experience and post-acute follow up experience.

[22] With support from GP Synergy senior GPs deliver vocational training to doctors seeking to specialise as General Practitioners (GP).

Appendix 4: Northern NSW

Northern NSW[23]

Northern NSW covers a region of 20,732 square kilometres, covering the Local Government Areas of the Clarence Valley in the south, to the Tweed in the north. The western and southern borders of NNSW join the Hunter New England Local Health District and Mid North Coast Local Health District.

The focus of this Plan is the Richmond and Clarence Network.

This Network includes Richmond Valley and Clarence Valley.

Richmond Valley includes
- Ballina LGA
- Richmond LGA
- Kyogle LGA
- Lismore LGA

Clarence Valley includes
- Clarence LGA

The Tweed Byron Network comprise of the Byron and Tweed LGAs.

The traditional custodians of the land covered by NNSW are the Bundjalung, Yaegl, Gumbaynggirr and Githabul Nations.

NNSW comprises a total of seven LGAs. In 2016, the estimated population of NNSW was 301,600. The Northern Rivers region is a popular holiday destination. The region in 2016 received over 6.3 million domestic and international visitors, staying overnight and on day trips to the area. [24]

Northern NSW total population was projected to increase by an estimated 16.3% between 2011 and 2031. It is anticipated that Tweed LGA will experience the greatest population growth (about 25%) and Byron LGA projected to increase by 19.3%.
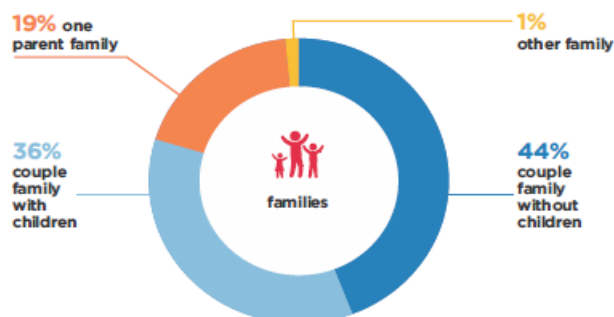
301,600 people

16,056 are Aboriginal and Torres Strait Islander people

6.3 Million domestic and international visitors to the region

54,220 Children

18,050 adults aged over 80

29% of households are single (or lone) person households.

19% one parent family

1% other family

36% couple family with children

44% couple family without children

families

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

NNSW LHD Population Changes by LGA 2011 - 2031

LGA	2011	2016	2021	2026	2031	% Projected Growth 2011 - 2021	% Projected Growth 2011 - 2026	% Projected Growth 2011 - 2031
Ballina	40,747	42,130	43,280	44,260	45,180	6.2	8.6	10.9
Byron	30,712	32,390	33,830	35,240	36,640	10.2	14.7	19.3
Clarence Valley	51,287	52,790	54,420	55,730	56,820	6.1	8.7	10.8
Kyogle	9,537	9,600	9,640	9,670	9,620	1.1	1.4	0.9
Lismore	44,348	46,200	47,900	49,380	50,680	8.0	11.3	14.3
Richmond Valley	22,717	23,560	24,280	24,870	25,340	6.9	9.5	11.5
Tweed	88,437	94,470	100,010	105,410	110,580	13.1	19.2	25.0
Urbenville part of Tenterfield	456	460	460	450	450	0.9	-1.3	-1.3
Total Northern NSW	**288,241**	**301,600**	**313,820**	**325,010**	**335,310**	**8.9**	**12.8**	**16.3**

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

Northern NSW has a high aged profile (>65 years). Between 2011 and 2031, the population of persons aged 65 years and older is projected to increase by approximately 71% - from 55,882 people in 2011 to 95,400 in 2031. Those aged 80 years and older are projected to increase by approximately 76% by 2031.

Growth in population by age categories 2011–2031

Age	2011	2016	2021	2026	2031	% Projected Growth 2011 - 2021	% Projected Growth 2011 - 2026	% Projected Growth 2011 - 2031
0-4 years	16,738	17,200	17,450	17,540	17,440	4.3	4.8	4.2
5-14 years	36,727	37,020	38,380	39,230	39,720	4.5	6.8	8.1
15-24 years	32,482	32,660	31,600	31,640	32,420	-2.7	-2.6	-0.2
25-44 years	62,237	63,750	65,430	67,170	66,600	5.1	7.9	7.0
45-64 years	84,175	86,110	85,710	83,060	83,730	1.8	-1.3	-0.5
65-79 years	39,363	46,810	55,390	63,000	66,350	40.7	60.0	68.6
≥ 80 years	16,519	18,050	19,860	23,370	29,050	20.2	41.5	75.9
Total Northern NSW	**288,241**	**301,600**	**313,820**	**325,010**	**335,310**	**8.9**	**12.8**	**16.3**

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

The graph below highlights the rates of growth by population age category for the next 20 years in Northern NSW.

Rate of growth in NNSW LHD population from 2016 to 2036 by age group
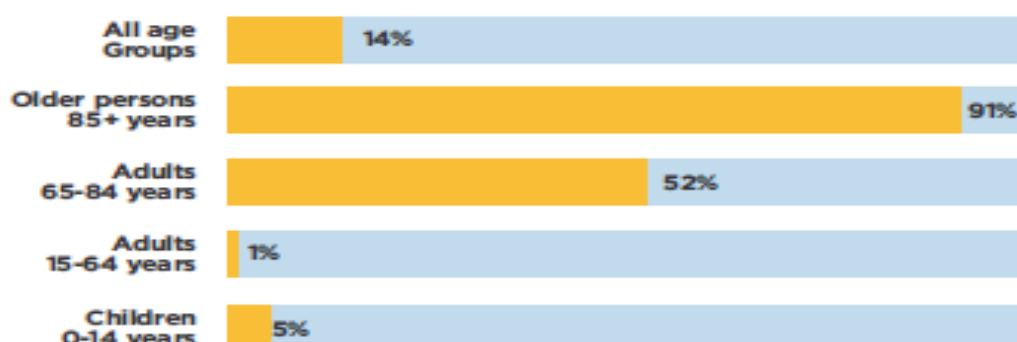
The main causes of death for the residents of Northern NSW are cancer and heart disease – with risk factors such as smoking, risky levels of alcohol consumption and overweight and obesity.

Additionally, Northern NSW population has high rates of psychological distress, and diabetes as well as low rates of immunisation in some areas.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

The main causes of death for NNSW LHD residents are cancer and circulatory disease.

20% of adult's smoke

34% of adult's drink at levels posing a long term risk to health

94% of children are fully immunised at 5 years;
97% for Aboriginal children

13% of women who are pregnant smoke

9.3% of adults diagnosed with diabetes

18% of adults report high or very high levels of psychological distress

21% of older people (65+) reported a fall in the previous year

53.5% of adults are overweight or obese
15% of children are overweight or obese

There are eight public hospitals, one private hospital, four Multi-Purpose Services, one Drug and Alcohol Detoxification Unit, 21 Community Health Centres, a number of private procedural and outpatient clinics and two HealthOne Services in Northern NSW.

NNSW Local Health District is comprised of two Health Service Networks - the Tweed Byron Network and the Richmond Clarence Network. These geographical networks enable health facilities and services to interact, as well as the delivery of safe and appropriate patient care and the provision of the necessary clinical support services. The network structures facilitate improved opportunities for recruitment of clinical workforce, (especially for smaller facilities); better communication and interaction with the community; and better access to health services closer to patients' homes.

The highest rates of admissions in the public hospitals are for medical conditions (42%) followed by surgical procedures (38%). In one year, 114,562 people were hospitalised. This included:

- 27,885 ambulance arrivals
- 41,639 dental clinic appointments
- 207,470 presentations to emergency departments.
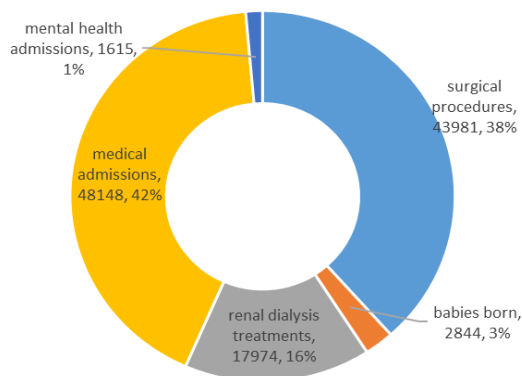
A proportion of hospital admissions could be avoided should there be alternative care delivery options available outside the hospital setting. It is estimated that a proportion of admissions to hospitals per day could be avoided. These are for conditions such heart disease, injury, falls, alcohol consumption and smoking related diseases.

Hospitalisations

Many hospitalisations are potentially preventable. Each day 63 people are hospitalised for potentially preventable reasons including:

5 people are hospitalised for circulatory disease

1 person is hospitalised due to self-harm injury

1 person is hospitalised for diabetes related diseases

6 people are hospitalised due to injury and poisoning

6 People are hospitalised for falls

4 people are hospitalised due to alcohol consumption

4 people are hospitalised due to dementia

2 people are hospitalised due to smoking related diseases

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Appendix 5: Data Analysis

Data Analysis

This section presents information on the medical workforce as of October 2018. The professional categories used is based on the national classification. The table below presents the medical workforce[25] headcount (as per NNSW LHD and St Vincent's Hospital payroll).

Profession	Tweed/Byron Network	Richmond/Clarence Network	NNSW LHD
Addiction Medicine	0	2	2
Anaesthesia	31	38	69
Cardiology	0	5	5
Dermatology	0	2	2
Diagnostic Radiology	12	3	15
Emergency Medicine	25	19	44
Endocrinology	0	1	1
Gastroenterology & Hepatology	2	6	8
General Medicine	8	13	21
General Practice	231	245	476
General Surgery[26]	9	12	21
Geriatric Medicine[27]	2	3	5
Intensive Care	8	5	13
Medical Administration	2	2	4
Medical Oncology	3	4	7
Nephrology	2	7	9
Neurology	2	0	2
Obstetrics & Gynaecology	5	6	11
Ophthalmology	2	12	14
Orthopaedic Surgery	6	11	17
Otolaryngology	4	4	8
Paediatrics & child health	5	11	16
Pain Medicine	0	1	1
Palliative Medicine	2	1	3
Pathology	0	3	3
Physician[28]	6	10	16
Plastic surgery	0	2	2
Psychiatry	10	13	23
Radiation Oncology	0	4	4
Rehabilitation Medicine	1	1	2
Sexual Health Medicine	0	3	3
Surgery[29]	8	13	21
TOTAL	**386**	**462**	**848**

---

[25] Please note ENT and Urology are included in Otolaryngology and Surgery respectively.

[26] General Surgery is the basic core specialty and the broadest of the surgical specialties, engaged in the comprehensive care of surgical patients.

[27] General physicians (or specialists in internal medicine) are experts in the diagnosis and management of complex, chronic and multisystem disorders.

[28] This is a broad category and includes adult medicine subspecialties: clinical genetics, clinical pharmacology, haematology, immunology and allergy, infectious diseases, nuclear medicine, sleep medicine, and rheumatology.

[29] This category includes surgery subspecialties: cardio-thoracic surgery, neurosurgery, oral and maxillofacial surgery, paediatric surgery, urology and vascular surgery.

The table below presents the specialists in four groupings.

Profession	Tweed/Byron Network	Richmond/Clarence Network	NNSW LHD
Critical Care[30]	76	66	142
Medical[31]	33	73	106
Surgery[32]	34	60	94
Other[33]	243	263	506
Total	**386**	**462**	**848**

The focus of this Plan is the Richmond and Clarence Network. This Network includes Richmond Valley and Clarence Valley. Given that both the Valley and Local Government areas share the same name, this might be confusing for the reader who might not be familiar with the region. The Richmond Valley includes: Ballina LGA; Richmond LGA; Kyogle LGA; and Lismore LGA. The Clarence Valley includes the Clarence LGGA.

There were many obstacles in obtaining current and accurate medical workforce data. Despite numerous attempts NSW statewide medical workforce data were not made available in 2018. These data were accessed once published in April 2019. The decision was made to include the calculation of ratios using the NSW state data. This meant that a full calculation had to be carried out using the state data. At the same time additional General Practice data were accessed and then it was decided, given the importance of General Practice to include this data as well – see section on data. These additions delayed completion of the work, which was meant to be finalized by the end of March 2019. The ratios included are comparisons calculated with Commonwealth (Australia wide) workforce data and NSW state data.

Medical workforce headcount data were readily obtained for the Richmond and Clarence regions, however full time equivalent (hours of work) has been difficult to calculate and obtain for both the private and public sectors. This is despite much assistance and endeavour by the Northern NSW Local Health District Medical Services Directorate. It has been challenging to calculate FTE data for the medical workforce as medical workforce tend to work across services under various arrangements such as fee for service, visiting medical officer, sessional or staff specialist.

The workforce ratio comparison analysis was done calculating medical workforce availability for 100,000 population for Australia, NSW (including regional NSW) and the Northern NSW Local Health District region (focusing on Richmond and Clarence Valleys). The NSW data columns includes the total population/clinicians in NSW, and the Regional NSW columns incorporates total regional NSW population/clinicians in NSW minus total population/clinicians in Metropolitan Sydney.

Note that all workforce numbers per 1,000/100,000 population are based on NSW Projections *(https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx)*. The data presented do not

---

[30] Includes: anaesthesia; diagnostic radiology; emergency medicine; intensive care; and pain medicine.
[31] Includes: addiction medicine; cardiology; dermatology; endocrinology; gastroenterology and hepatology; geriatric medicine; medical oncology; nephrology; neurology; paediatric and child health; palliative medicine; physician, radiation oncology; rehabilitation medicine; and sexual health medicine.
[32] Includes: general surgery; obstetrics and gynaecology; ophthalmology; orthopaedic surgery; otolaryngology; plastic surgery and surgery.
[33] Includes: general practice; medical administration; pathology; and psychiatry.

take account of recent or expected changes in population (for example, the expected increase in population related to the new Correctional facility in Grafton).

The assumptions, caveats and limitations of the analysis are noted below.

- The population information used to calculate clinician ratios per 100,000 population, for Australia and Northern NSW Local Health District, are both 2016 Australian Bureau of Statistics (ABS) data. These however, are based on two different 2016 ABS releases. It is assumed that the slight difference in population numbers are not significant when calculating the ratios.

- Calculations regarding FTE and hours of work per week are based on 38 hours = 1FTE.

- Australian clinicians not in clinical practice are included in the analysis due to demographic data (age and gender) being reported on the entire clinician population.

- The General Practitioner workforce data from North Coast Primary Health Network was not adjusted for General Practitioners who work in multiple local General Practices. Therefore, the General Practitioner head count is likely to be marginally overestimated.

- Medical Specialist workforce included are those on the St Vincent's Lismore and the Northern NSW Local Health District payrolls. This is by far the majority of the medical workforce, however there might be specialists who visit the region periodically and work in private rooms, these are not included. Where significant differences were identified the internet directories of Medical Specialists could be used to search for other clinicians and attempt to find their demographic (age and sex) and FTE status. The accuracy and currency of the information contained in Internet directories are uncertain.

Australian, NSW, St Vincent's Lismore and Northern NSW Local Health District data limitations:

- Australian data were not reported consistently and therefore some specialties contain greater detail than others

- NSW and Australian specialist categorisations are not exact matches, this made comparison in some specialist craft groups challenging

- Medical Specialists' gender was not always indicated. In these instances, the Medical Specialists' name was used to designate gender. If this was not possible, Internet search engines where used to view profiles/photos online and subsequently designate gender

- Many Medical Specialists work at St Vincent's Lismore as well as Northern NSW Local Health District. Head count has been adjusted so that a Medical Specialist that works for both organisations in the same specialty is counted once. If they work in different specialties, they are counted in each specialty

- There were a number of data cleaning issues including:

- Abbreviated names used (for example, William in one, Bill in another)

- Double spaces between names

- Age rather than Date of Birth has meant that over time some ages were no longer correct

- Incorrect spelling of names (for example, Gratian in one, Gration in another).[34]

---

[34] Great care has been taken to adjust for all errors

A 20% marker is used to calculate whether a medical speciality is higher or lower than the National average. This is represented by the colour red for 20% below, and the colour blue for 20% above. Where the ratio is within a 20% range this is considered in line with national averages and is represented by the colour green.

The calculation also includes clinicians forecast for the next seven years (the period of this Plan). This 2021 and 2026 projections are calculated utilising the national ratios (clinician/per 1000 population) and applying these to the available respective year population projections for Northern NSW and Richmond and Clarence Valleys. This is a straight-line computation and should only be used as an indicative guide.

Survey of Departments

At the request of the Expert Panel a survey of the departments within NNSWLHD was undertaken. The three-page survey instrument, asked the respondents whether the data provided for the medical specialists in the fact-sheets was in line with their estimate – e.g. the hours of work for the medical workforce, demand and waiting time for the service, retirement intentions and the need for additional medical workforce. The responses were 89% affirmative.

Response was received from 18 medical specialists from 16 craft groups. The responses, in their entirety, are included in each discipline's fact sheet. The medical staff who responded, in almost all cases, only responded for them-selves hence much of the information could not be utilised to gain a greater appreciation of the collective (e.g. retirement intentions etc). These responses however were most helpful in that in nearly 90% of cases they validated the information in the fact sheets.

Observations

The composition of the Australian workforce in terms of age, gender, availability and distribution is changing. This has considerable implications for the recruitment and retention of medical workforce in Northern NSW. The medical workforce profile of Northern NSW has changed significantly over the past two decades. The medical workforce in Northern NSW is large, diverse and complex. The region has a large cadre of highly skilled, capable and committed specialists. The specialist workforce spans all specialist disciplines. NNSW Local Health District medical workforce (not full time equivalent) as of July 2018 is reported to comprise of:

- Visiting Medical Officers (VMOs) - 330
- Staff Specialists - 72
- Junior Medical Officers (JMOs) - 204
- Career Medical Officers (CMOs) - 52
- Agency doctors - 833
- VMO locums – 277.

The challenge for the next decade is to shape the medical workforce profile based on sound and purposeful planning. This planning should consider the expectations of the modern workforce which looks for greater flexibility and work life balance.

The new generation of medical workforce expects to operate differently. This generation is not only proficient in working in an online environment but has shown to be adaptive. The other important consideration is the new technologies and products that create new workforce access possibilities. These will potentially create a different work culture and environment.

During the consultations, the following characteristics and trends in medical workforce in Richmond and Clarence Network were highlighted:
- There are ongoing and persistent challenges in attracting and retaining medical staff. This is more pronounced in certain hospitals and regions than others.
- In recent times greater reliance on locums has been experienced in some facilities in response to medical workforce shortage.
- The distribution of medical workforce within the region impacts on service access and delivery.
- The medical workforce model in some facilities, being predominately a VMO specialist senior medical model, limits the ability to change care delivery.
- The region is experiencing a growth in the JMO Medical Workforce.[35]
- In certain disciplines there is an aging of senior medical officers, with immediate future implications.
- There are challenges in attracting and retaining facility / Network based medical administrators. Reliance on locum administrators often results in a lack of continuity in medical workforce and medical service leadership and management.
- There are increasing costs in medico-legal claims relating to clinical service provision. There is a need for greater emphasis on ensuring clinical risk management learnings are disseminated and education/training programs are enhanced.

---

[35] This increase is mainly due to Commonwealth and MOH funded vocational training positions (MOH/HETI funded NSW Rural Generalists and GP Procedural Posts and MOH funded PGY1-PGY2 positions)

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

The Clarence and Richmond Network ratio comparison was undertaken to determine how the region compares to national averages. It also serves as a guide to determine priorities and gaps. Despite attempts to obtain hours of work for the medical workforce by speciality groups, this proved impossible (with the exception of General Practice). Hence the analysis is carried out for specialist medical workforce head count (see methodology). This has obvious limitations. It is possible that Northern NSW medical workforce on average work less hours per week than the national average. Should this be the case, the higher Clarence and Richmond Network averages will to an extent be reduced if the calculations are done for FTE or hours of work, and workforce shortages will be more pronounced.

Overall, in the short term, the Richmond and Clarence Valleys (combined), in comparison to other rural areas, are reasonably placed for most, though not all medical workforce disciplines. However, the challenge is with the distribution of the medical workforce. In forecasting the size of the future medical specialist workforce, the

> The medical workforce numbers and allocation in Richmond and Clarence Network are large and complex. The challenge, compared to regional NSW is not the number of clinicians, but rather the distribution thereof.

challenge of the distribution of the workforce will remain unless determined and systematic steps are taken to address this.

Where vacancies continue for long periods of time for positions with significant impact, the situation is managed with alternative medical workforce. In Northern NSW there is at present a reliance on locum medical workforce especially in some disciplines and in some regions. This arrangement is not sustainable in the long term.

Generally, the average age of the Richmond and Clarence Valley medical workforce is higher than the national average. This makes efforts to recruit and retain a sustainable workforce, with strong succession planning, of singular importance.

The data assessment and consultations have identified a number of Medical Workforce vulnerabilities. These include the following:

> The average age of Richmond and Clarence Valley medical workforce, in most disciplines, is higher than the national average. This makes efforts to recruit and retain younger workforce of singular importance.

- There are potential skill shortages in some specialties.
- A percentage of medical workforce is nearing traditional retirement age. This could cause challenges for mission critical positions to which it is difficult to recruit.
- Distribution of medical workforce leaves some parts of the region with limited access to specialist care.
- Much of the new workforce is still in the formative stages of its development.
- Use of locum workforce has implications for costs, impact on workplace culture, and quality and safety of care.
- There is limited medical workforce for small and medium size hospitals.
- Work pressures and demands result at times in burnout and unsafe practices.
- Continued reliance on acute hospital services puts additional pressure on specialists and hospital services.
- Education and development are required to respond to changing models of care.
- A strategic approach to succession planning is crucial, especially in regard to

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

mission critical positions and positions to which it is difficult to recruit.

- There is a need for engagement of medical workforce in strategic, operational and leadership roles and in decision making.

Northern NSW has pockets of significant social and economic disadvantage. Additionally, there are those whose lifestyle choices increase their health risks and sickness. While the population growth by itself will have a small impact on the workforce needs, it is the aging population that will have the greater impact on service and workforce. The combination of the aging population, disadvantage and poor lifestyle choices will result in higher proportions of chronic and long-term conditions, worse health outcomes, and greater demand for health care services. Projected increases in the aging population will have an impact on demand for medical workforce. Additionally, dementia prevalence will continue to put pressure on health services. It is expected that the growth in dementia prevalence in the next 10 years in Northern NSW will be over 30%. This is particularly important as dementia is linked to extended periods of hospital stay. Given these factors it is expected that the need for medical workforce will continue to increase.

Comparison of medical workforce per 1000 population for the entire Northern NSW highlights Cardiology[36]; Psychiatry; Rehabilitation Medicine; Neurology; Pathology and Geriatric Medicine as the areas of greatest need.

> The comparison ratios for the entire Northern NSW highlights Cardiology; Psychiatry; Rehabilitation Medicine; Neurology; Pathology; and Geriatric Medicine as the areas of greatest need.

The Richmond Clarence Network medical specialist analysis highlights Diagnostic Radiology;[37] Psychiatry; Rehabilitation Medicine; Palliative Medicine; Obstetrics and Gynaecology; Endocrinology; Pathology; Neurology; Geriatric Medicine; and Cardiology as areas of greatest need.

For Cardiology and Geriatric Medicine, the comparative ratios are within the 20% threshold range relative to regional NSW. This is more a reflection of insufficient workforce in regional NSW, rather than sufficient workforce in Northern NSW.

Profession	Richmond/Clarence	
	2021	2026
Cardiology	-41.0%	-42.5%
Endocrinology	-74.8%	-75.4%
Geriatric Medicine	-31.4%	-33.0%
Neurology	-100.0%	-100.0%
Obstetrics & Gynaecology	-50.8%	-52.0%
Pain Medicine	-45.5%	-46.8%
Palliative Medicine	-46.8%	-48.1%
Pathology	-54.1%	-55.2%
Physician	-45.6%	-46.9%
Psychiatry	-42.6%	-43.9%
Rehabilitation	-68.9%	-69.7%

The table below presents specialist craft groups where the Clarence and Richmond Valley ratios are below Australia, NSW and Regional NSW.

---

[36] It is noted that part of the reason for the significant shortfall in Cardiology is due to the Tweed Byron Network model of care.
[37] This is due to the model of care.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

Profession	Richmond / Clarence		
	Australia	NSW	Regional NSW
Endocrinology	-73.4% (-2)	-77.6% (-2)	-54.1% (-1)
Obstetrics & Gynaecology	-48.0% (-4)	-41.0% (-3)	-20.0% (-1)
Pain Medicine	-42.4% (-1)	-33.4% (-1)	-22.0% (-1)
Palliative Medicine	-43.8% (-1)	-47.1% (-1)	-29.1% (-1)
Rehabilitation Medicine	-67.2% (-2)	-77.4% (-2)	-67.5% (-2)

Forecasting medical workforce numbers into two points in the future, highlights the following discipline shortages. These are the medical specialist areas requiring attention according to the consultations.

Profession	Richmond and Clarence		
	2021 Forecast	2026 Forecast	2018 Actual headcount
Cardiology	8.5	9.1	5
Endocrinology	4.0	4.3	1
Geriatric Medicine	4.4	4.7	3
Neurology	3.6	3.9	0
Obstetrics & Gynaecology	12.2	13.1	6
Palliative Medicine	1.9	2.0	1
Pathology	6.5	7.1	3
Physician	16.6	17.9	12
Psychiatry	22.6	24.4	13
Rehabilitation Medicine	3.2	3.5	1

The Richmond Valley data indicates that the region is reasonably positioned with regard to specialist medical workforce. The table below presents specialist disciplines where comparative ratios denote a shortfall in specialist clinicians in Richmond Valley compared to Australia, NSW and regional NSW.

Profession	Richmond		
	Australia	NSW	Regional NSW
Diagnostic Radiology	-65.4% (-5)	-67.7% (-6)	-55.0% (-4)
Endocrinology	-61.9% (-2)	-67.9% (-2)	-34.3% (-1)
Neurology	-100.0% (-3)	No data	No data
Obstetrics & Gynaecology	-62.8% (-5)	-57.8% (-4)	-42.7% (-2)
Palliative Medicine	-19.5% (-1)	-24.2% (-1)	1.5% (+1)
Pathology	-30.6% (-2)	No data	No data
Psychiatry	-19.8% (-3)	-25.1% (-4)	20.7% (+2)
Rehabilitation Medicine	-53.0% (-1)	-67.6% (-2)	-53.5% (-1)

With regard to Palliative Medicine, as noted previously, the comparison to regional NSW is more a reflection of insufficient workforce in regional NSW, rather than sufficient workforce in Northern NSW. The Richmond Valley data could be interpreted as incomplete given that Richmond Valley clinicians reach out to Clarence Valley in providing specialist care, and respond to an inflow of

patients from Clarence Valley to Lismore Base Hospital. Thus, it is argued that a more accurate ratio is the combined Richmond and Clarence Valley table on the previous page.

The comparative ratios and the forecast data highlight that Clarence Valley is an area of significant need for medical workforce. Except for four medical specialties, the Clarence Valley ratios are below the national average for all disciplines. Addressing the workforce recruitment and retention issues in Clarence Valley is a medium to long term challenge. Meanwhile other strategies such as clinical streaming (see goal 2) are recommended to ameliorate some of the challenges faced by Clarence Valley.

Following consultation and discussion with the reference group, the following areas were highlighted for focus and prioritisation, as supported by data, as critical to health care delivery. This does not negate the importance of other specialist disciplines. The ***medical specialist areas requiring a planned approach*** to ensure the availability of practitioners in the future are the same areas that currently experience a shortfall. These are:

- Psychiatry
- Rehabilitation Medicine
- Palliation Medicine
- Geriatric Medicine
- Neurology[38].

Additionally, the following disciplines were highlighted as critical:

- General Medicine
- Otolaryngology (ENT)
- Small Hospital Medical Workforce
- General Practitioners with subspecialized interest.

During the planning consultations **General Practice** was highlighted as an area requiring much focus and development. General Practice was viewed as critical to a well-functioning health system. In 2016, there were 23,283 General Practitioners employed in Australia[39], and 75% of General Practitioners were located in a major city. Males constituted 59% of General Practitioners. The average age of male General Practitioners was 56 years and they worked an average of 41 hours each week. Female General Practitioners were on average five years younger than male General Practitioners, and worked nine hours less per week. The total average hours for the General Practitioner workforce was 37 hours per week.

In 2015, there were 185 General Practitioners in the Byron LGA and Richmond Clarence Network. The total average hours for the General Practitioner workforce was 34 hours per week. There was an average of 93 clinicians per 100,000 population across Australia. There were 109 General Practitioners per 100,000 population across Richmond and Clarence Network.

The aging population, disadvantage, and more people with long term conditions on the North Coast is expected to increase the demand for General Practitioners. This is especially the case in certain pockets of the region. The Clarence Valley is expected to experience a doubling of the population aged 65 years and over, in ten years. In terms of the Aboriginal population, the largest population is in the Clarence Valley followed by Lismore and Richmond Valley. In terms of social and economic

---

[38] Unfortunately given lack of a well-established local service, not much information is available on Neurology.
[39] 91% worked in the private sector.

disadvantage Richmond LGA (899.5) and Clarence LGA (919.4) and Kyogle LGA (907.1) are the most disadvantaged in Northern NSW. These regions have the highest rates of early school leavers, vulnerable children, jobless families and disability. In terms of risk factors all the Local Government Areas (LGA) in Northern NSW have higher rates of smoking than the state average (15.8%). The LGAs with the highest rates of smoking are Richmond Valley (26%), Kyogle (23%), and the Clarence Valley (21%). These three LGAs also have the highest rates of risky alcohol drinking, chronic disease risk factors and obese children, all of which are significantly higher than the state average. These risk factors for ill health, when combined with socio-economic factors, highlight and contribute to the need for primary and secondary health care, and clinicians, especially General Practitioners. These three regions also have the highest rates of cancer screening and cancer incidence. Furthermore, of all the regions in Northern NSW, Richmond and Clarence Valleys have the highest rates of adult diabetes mellitus followed by Kyogle. The Richmond Valley and Clarence LGAs experience above state average rates of respiratory ailments and mental health and psychological distress.

On the North Coast of NSW, the largest number of GPs are in Ballina and Byron LGAs (see table below). In terms of the location of General Practitioners a key measure is the number of GPs per resident population. The state average is 1 GP / 1126 population (headcount) or 1 GP /1236 population (FTE – Full Time Equivalent)[40].

The table below presents the number of residents per GPs (headcount and full time equivalent) for Northern NSW LGAs.

LGA	GP Headcount	Residents per GP	Residents per GP FTE
Ballina	66	634	881
Byron[41]	66	496	692
Clarence Valley LGA	57	895	948
Kyogle	6	1,590	1,060
Lismore	39	1,147	1,234
Richmond Valley LGA	17	1,364	1,411

In some LGAs with high tourist populations, particularly coastal towns, while the ratio of GP FTE / 1000 population is high, these GPs also provide services to a large tourist population. The tourists are not included in the calculation of the resident population.

The observable trend in all LGAs is that the GP headcount is higher than the GP FTE. This demonstrates that most GPs select to work less than 40 hours per week. The exception is Kyogle where the six GPs account for nine FTEs. The implications seem to be that each practitioner in Kyogle works about 60 hours a week.

In terms of age, nearly 25% of Clarence Valley LGA General Practitioners are 65 years or over. Clarence Valley LGA is followed by Richmond Valley LGA (18%), Lismore (15%), and Byron (15%).

The table below presents the age profile of General Practitioners and their retirement intentions.

LGA	GPs 65+ headcount	Years Intending to work: 0–2 years	Years Intending to work: 0–10 years
Ballina	6	12.1%	48.5%

---

[40] 1 FTE constitutes 40 hours
[41] Please note Byron LGA is included as a reference point. Byron LGA is part of the Tweed Network of services.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Byron	*10*	*10.6%*	*47.0%*
Clarence Valley	*14*	*14.0%*	*52.6%*
Kyogle	*0*	*0.0%*	*50.0%*
Lismore	*6*	*7.7%*	*46.2%*
Richmond Valley	*3*	*0.0%*	*58.8%*

There is a higher proportion of GPs in Northern NSW intending to retire in the near future than the state average. Richmond Valley has the highest proportion of GPs with the intention to retire in the next ten years. Clarence Valley is the LGA with the highest ratio of GPs intending to retire in the next two years. Clarence Valley also has the second highest number of GPs intending to retire within the next ten years. Kyogle General Practitioners are all under 55 years old. Half of these intend to retire within ten years. No GP in Kyogle has expressed an intention to retire in the next two years.

Between January 2018 and December 2018, there were 454 GP registrar placements (headcount) on the North Coast (Tweed Heads to Port Macquarie). Of these, a majority were placed in General Practice (73% or 329) followed by Hospitals (20% or 92) and Aboriginal Medical Services (7% or 33).

In Northern NSW, the LGAs with the greatest need for GPs (Clarence and Richmond Valleys and Kyogle) have fewer accredited practices providing training. The placement of registrars has an impact on possible recruitment and retention. While placement is determined by need, in 2018 the following grouping allocation was made on the North Coast: LGAs with a high need for GP registrars (Group A) 171; LGAs with a moderate need for GP registrars (Group B) 254. While the intention is to have a higher proportion of registrars placed in high need areas (Group A), this is not always possible because of the unavailability of training facilities. In some cases, even where there are accredited facilities, active training cannot be provided, for various reasons. As capacity for training is developed in areas of greatest need - by supporting current practices to become active training sites, or supporting those that are accredited practices to take on more registrars - the likelihood increases of addressing the current GP shortage and distribution challenges.

The three LGAs of Richmond, Clarence and Kyogle (followed by Lismore) have the highest rates of risk and disadvantage, and are in most need of additional General Practitioners. Additionally, d**uring the consultations, (especially with the Reference Group), t**he need for generalist training that responds to the needs of smaller rural hospitals, as well as the need for access to training that builds generalist skills and broader general experience, was highlighted and emphasised.

In 2016, there were 3,327 *Psychiatrists* employed in Australia, half of whom worked in the private sector, and 88% of whom were located in a major city. In 2015, in NSW there were 1,008 Psychiatrists, just over a quarter of whom worked in both public and private sectors. In Australia 61% of Psychiatrists were male, with an average age of 54.5 years and an average working week of 41 hours. Female psychiatrists were on average three years younger and worked six fewer hours per week. In NSW, the psychiatrist demographic profile is similar to the National profile.

In 2018, there were 13[42] Psychiatrists working in the Richmond and Clarence Network and four of these only worked eight hours per week (2018, Workforce Survey Response). Males constituted about 77% of Psychiatrists in Richmond and Clarence Valleys with an average age of 55 years. The average hours for the Psychiatry workforce in Richmond and Clarence Valley was 24 hours per week (2018, Workforce Survey Response).

---

[42] The survey response indicated that the were 10 Psychiatrists currently working in the Richmond and Clarence Network and four of these only work eight hours per week. There are currently some Psychiatry position vacancies. Some of the psychiatrists also specialise in children and adolescents and do not provide care to adult patients.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

New South Wales has the highest proportion of Psychiatrists (about one third of all psychiatrists in Australia). However, the ratio of Psychiatrists per 100.000 population is less than the national average. Of the Psychiatrists in NSW, 786 (78%) work in Metropolitan Sydney, and 55% of these intend to retire in the next five years. There were 222 (22%) Psychiatrists working in Non-Metropolitan Sydney of whom 61% intend to retire in the next five years.

Workforce data indicates that only one Psychiatrist practices in the Clarence Network. An additional 10 Psychiatrists practice in the Tweed Byron Network.

There are 12.6 Psychiatrists per 100,000 population across Australia; 13.5 Psychiatrists per 100,000 population in NSW; and 7.6 Psychiatrists per 100,000 population in Richmond Clarence Network.

Profession	Richmond / Clarence		
	Australia	NSW	Regional NSW
Psychiatry	-39.3% (-5)	-43.3% (-6)	-8.7% (-1)

There were 180 (99 male and 81 female) new Psychiatry fellows in 2015 in Australia. This was an increase of 39 from 2013. There were 1,522 Psychiatry vocational trainees in 2016 in Australia. This constituted a 21.6% increase from 2013 (1,251). Female trainees increased by 3% from 684 to 703 and males by 44% from 567 to 819 between 2013 to 2016. There are two prevocational trainees in Richmond Valley. There were 11 in Vocational Training with a GP in extended skills Vocational Training.

Workforce Survey Response noted that currently there were four Psychiatry position vacancies in Richmond and Clarence Valleys. Psychiatry services (clinical and on call) rely on the locum workforce. There is a critical need for additional Psychiatry workforce due to: High mental health needs in the Clarence Network; locums only partially meeting the need; telemedicine limitations including inadequate infrastructure, resourcing and patient dissatisfaction with telemedicine; and an expected surge in demand in the Clarence Network following the opening of the new Grafton Correctional Facility. The Psychiatrists working in Richmond and Clarence Networks are on average working less than the Australian average (24 hours per week).

The forecast data noted below highlights (as a guide) the need for additional Psychiatrists by 2021 and 2026.

Profession	Richmond/Clarence		
	2021 Forecast	2026 Forecast	2018 Actual headcount
Psychiatry	22.6	24.4	12

In 2016 there were 451 *Rehabilitation Medicine Physicians* employed in Australia, 86% of clinicians were located in a major city. About 62% of the specialists worked in the public sector. Rehabilitation Medicine Physicians worked an average 35 hours per week. Physicians aged 40-49 years comprised the highest proportion (32%).

In NSW in 2015 there were 194 Rehabilitation Medicine Physicians employed, of which 77% worked in the public sector. New South Wales has the highest proportion of Rehabilitation Medicine Physicians, with 45% of Australia's clinicians. A total of 146 Rehabilitation Medicine Physicians work in Metropolitan Sydney (75%). 75% of these intend to retire in the next five years. Only 48 Rehabilitation Medicine Physicians work in Non-Metropolitan Sydney (25%). 54% of these intend to retire in the next five years

In 2016 there was 1.8 Rehabilitation Medicine Physicians per 100,000 population in Australia; 2.5 Rehabilitation Medicine Physicians per 100,000 population in NSW and 0.6 Rehabilitation Medicine Physicians per 100,000 population across Richmond Clarence Network.

Profession	Richmond / Clarence		
	Australia	NSW	Regional NSW
Rehabilitation Medicine	-67.2% (-2)	-77.4% (-2)	-67.5% (-2)

In 2018, there was one Rehabilitation Medicine Physician practising in the Richmond Clarence Network. The specialist worked both in the public and private sectors (Northern NSW Local Health District and St Vincent's Lismore). The Rehabilitation Medicine Physician is female, aged 52 years and works 38 hours per week. An additional Rehabilitation Medicine Physician practices in the Tweed Byron Network.

The forecast data noted below highlights (as a guide) the need for additional Rehabilitation Medicine Physicians by 2021 and 2026.

Profession	Richmond/Clarence		
	2021 Forecast	2026 Forecast	2018 Actual headcount
Rehabilitation Medicine	3.2	3.5	1

In 2016, there were 280 *Palliative Medicine Physicians* employed in Australia, of whom 85% were located in a major city. About 60% of Palliative care specialists were female with an average age of 55 years and an average working week of 33 hours. New South Wales had the highest proportion of Palliative Medicine Physicians (34%), of which 83 (25%) worked in the public and private sectors, and 5% only in the public sector. Females constituted 65% of Palliative Medicine Physicians in NSW. They have an average age of 50 years and work on average 36 hours per week. There are 61 Palliative Medicine Physicians working in Metropolitan Sydney (73%). Of these, 67% intend to retire in the next five years. Only 22 (27%) Palliative Medicine Physicians work in Non-Metropolitan Sydney. Of these, 83% intend to retire in the next five years.

In 2018, there was one Palliative Medicine Physician practicing in the Richmond Network. An additional Palliative Medicine Physician practices in the Tweed Byron Network. There is considerable additional after hours and weekend contact with General Practitioners and Hospitals. The Palliative Medicine Physician is male, aged 56 years, and works 23 hours per week. This is split across the Richmond and Clarence Networks.

The survey report highlighted that the average waiting time for urgent and non-urgent public sector outpatient clinics referrals is one week. There is a need for additional Palliative Medicine Physician workforce. Comments about insufficient Palliative Medicine Physician workforce are supported by the Regional Comparison data that suggests the Richmond Network is under-resourced, with 24.3% fewer Physicians compared to the Australian average. There is 0.6 Palliative Medicine Physicians per 100,000 population across Richmond Clarence Network.

Profession	Richmond / Clarence		
	Australia	NSW	Regional NSW
Palliative Medicine	-43.8% (-1)	-47.1% (-1)	-29.1% (-1)

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Currently there are insufficient Physicians to provide 24/7 basic services or specialist direct care. The regular locum workforce is relied upon to cover leave. The survey response indicated that Clarence patients could be cared for at Grafton and Maclean Hospitals if medical and nursing resources were to be made available. It further indicated that the current services at St Vincent's Hospital, Lismore for public patients have insufficient specialist supervision, and that a greater critical mass of doctors or specialist nurses is required for reliable specialist inpatient or community service.

The demand for Palliative service will continue due to the aging population.

It was noted at the consultation workshops that the need for medical specialists could be reduced by better support for GPs and the increased use of specialist nurses. At the Reference Group consultation, examples of General Practitioners who had palliative care training were provided, to demonstrate the way in which the system is failing to utilise highly skilled and capable GPs in various field to support and cover for lack of specialist medical workforce.

The forecast data noted below highlights (as a guide) the need for additional palliative care physician by 2021 and 2026.

Profession	Richmond/Clarence		
	2021 Forecast	2026 Forecast	2018 Actual headcount
Palliative Medicine	1.9	2.0	1

In 2016, there were 619 *Geriatricians* employed in Australia, 88% of these were located in a major city. Males constituted 57% of Geriatricians. They had an average age of 50 years and worked on average 38 hours per week. Female Geriatricians were five years younger and worked six hours less per week, on average.

In 2015, there were 193 Geriatricians employed in NSW. The demographics of the NSW Geriatric Physicians are similar to that of Australia wide, with the exception that they worked more hours per week (40 hours). By far the majority of the Geriatricians (143) work in Metropolitan Sydney (74%), with 60% of these intending to retire in the next five years. Of the 50 Geriatricians who work in Non-Metropolitan Sydney, 44% expressed the intention to retire in the next five years.

In 2018, there were three Geriatricians practising in the Richmond Clarence Network. One Geriatrician works at Northern NSW Local Health District (NNSW LHD). Two Geriatricians work at St Vincent's Lismore. Males constitute 33% of Geriatricians. The average age is 67 years. Females constitute 67% of Geriatricians and on average were 16 years younger than male Geriatricians. All three Geriatricians practice in the Richmond Network. An additional two Geriatricians practice in the Tweed Byron Network.

There are 2.4 Geriatricians per 100,000 population across Australia; 2.6 Geriatricians per 100,000 population across NSW; and 1.8 Geriatricians per 100,000 population across Richmond Clarence Network.

Profession	Richmond / Clarence		
	Australia	NSW	Regional NSW
Geriatric Medicine	-27.5% (-1)	-31.7% (-1)	-6.4%(-1)

Increase in demand is expected with the aging population, disadvantage, and related lifestyle risk factors. The forecast data noted below highlights (as a guide) the need for additional Geriatricians by 2021 and 2026.

	Richmond/Clarence		
Profession	2021 Forecast	2026 Forecast	2018 Actual headcount
Geriatric Medicine	4.4	4.7	3

In 2016, there were 1,199 *Cardiologists* employed in Australia. Of these, 89% were located in a major city. Males constituted 87% of Cardiologists. The average weekly hours for these specialists was 48. With 381 Cardiologists, New South Wales has the highest proportion (33%). This is followed by Victoria and Queensland (28.9% and 15% respectively). There are 297 (78%) Cardiologists working in Metropolitan Sydney. Of these, 53% intend to retire in the next five years. Eighty-four Cardiologists work in Non-Metropolitan Sydney (22%) of whom 78% intend to retire in the next five years.

In 2018, there were five Cardiologists practising in Richmond Clarence Network; three Cardiologists worked at Northern NSW Local Health District (NNSW LHD); two Cardiologists worked at NNSW LHD and St Vincent's Lismore. Males constituted 100% of Cardiologists. The average age was 49 years, which was similar to Australia and NSW.

In 2018, there was an average of 4.7 Cardiologists per 100,000 population across Australia; 5.1 Cardiologists per 100,000 population in NSW; and 2.9 Cardiologists per 100,000 population across Richmond Clarence Network.

Profession	Richmond / Clarence		
	Australia	NSW	Regional NSW
Cardiology	-37.7% (-2)	-42.4% (-3)	-7.1% (-1)

The Cardiologists' response to the survey noted that urgent outpatient clinic referrals are seen without delay in the public sector and private sector. The average waiting time for a non-urgent outpatient clinic referral in the public and private sectors is one week. Supporting current Cardiologists to provide an efficient Cardiology Service that is comparable to other regional areas should be a priority. This includes opening the Pacemaker Implant Service and staffing the Catheter Lab with enough Nurses and Echo Technicians to reduce hospital length of stay.

General Practitioners report that some recent changes have been introduced in the regions. Radiology services offering open access echocardiography are now available in Ballina and these services may spread. This could divert some of this work from private Cardiologists. Screening for atrial fibrillation may soon be available, mostly managed in General Practice, with some flow on to Cardiology.

The demand for Cardiology services will increase as the population ages. The forecast data noted below highlights (as a guide) the need for additional Cardiologists by 2021 and 2026.

	Richmond/Clarence		
Profession	2021 Forecast	2026 Forecast	2018 Actual headcount
Cardiology	8.5	9.1	5

In 2016, there were 622 *Endocrinologists* employed in Australia, of whom 90% were located in a major city. Half of Endocrinologists are male and half are female. They work, on average, 34 hours per week.

About one third of Endocrinologists, or 196, worked in NSW. Of these 162 (83%) worked in Metropolitan Sydney, while only 34 Endocrinologists worked in Non-Metropolitan Sydney. The demography of these clinicians was similar to that of Australia. The average age was 48 years and the average working week was about 39 hours. Even though the average age of these specialists is not high, 61% reported that they intend to retire in the next five years.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

In 2018, there was one Endocrinologist practising in the Richmond Clarence Network. She worked at the St Vincent's Hospital Lismore and was 39 years old. There was an average of 2.2 Endocrinologists per 100,000 population across Australia; 2.6 Endocrinologists per 100,000 population across NSW; and 0.6 Endocrinologists per 100,000 population across Richmond Clarence Network.

Profession	Richmond / Clarence		
	Australia	NSW	Regional NSW
Endocrinology	-73.4% (-2)	-77.6% (-2)	-54.1% (-1)

There is an increasing cohort of Endocrinology new fellows in Australia. There were 66 new fellows in 2015. This is a 127.6% increase from 2013 (29). Between 2013 and 2015, female new fellows increased by 100% and male new fellows by 200%. There were 138 Endocrinology trainees in 2016. There were 27 Endocrinology new fellows in 2016 in NSW. In NSW there were 43 Endocrinology advanced trainees in 2017.

The forecast data noted below highlights (as a guide) the need for additional Endocrinologists by 2021 and 2026.

	Richmond/Clarence		
Profession	2021 Forecast	2026 Forecast	2018 Actual headcount
Endocrinology	4.0	4.3	1

In 2016, there were 1,742 ***Obstetrician/Gynaecologists*** employed in Australia, of whom 82% were located in a major city. Males constituted 55% of Obstetrician/Gynaecologists. The total average weekly hours were 46 hours per week. In 2015, there were 447 Obstetrician/Gynaecologists employed in NSW of whom 50% worked in the public and private sectors. Females constituted 41% of Obstetrician/Gynaecologists. The average age was 53 years. Twenty-six per cent of the workforce are aged over 60 years, and 73% of those aged 60 or more years intend to retire in the next five years. Just over a quarter of Obstetrician and Gynaecologists in NSW worked outside Metropolitan Sydney.

In 2018, there were six Obstetrician/Gynaecologists practising in the Richmond Clarence Network: Three in the Richmond Network and three in the Clarence Network. Four worked only in the public sector (NNSWLHD) and two in both public and private[43] sectors (NNSW LHD and St Vincent's Lismore). Males constituted 67% of Obstetrician/Gynaecologists with an average age of 51 years. Females were, on average, five years younger than their male counterparts.

There are 6.8 clinicians per 100,000 population across Australia; 6.0. Obstetrician/Gynaecologists per 100,000 population across NSW; and 3.5 Obstetrician/Gynaecologists per 100,000 population across Richmond Clarence Network

Profession	Richmond / Clarence		
	Australia	NSW	Regional NSW
Obstetrics & Gynaecology	-48.0% (-4)	-41.0% (-3)	-20.0% (-1)

---

[43] In private sector only gynaecology services are provided.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

Growth in midwife delivery and loss of GP obstetricians has impacted on this workforce. The forecast data noted below highlights (as a guide) the need for additional Obstetrician/ Gynaecologists by 2021 and 2026.

Profession	Richmond/Clarence		
	2021 Forecast	2026 Forecast	2018 Actual headcount
Obstetrics & Gynaecology	12.2	13.1	6

In 2016, there were 460 *Otolaryngologists* employed in Australia, of whom 85% were located in a major city. Males constituted 87% of Otolaryngologists. The average age was 54 years and average working week was 38 hours. Females constituted 13% of Otolaryngologists and on average were 10 years younger than male Otolaryngologists.

In 2015, there were 151 Otolaryngologists employed in NSW, 36% of whom worked only in the private sector, while 62% worked in the public and private sectors. Females constituted 14% of Otolaryngologists. The average age was 54 years and average working week comprised 45 hours. Of this workforce, 33% were aged over 60 years. There are 109 Otolaryngologists in Metropolitan Sydney (72%), of whom 57% intend to retire in the next five years. In Non-Metropolitan Sydney there are 42 (28%) Otolaryngologists. Of these, 74% intend to retire in the next five years.

In 2018, there were four Otolaryngologists practising in the Richmond Clarence Network. One Otolaryngologist worked at Northern NSW Local Health District (NNSW LHD) and three at St Vincent's Lismore. Males constituted 75% of Otolaryngologists, and the average age was 47 years. In 2018 there was one female Otolaryngologist who was six years younger than the average age of male Otolaryngologists. The female Otolaryngologist worked 38 hours each week at NNSW LHD. All four Otolaryngologists practiced in the Richmond Network. An additional four Otolaryngologists practiced in the Tweed Byron Network.

There was an average of 1.8 Otolaryngologists per 100,000 population across Australia; 2.0 Otolaryngologists per 100,000 population across NSW; 2.3 Otolaryngologists per 100,000 population across Richmond Clarence Network.

Profession	Richmond/Clarence		
	Australia4	NSW4	Regional NSW4
Otolaryngology	30.5% (+1)	16.4% (+1)	48.6% (+1)

In 2016, there were 2,501 *Physicians*[44] employed in Australia, 90% of whom were located in a major city. Males constituted 68% of Physicians. The average age was 52 years. Females were, on average, five years younger than male Physicians. The total average hours for the Physician clinician workforce was 35 hours per week.

In 2018, there were 10[45] Physicians practising in the Richmond Clarence Network. All 12 Physicians practiced in the Richmond Network. Physician specialities include Haematology (4), Rheumatology (2), Infectious Disease (1), Respiratory and Sleep Medicine (3). Physicians worked both in the public and private sectors. Males constituted 70% of Physicians. The average age of male Physicians was 47 years, and the average age of female Physicians was 44 years.

There are 9.2 Physicians per 100,000 population across Australia; and 7.1 Physicians per 100,000 population across Richmond Clarence Network.

---

[44] This excludes general medicine
[45] Two further physicians have been recruited since the data were provided for the calculations

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

Profession	Richmond / Clarence		
	Australia	NSW	Regional NSW
Physician	-42.5% (-4)	No data	No data

It noted that potential confounding factor with the workforce data is some Physicians (Haematologists) also often work as Pathologists[46] (dual college trained).

The survey response highlighted that the average waiting time for non-urgent public and private outpatient clinic referrals is seven months. Currently there is a reliance on the locum workforce to cover leave. There is a critical need for additional Physician workforce and for a public and private sector outpatient clinic.

The comments about insufficient Physician workforce are supported by the Regional Comparison data which suggests the Richmond Network is under-resourced compared to Australia as a whole. The forecast data noted below highlights (as a guide) the need for additional Physicians by 2021 and 2026.

Profession	Richmond/Clarence		
	2021 Forecast	2026 Forecast	2018 Actual headcount
Physician	16.6	17.9	10

---

[46] Physician and Pathology workforce data needs to be further investigated to clarify instances of clinicians working as both Physician and Pathologist, and instances where they work just as a Physician or just as a Pathologist.

Appendix 6: Summary of Data

Summary of Comparison Data

Using Australian specialist numbers, the table below presents the number (headcount) of specialist clinicians per 100,000 population.

Profession	Australian Rate per 100,000 population
	2016
Addiction Medicine	0.6
Anaesthesia	18.1
Cardiology	4.7
Dermatology	1.9
Diagnostic Radiology	7.3
Emergency Medicine	6.7
Endocrinology	2.2
Gastroenterology & Hepatology	3.0
General Medicine	5.7
General Practice	92.5
General Surgery	7.1
Geriatric Medicine	2.4
Intensive Care	2.8
Medical Oncology	2.1
Nephrology	1.8
Neurology	2.0
Obstetrics & Gynaecology	6.8
Ophthalmology	3.7
Orthopaedic Surgery	5.1
Paediatrics & Child Health	7.6
Pain Medicine	1.0
Palliative Medicine	1.0
Pathology	3.6
Physician	9.2
Plastic Surgery	1.7
Psychiatry	12.6
Radiation Oncology	1.4
Rehabilitation Medicine	1.8
Sexual Health Medicine	0.4
Surgery	4.9

The following tables presents a summary (in percentages and headcount) of the comparison ratio and shortfalls for the **Northern NSW** region. Please see methodology[47] section for calculation. *(This data should only be used as a guide)*

Profession	Northern NSW (Tweed to Clarence)		
	Australia	NSW	Regional NSW
Addiction Medicine	8.9% (+1)	-3.0% (0)	37.8% (+1)
Anaesthesia	32.2% (+6)	37.6% (+7)	67.0% (+10)
Cardiology	-64.2% (-4)	-66.9% (-4)	-46.7% (-2)
Dermatology	-65.4% (-2)	-70.7% (-2)	-50.2% (-1)
Diagnostic Radiology	-30.7% (-3)	-35.2% (-3)	-9.8% (-1)
Emergency Medicine	120.8% (-9)	175.4% (+10)	177.6% (+10)
Endocrinology	-84.7% (-2)	-87.1% (-3)	-73.7% (-1)
Gastroenterology & Hepatology	-10.5% (-1)	11.1% (-1)	32.7% (+1)
General Medicine	23.4% (+2)	48.8% (+3)	47.0% (+3)
General Practice	27.9% (+26)	No data	No data
General Surgery	0.3% (+1)	1.7% (+1)	10.0% (+1)
Geriatric Medicine	-30.6% (-1)	-34.6% (-1)	-10.4% (-1)
Intensive Care	57.0% (+2)	68.2% (+2)	107.9% (+3)
Medical Oncology	13.4% (+1)	19.3% (+1)	56.8% (+1)
Nephrology	71.7% (-2)	57.7% (+2)	79.2% (+2)
Neurology	-66.7% (-2)	No data	No data
Obstetrics & Gynaecology	-45.2% (-4)	-37.9% (-3)	-15.8% (-1)
Ophthalmology	27.6% (+2)	2.1% (+1)	51.1% (+2)
Orthopaedic Surgery	12.3% (-1)	3.8% (+1)	19.9% (+1)
Otolaryngology	49.9% (+1)	33.6% (+1)	70.6% (+2)
Paediatrics & Child Health	-29.4% (-3)	No data	No data
Pain Medicine	-66.9% (-1)	-61.8% (-1)	-55.2% (-1)
Palliative Medicine	-3.2% (-1)	-8.8%(-1)	22.2% (+1)
Pathology	-72.2% (-3)	No data	No data
Physician	-45.0% (-5)	No data	No data
Plastic surgery	-60.3% (-2)	-56.5% (-1)	28.0% (+1)
Psychiatry	-38.3% (-5)	-42.4% (-6)	-7.2% (-1)
Radiation Oncology	-1.0% (-1)	-14.5% (-1)	-0.5% (-1)
Rehabilitation Medicine	-62.3% (-2)	-74.0% (-2)	-62.7%(-2)
Sexual Health Medicine	68.3% (-1)	9.7% (+1)	99.1% (+1)
Surgery	43.4% (+3)	No data	No data

Key

(pink)	-20% or more compared to Australia
(green)	Between +/-19.9% compared to Australia
(blue)	+20% or more compared to Australia

The table below shows the Northern NSW specialists' ratios compared to Australia, NSW and Regional NSW that are 20% or more below comparative averages.

---

[47] NSW Regional data is the computation of total regional NSW population/clinicians minus total population/clinicians in Metropolitan Sydney

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

Profession	NNSW region (Tweed to Clarence)		
	Australia	NSW	Regional NSW
Cardiology	-64.2% (-4)	-66.9% (-4)	-46.7% (-2)
Dermatology	-65.4% (-2)	-70.7% (-2)	-50.2% (-1)
Endocrinology	-84.7% (-2)	-87.1% (-3)	-73.7% (-1)
Pain Medicine	-66.9% (-1)	-61.8% (-1)	-55.2% (-1)
Rehabilitation Medicine	-62.3% (-2)	-74.0% (-2)	-62.7%(-2)

In the headcount comparison, Cardiology stands out. This is, however, reflective of lower ratios in the Tweed Valley, due to the model of care.

The table below highlights three areas. While Geriatric Medicine in comparison to regional NSW is within the 20% threshold range, this is more reflective of the significant shortage of Geriatricians in regional NSW.

Profession	NNSW region (Tweed to Clarence)		
	Australia	NSW	Regional NSW
Geriatric Medicine	-30.6% (-1)	-34.6% (-1)	-10.4% (-1)
Neurology	-66.7% (-2)	No data	No data
Pathology	-72.2% (-3)	No data	No data
Psychiatry	-38.3% (-5)	42.4% (-6)	-7.2% (-1)

While compared to Regional NSW Geriatric Medicine is within the 20% range (-1 clinician), it is an area of significant need. The same applies to Psychiatry.

The table below presents the specialist workforce ratios and shortfalls (in percentages and headcount) for **Richmond and Clarence Valleys** compared to Australia, NSW and Regional NSW. *(This data should only be used as a guide.)*

Profession	Richmond/Clarence		
	Australia	NSW	Regional NSW
Addiction Medicine	89.6% (1)	69.0% (+1)	140.0% (+1)
Anaesthesia	26.8% (+5)	32.0% (+6)	60.2% (+9)
Cardiology	-37.7% (-2)	-42.4% (-3)	-7.1% (-1)
Dermatology	-39.8% (-1)	-48.9% (-2)	-13.3% (-1)
Diagnostic Radiology	-75.9% (-6)	-77.4% (-6)	-68.6% (-4)
Emergency Medicine	66.0% (+5)	107.1% (+6)	108.7% (+6)
Endocrinology	-73.4% (-2)	-77.6% (-2)	-54.1% (-1)
Gastroenterology & Hepatology	16.9% (+1)	16.1% (+1)	73.3% (+2)
General Medicine	33.1% (+2)	60.4% (+3)	58.4% (+3)
General Practice	17.4% (+17)	No data	No data
General Surgery	-0.2% (-1)	1.2% (+1)	9.5% (+1)
Geriatric Medicine	-27.5% (-1)	-31.7% (-1)	-6.4%(-1)
Intensive Care	5.2% (+1)	12.6% (+1)	39.3% (+1)
Medical Oncology	12.8% (+1)	18.7% (+1)	56.0% (+1)
Nephrology	132.5% (+3)	113.5% (+3)	142.7% (+3)
Neurology	-100.0% (-3)	No data	No data
Obstetrics & Gynaecology	-48.0% (-4)	-41.0% (-3)	-20.0% (-1)
Ophthalmology	90.4% (+4)	52.4% (+3)	125.5% (+4)
Orthopaedic Surgery	26.5% (+2)	17.0% (+1)	35.1% (+2)
Otolaryngology	30.5% (+1)	16.4% (+1)	48.6% (+1)
Paediatrics & Child Health	-15.5% (-2)	No data	No data
Pain Medicine	-42.4% (-1)	-33.4% (-1)	-22.0% (-1)
Palliative Medicine	-43.8% (-1)	-47.1% (-1)	-29.1% (-1)
Pathology	-51.5% (-2)	No data	No data
Physician	-42.5% (-4)	No data	No data
Plastic Surgery	-30.8% (-1)	- 24.3% (-1)	122.8% (+1)
Psychiatry	-39.3% (-5)	-43.3% (-6)	-8.7% (-1)
Radiation Oncology	72.3% (+1)	48.9% (+1)	73.3% (+1)
Rehabilitation Medicine	-67.2% (-2)	-77.4% (-2)	-67.5% (-2)
Sexual Health Medicine	193.2% (+1)	91.0% (+1)	246.6% (+1)
Surgery	54.5% (+3)	No data	No data

Key

🟥	-20% or more compared to Australia
🟩	Between +/-19.9% compared to Australia
🟦	+20% or more compared to Australia

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

The table below presents the specialist craft groups where the Clarence and Richmond Valley ratios are below Australia, NSW and Regional NSW averages. Of note is the headcount numbers for Diagnostic Radiology this is primarily due to an outsourced model of care.

Profession	Richmond / Clarence		
	Australia	NSW	Regional NSW
Diagnostic Radiology	-75.9% (-6)	-77.4% (-6)	-68.6% (-4)
Endocrinology	-73.4% (-2)	-77.6% (-2)	-54.1% (-1)
Obstetrics & Gynaecology	-48.0% (-4)	-41.0% (-3)	-20.0% (-1)
Pain Medicine	-42.4% (-1)	-33.4% (-1)	-22.0% (-1)
Palliative Medicine	-43.8% (-1)	-47.1% (-1)	-29.1% (-1)
Rehabilitation Medicine	-67.2% (-2)	-77.4% (-2)	-67.5% (-2)

The table below highlights the professional groups where the ratios are below Australian and NSW averages (where data is available). It is noted that in certain disciplines (e.g. Cardiology and Geriatric Medicine), the ratios are within the 20% threshold range, compared to regional NSW. This is reflective of insufficient workforce in regional NSW, rather than sufficient workforce in Northern NSW.

Profession	Richmond / Clarence		
	Australia	NSW	Regional NSW
Cardiology	-37.7% (-2)	-42.4% (-3)	-7.1% (-1)
Dermatology	-39.8% (-1)	-48.9% (-2)	-13.3% (-1)
Geriatric Medicine	-27.5% (-1)	-31.7% (-1)	-6.4%(-1)
Neurology	-100.0% (-3)	No data	No data
Pathology	-51.5% (-2)	No data	No data
Physician	-42.5% (-4)	No data	No data
Plastic surgery	-30.8% (-1)	-24.3% (-1)	122.8% (+1)
Psychiatry	-39.3% (-5)	-43.3% (-6)	-8.7% (-1)

The table below presents the specialist workforce ratios and shortfalls (in percentages and headcount) for **Richmond Valley** compared to Australia, NSW and Regional NSW. *(This data should only be used as a guide.)*

Profession	Richmond		
	Australia	NSW	Regional NSW
Addiction Medicine	35.7% (0)	21.0% (+1)	71.8% (+1)
Anaesthesia	67.2% (+12)	74.0% (+13)	111.3% (+16)
Cardiology	52.9% (+3)	41.4% (+3)	127.8% (+5)
Dermatology	-13.7% (-1)	-26.9% (-1)	24.1% (+1)
Diagnostic Radiology	-65.4% (-5)	-67.7% (-6)	-55.0% (-4)
Emergency Medicine	112.7% (+8)	165.3% (+9)	167.4% (+9)
Endocrinology	-61.9% (-2)	-67.9% (-2)	-34.3% (-1)
Gastroenterology & Hepatology	67.3% (-3)	66.3% (+2)	148.2% (+4)
General Medicine	61.2% (+3)	94.4% (+5)	92.0% (+5)
General Practice	16.3% (+16)	No data	No data
General Surgery	7.2% (0)	8.7% (+1)	17.6% (+2)
Geriatric Medicine	3.9% (-4)	-2.2% (-1)	34.0% (+1)
Intensive Care	50.6% (1)	61.3% (+2)	99.4% (+3)
Medical Oncology	61.6% (+2)	70.0% (+2)	123.4% (+2)
Nephrology	185.4% (+4)	162.1% (+4)	197.8% (+4)
Neurology	-100.0% (-3)	No data	No data
Obstetrics & Gynaecology	-62.8% (-5)	-57.8% (-4)	-42.7% (-2)
Ophthalmology	81.8% (+4)	45.4% (+3)	115.3% (+4)
Orthopaedic Surgery	31.8% (+2)	21.8% (+2)	40.7% (+2)
Otolaryngology	86.9% (+2)	66.6% (+2)	112.7% (+2)
Paediatrics & Child Health	-1.0% (-1)	No data	No data
Pain Medicine	-17.6% (-1)	-4.7% (0)	11.7% (+1)
Palliative Medicine	-19.5% (-1)	-24.2% (-1)	1.5% (+1)
Pathology	-30.6% (-2)	No data	No data
Physician	-17.7% (-2)	No data	No data
Plastic surgery	-0.9% (-1)	8.5% (+1)	219.1% (+2)
Psychiatry	-19.8% (-3)	-25.1% (-4)	20.7% (+2)
Radiation Oncology	146.8% (+2)	113.2% (+2)	148.2% (+3)
Rehabilitation Medicine	-53.0% (-1)	-67.6% (-2)	-53.5% (-1)
Sexual Health Medicine	319.8% (+2)	173.5% (+2)	396.4% (+2)
Surgery	121.3% (+6)	No data	No data

Key

-20% or more compared to Australia

Between +/-19.9% compared to Australia

+20% or more compared to Australia

Based on the numbers in the table above it could be argued that Richmond Valley is reasonably well positioned for specialist medical workforce. This picture could also be interpreted as incomplete given that Richmond Valley clinicians reach out to Clarence Valley in providing specialist care, and respond to an inflow of patients from Clarence Valley to Lismore Base Hospital. In this case, a more accurate ratio is shown in the combined Richmond and Clarence Valley table.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

The table below presents specialist disciplines where comparative ratios denote a shortfall in specialist clinicians in Richmond Valley compared to Australia, NSW and regional NSW.

Profession	Richmond		
	Australia	NSW	Regional NSW
Diagnostic Radiology	-65.4% (-5)	-67.7% (-6)	-55.0% (-4)
Endocrinology	-61.9% (-2)	-67.9% (-2)	-34.3% (-1)
Neurology	-100.0% (-3)	No data	No data
Obstetrics & Gynaecology	-62.8% (-5)	-57.8% (-4)	-42.7% (-2)
Palliative Medicine	-19.5% (-1)	-24.2% (-1)	1.5% (+1)
Pathology	-30.6% (-2)	No data	No data
Psychiatry	-19.8% (-3)	-25.1% (-4)	20.7% (+2)
Rehabilitation Medicine	-53.0% (-1)	-67.6% (-2)	-53.5% (-1)

With regard to Palliative Medicine, as noted previously, the comparison to the regional NSW picture is more a reflection of insufficient workforce in regional NSW, rather than sufficient workforce in Northern NSW.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

The table below presents the specialist workforce ratios and shortfalls (in percentages and headcount) for **Clarence Valley** compared to Australia, NSW and Regional NSW. *(This data should only be used as a guide.)*

Profession	Clarence		
	Australia	NSW	Regional NSW
Addiction Medicine	214.2% (1)	180.0% (+2)	297.% (+1)
Anaesthesia	-66.8% (-12)	-65.5% (-12)	-58.1% (-9)
Cardiology	-100.0% (-5)	-100.0% (-6)	-100.0% (-4)
Dermatology	-100.0% (-2)	-100.0% (-3)	-100.0% (-2)
Diagnostic Radiology	-100.0% (-8)	-100.0% (-8)	-100.0% (-6)
Emergency Medicine	-42 % (-3)	-27.7% (-2)	-27.2% (-2)
Endocrinology	-100.0% (-3)	-100.0% (-3)	-100.0% (-2)
Gastroenterology & Hepatology	-100.0% (-4)	-100.0% (-3)	-100.0% (-3)
General Medicine	-32.1% (-2)	-18.2% (-1)	-19.2% (-1)
General Practice	19.9% (+19)	No data	No data
General Surgery	-17.3% (-2)	-16.1% (-2)	-9.3% (-1)
Geriatric Medicine	-100.0% (-3)	-100.0% (-3)	-100.0% (-2)
Intensive Care	-100.0% (-3)	-100.0% (-3)	-100.0% (-3)
Medical Oncology	-100.0% (-3)	-100.0% (-2)	-100.0% (-2)
Nephrology	10.1% (+1)	1.1% (0)	14.9% (+1)
Neurology	-100.0% (-3)	No data	No data
Obstetrics & Gynaecology	-13.78% (-1)	-2.3% (-1)	32.6% (+2)
Ophthalmology	110.4% (+5)	68.4% (+4)	149.2% (+5)
Orthopaedic Surgery	14.4% (+1)	5.8% (+1)	22.2% (+2)
Otolaryngology	-100.0% (-2)	-100.0% (-2)	-100.0% (-2)
Paediatrics & Child Health	-49.0% (-4)	No data	No data
Pain Medicine	-100.0% (-2)	-100.0% (-1)	-100.0% (-1)
Palliative Medicine	-100.0% (-2)	-100.0% (-2)	-100.0% (-1)
Pathology	-100.0% (-4)	No data	No data
Physician	-100.0% (-10)	No data	No data
Plastic surgery	-100.0% (-2)	-100.0% (-2)	-100.0% (-1)
Psychiatry	-84.5% (-11)	-85.6% (-12)	-76.7% (-7)
Radiation Oncology	-100.0% (-2)	-100.0% (-2)	-100.0% (-2)
Rehabilitation Medicine	-100.0% (-1)	-100.0% (-3)	-100.0% (-2)
Sexual Health Medicine	-100.0% (-1)	-100.0% (-1)	-100.0% (-1)
Surgery	-100.0% (-5)	No data	No data

Key

	-20% or more compared to Australia
	Between +/-19.9% compared to Australia
	+20% or more compared to Australia

It is clear from the table above, and the future forecast, that Clarence Valley is an area of significant need for medical workforce. Addressing the workforce recruitment and retention issues in Clarence Valley is a medium to long term challenge. Meanwhile, other strategies such as clinical streaming are recommended to ameliorate some of the significant challenges faced by Clarence Valley.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Population Based Medical Workforce Forecast

The table below presents the forecast of future population and medical workforce specialists for Richmond and Clarence. The Summary Table by Medical Specialty is for 2021 and 2026.

(This data should only be used as a guide)

Profession	Count/100,000 population vs Australia					
	Richmond		Clarence		Richmond Clarence	
	2021	2026	2021	2026	2021	2026
Addiction Medicine	28.6%	25.5%	196.4%	189.3%	79.4%	75.1%
Anaesthesia	54.4%	50.7%	-69.5%	-70.2%	16.9%	14.1%
Cardiology	-15.5%	-17.5%	-100.0%	-100.0%	-41.0%	-42.5%
Dermatology	-18.3%	-20.2%	-100.0%	-100.0%	-43.0%	-44.4%
Diagnostic Radiology	-67.2%	-68.0%	-100.0%	-100.0%	-77.2%	-77.7%
Emergency Medicine	101.6%	96.7%	-45.3%	-46.7%	57.1%	53.3%
Endocrinology	-63.9%	-64.7%	-100.0%	-100.0%	-74.8%	-75.4%
Gastroenterology & Hepatology	58.6%	54.7%	-100.0%	-100.0%	10.6%	7.9%
General Medicine	52.8%	49.1%	-36.0%	-37.5%	25.9%	22.9%
General Practice	10.2%	7.6%	13.1%	10.4%	11.1%	8.4%
General Surgery	1.5%	-0.9%	-22.0%	-23.9%	-5.6%	-7.9%
Geriatric Medicine	-1.6%	-3.9%	-100.0%	-100.0%	-31.4%	-33.0%
Intensive Care	42.7%	39.2%	-100.0%	-100.0%	-0.5%	-2.9%
Medical Oncology	53.1%	49.4%	-100.0%	-100.0%	6.8%	4.2%
Nephrology	170.4%	163.9%	3.9%	1.4%	120.0%	114.7%
Neurology	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%	-100.0%
Obstetrics & Gynaecology	-64.7%	-65.6%	-18.7%	-20.6%	-50.8%	-52.0%
Ophthalmology	72.2%	68.1%	98.5%	93.7%	80.2%	75.8%
Orthopaedic Surgery	24.9%	21.9%	7.9%	5.3%	19.7%	16.8%
Otolaryngology	77.1%	72.8%	-100.0%	-100.0%	23.5%	20.5%
Paediatrics	-6.2%	-8.5%	-52.0%	-53.1%	-20.0%	-22.0%
Pain Medicine	-21.9%	-23.8%	-100.0%	-100.0%	-45.5%	-46.8%
Palliative Medicine	-23.7%	-25.6%	-100.0%	-100.0%	-46.8%	-48.1%
Pathology	-34.2%	-35.8%	-100.0%	-100.0%	-54.1%	-55.2%
Physician	-22.0%	-23.9%	-100.0%	-100.0%	-45.6%	-46.9%
Plastic Surgery	-6.1%	-8.4%	-100.0%	-100.0%	-34.5%	-36.1%
Psychiatry	-24.0%	-25.8%	-85.4%	-85.8%	-42.6%	-43.9%
Radiation Oncology	133.8%	128.2%	-100.0%	-100.0%	63.1%	59.1%
Rehabilitation	-55.4%	-56.5%	-100.0%	-100.0%	-68.9%	-69.7%
Sexual Health	297.8%	288.2%	-100.0%	-100.0%	177.4%	170.7%
Surgery	109.7%	104.6%	-100.0%	-100.0%	46.2%	42.7%

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

Using the forecast table on the previous page, the table below presents the number of specialists in each speciality area, forecast in two timeframes (2021 and 2026) compared to the 2016 actuals for **Northern NSW**. *(This data should only be used as a guide)*

Profession	Northern NSW		
	2021 Forecast	2026 Forecast	2018 Actual headcount
Addiction Medicine	1.9	2.0	2
Anaesthesia	56.7	58.7	69
Cardiology	14.8	15.3	5
Dermatology	6.1	6.3	2
Diagnostic Radiology	22.9	23.7	15
Emergency Medicine	21.1	21.8	44
Endocrinology	6.9	7.2	1
Gastroenterology & Hepatology	9.5	9.8	8
General Medicine	18.0	18.7	21
General Practice	290.4	300.8	476
General Surgery	22.2	23.0	21
Geriatric Medicine	7.6	7.9	5
Intensive Care	8.8	9.1	13
Medical Oncology	6.5	6.8	7
Nephrology	5.5	5.7	9
Neurology	6.4	6.6	2
Obstetrics & Gynaecology	21.3	22.0	11
Ophthalmology	11.6	12.0	14
Orthopaedic Surgery	16.0	16.6	17
Paediatrics & Child Health	24.0	24.9	16
Pain Medicine	3.2	3.3	1
Palliative Medicine	3.3	3.4	3
Pathology	11.4	11.8	3
Physician	28.9	29.9	18
Plastic Surgery	5.3	5.5	2
Psychiatry	39.5	40.9	23
Radiation Oncology	4.3	4.4	4
Rehabilitation Medicine	5.6	5.8	2
Sexual Health Medicine	1.3	1.3	3
Surgery	15.5	16.1	21

The above 2021 and 2026 projections are calculated utilising the national ratios (clinician/per 1000 population) and applying these to the available respective year population projections for Northern NSW. This is a straight-line computation and should only be used as an indicative guide.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Using the forecast table on the previous page (page 85), the table below presents the number of specialists forecast in two timeframes (2021 and 2026) compared to the 2016 actuals for **Richmond Clarence Network**. *(This data should only be used as a guide)*

Profession	Richmond Clarence Network		
	2021 Forecast	2026 Forecast	2018 Actual headcount
Addiction Medicine	1.1	1.2	2
Anaesthesia	32.5	35.1	38
Cardiology	8.5	9.1	5
Dermatology	3.5	3.8	2
Diagnostic Radiology	13.1	14.2	3
Emergency Medicine	12.1	13.0	19
Endocrinology	4.0	4.3	1
Gastroenterology & Hepatology	5.4	5.9	6
General Medicine	10.3	11.1	13
General Practice	166.5	179.6	245
General Surgery	12.7	13.7	12
Geriatric Medicine	4.4	4.7	3
Intensive Care	5.0	5.4	5
Medical Oncology	3.7	4.0	4
Nephrology	3.2	3.4	7
Neurology	3.6	3.9	0
Obstetrics & Gynaecology	12.2	13.1	6
Ophthalmology	6.7	7.2	12
Orthopaedic Surgery	9.2	9.9	11
Paediatrics & Child Health	13.8	14.8	11
Pain Medicine	1.8	2.0	1
Palliative Medicine	1.9	2.0	1
Pathology	6.5	7.1	3
Physician	16.6	17.9	12
Plastic surgery	3.1	3.3	2
Psychiatry	22.6	24.4	13
Radiation Oncology	2.5	2.6	4
Rehabilitation Medicine	3.2	3.5	1
Sexual Health Medicine	0.7	0.8	3
Surgery	8.9	9.6	13

The above 2021 and 2026 projections are calculated utilising the national ratios (clinician/per 1000 population) and applying these to the available respective year population projections for Richmond and Clarence Network. This is a straight-line computation and should only be used as an indicative guide.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

The table below presents the number of specialists forecast in two timeframes (2021 and 2026) compared to the 2016 actuals for **Richmond**. *(This data should only be used as a guide)*

Profession	Richmond		
	2021 Forecast	2026 Forecast	2018 Actual headcount
Addiction Medicine	0.8	0.8	1
Anaesthesia	22.7	23.2	35
Cardiology	5.9	6.1	5
Dermatology	2.4	2.5	2
Diagnostic Radiology	9.2	9.4	3
Emergency Medicine	8.4	8.6	17
Endocrinology	2.8	2.8	1
Gastroenterology & Hepatology	3.8	3.9	6
General Medicine	7.2	7.4	11
General Practice	116	119	176
General Surgery	8.9	9.1	9
Geriatric Medicine	3.0	3.1	3
Intensive Care	3.5	3.6	5
Medical Oncology	2.6	2.7	4
Nephrology	2.2	2.3	6
Neurology	2.5	2.6	0
Obstetrics & Gynaecology	8.5	8.7	3
Ophthalmology	4.6	4.8	8
Orthopaedic Surgery	6.4	6.6	8
Paediatrics & Child Health	9.6	9.8	9
Pain Medicine	1.3	1.3	1
Palliative Medicine	1.3	1.3	1
Pathology	4.6	4.7	3
Physician	11.5	11.8	10
Plastic Surgery	2.1	2.2	2
Psychiatry	15.8	16.2	12
Radiation Oncology	1.7	1.8	4
Rehabilitation Medicine	2.2	2.3	1
Sexual Health Medicine	0.5	0.5	2
Surgery	6.2	6.4	13

The above 2021 and 2026 projections are calculated utilising the national ratios (clinician/per 1000 population) and applying these to the available respective year population projections for Richmond Valley. This is a straight-line computation and should only be used as an indicative guide.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

The table below presents the number of specialists forecast in two timeframes (2021 and 2026) compared to the 2016 actuals for **Clarence**. *(This data should only be used as a guide)*

Profession	Clarence		
	2021 Forecast	2026 Forecast	2018 Actual headcount
Addiction Medicine	0.3	0.3	1
Anaesthesia	9.8	10.1	3
Cardiology	2.6	2.6	0
Dermatology	1.1	1.1	0
Diagnostic Radiology	4.0	4.1	0
Emergency Medicine	3.7	3.7	2
Endocrinology	1.2	1.2	0
Gastroenterology & Hepatology	1.6	1.7	0
General Medicine	3.1	3.2	2
General Practice	50.4	51.6	69
General Surgery	3.8	3.9	3
Geriatric Medicine	1.3	1.4	0
Intensive Care	1.5	1.6	0
Medical Oncology	1.1	1.2	0
Nephrology	1.0	1.0	1
Neurology	1.1	1.1	0
Obstetrics & Gynaecology	3.7	3.8	3
Ophthalmology	2.0	2.1	4
Orthopaedic Surgery	2.8	2.8	3
Paediatrics & Child Health	4.2	4.3	2
Pain Medicine	0.6	0.6	0
Palliative Medicine	0.6	0.6	0
Pathology	2.0	2.0	0
Physician	5.0	5.1	0
Plastic Surgery	0.9	0.9	0
Psychiatry	6.8	7.0	1
Radiation Oncology	0.7	0.8	0
Rehabilitation Medicine	1.0	1.0	0
Sexual Health Medicine	0.2	0.2	0
Surgery	2.7	2.8	0

The above 2021 and 2026 projections are calculated utilising the national ratios (clinician/per 1000 population) and applying these to the available respective year population projections for Clarence Valley. This is a straight-line computation and should only be used as an indicative guide.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

The table below presents the medical specialists that require attention in the Richmond Clarence Network. The table presents the medical specialist forecast and current headcount.[48]

Profession	Richmond/Clarence		
	2021 Forecast	2026 Forecast	2018 Actual headcount
Cardiology	8.5	9.1	5
Dermatology	3.5	3.8	2
Endocrinology	4.0	4.3	1
Geriatric Medicine	4.4	4.7	3
Neurology	3.6	3.9	0
Obstetrics & Gynaecology	12.2	13.1	6
Palliative Medicine	1.9	2.0	1
Pathology	6.5	7.1	3
Physician	16.6	17.9	12
Psychiatry	22.6	24.4	13
Rehabilitation Medicine	3.2	3.5	1

The medical specialists noted above for which a planned approach to address the shortfall is required, include:

- Neurology
- Rehabilitation Medicine
- Psychiatry
- Palliation Medicine
- Obstetrics and Gynaecology
- Cardiology
- Geriatric Medicine.

---

[48] Please note Diagnostic Radiology is not included as the shortfall in workforce is inflated due to the model of care.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Appendix 7: Discipline Specific Data Comparison

Addiction Medicine

Addiction Medicine Physicians provide comprehensive care to improve the health outcomes for patients with a wide range of addiction disorders, including drug and alcohol addiction, and pharmaceutical dependency. A minimum of three years full-time training is required through the Royal Australasian College of Physicians to specialise in this area.[1]

Addiction Medicine	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 150 Addiction Medicine Physicians employed in Australia • 28.7% worked in the private sector • 85.3% of Addiction Medicine Physicians who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 52 Addiction Medicine Physicians employed in NSW • 11% worked in the private sector only while 10% worked in the public and private sectors.	• In 2018, there are two Addiction Medicine Physicians practising in the Richmond Clarence Networks. • Both Addiction Medicine Physicians work at Northern NSW Local Health District. • Both Addiction Medicine Physicians in the Richmond Network are part-time Visiting Medical Officers (survey information).

Workforce *DEMOGRAPHICS*	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 75% of Addiction Medicine Physicians. The average age was 59.8 years and average work hours each week was 38.2 • Females represented 25% of Addiction Medicine Physicians and on average were 4.4 (55.4) years younger and worked 6 fewer hours per week compared to male Addiction Medicine Physicians • The total average hours for the Addiction Medicine Physician workforce was 35.6 hours per week • The age group with the highest proportion (40%) of Addiction	• One male Addiction Medicine Physician (50%) aged 64 years. • One female Addiction Medicine Physicians (50%) aged 45 years. • Data on work hours is currently not available.

	Medicine Physicians was 60-69 years. **NSW** • Females represent 35% of Addiction Medicine Physicians • The average age was 57.0 years and average work hours each week was 31.2 • 40% of the workforce are aged over 60 years.	

Distribution	**Australia and NSW** [1,2,3,4]	**Richmond and Clarence Network** [2,5,6]
	Australia • 86.7% of Addiction Medicine Physicians were located in a major city or a location considered as MMM1[7] • There is 0.5 Addiction Medicine Physicians per 100,000 population across Australia • New South Wales has the highest proportion of Addiction Medicine Physicians with 39.8%. **NSW** • 39 Addiction Medicine Physicians work in Metropolitan Sydney (75%) • 43% of these intend to retire in the next five years • 13 Addiction Medicine Physicians work in Non-Metropolitan Sydney (25%) • 67% of these intend to retire in the next five years • There is 0.7 Addiction Medicine Physicians per 100,000 population across NSW.	• One Addiction Medicine Physician practices in the Richmond Network • One Addiction Medicine Physician practices in Clarence Network • There is 1.2 Addiction Medicine Physicians per 100,000 population across Richmond Clarence Network.

New Fellows *Vocational* *Training*	**Australia and NSW** [1,2,3,4]	**Richmond and Clarence Network** [2,5,6]
	Australia • **New fellows**: There were 8 Addiction Medicine new fellows (7 male and 1 female) in 2015. This is an increase of five from 2013 • There were no overseas trained new fellows in Addiction Medicine between 2013 and 2015	• One male Addiction Medicine Physician (50%) aged 64 years • One female Addiction Medicine Physicians (50%) aged 45 years. • Data on work hours is currently not available

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

| | Vocational training: There were 27 Addiction Medicine Physician vocational trainees in 2016. This is a 12.5% increase from 2013 (24). The gender distribution of the vocational trainees has remained constant between 2013 and 2016 were approximately 45% are female.

NSW
• **New fellows**: There were 4 Addiction Medicine new fellows in 2016
• **Advanced trainees**: There were 21 Addiction Medicine advanced trainees in 2017. This is an increase from 14 in 2016. | |

Regional Comparisons

The Addiction Medicine medical workforce profile in Richmond and Clarence Valleys is more than 20% higher per 100,000 population compared to the Australian average. Given that Addiction Medicine is still developing and the number of clinicians is overall small, this is not considered as oversupply.

Considerations and Emerging Trends
• Northern NSW has very high rates of substance misuse. • Northern NSW has higher than the state average aged population and high use of opioids and codeine. • Changes to prescribing rules for opiate treatment program have facilitated GP prescription of methadone and buprenorphine. • Greater access, and reduced need for specialist prescribers.

Workforce Survey Response

- One Addiction Medicine Specialist in the Richmond Network responded to the survey
- The Addiction Medicine Physician reports that:
  - Both Addiction Medicine Physicians in the Richmond Network are part-time Visiting Medical Officers and the respondent works the equivalent of 0.5FTE
  - The Addiction Medicine workforce data is consistent with their own knowledge in terms of age and gender profiles

Need

- The average waiting time for an urgent public sector outpatient clinic referral is 72 hours. The average waiting time for a non-urgent public sector outpatient clinic referral is 14 days
- There is a critical need for additional Addiction Medicine workforce due to:
  - Part-time workforce which limits patient access and depth of service
  - Planned further reduction in hours in the next 12-18 months (once two Advanced Trainees have completed their training in Addiction Medicine)
  - Provide more local access to patients
- There is currently no reliance on regular locum workforce

- While Opiate Treatment Program rule changes may facilitate General Practitioners to prescribe methadone and buprenorphine, this is not currently occurring. Specialist prescribers still manage a large case load of patients, who would ideally, be suitable for primary health care. However, General Practitioners remain reluctant to prescribe due to the complexity of these patients and their already significant workloads. The other issue is bulk billing. Many of these patients cannot afford to see a General Practitioner who does not bulk bill. The need for specialist prescribers has not yet reduced.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Workforce Survey Implications

- The head count data analysis would seem to indicate that compared to Australian averages NNSW is favourably positioned. The data suggests the Richmond Network is resourced favourably (26.3%) compared to the Australian average. This is likely due to the identified difference in head count versus FTE.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

Anaesthesia

Anaesthetists work in a range of clinical environments and apply their knowledge and skills to caring for patients in a variety of clinical contexts, providing anaesthesia and sedation for surgery and other procedures, providing pain management and periprocedural care, working in resuscitation, trauma and retrieval teams and working with specialists in intensive care medicine. A minimum of five years training through the Australian and New Zealand College of Anaesthetists is required to specialise in this area.[1]

Anaesthetists	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 4,373 Anaesthetists employed in Australia • 43.9% worked in the private sector • 98% of Anaesthetists who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 1,265 Anaesthetists employed in NSW • 22% worked in the private sector only while 52% worked in the public and private sectors.	• In 2018, there are 38 Anaesthetists practising in the Richmond Clarence Network • 5.2% (2) of Anaesthetists work at St Vincent's Lismore • 57.8% (23) of Anaesthetists work at Northern NSW Local Health District (NNSW LHD) and St Vincent's Lismore • An Anaesthetist (2.6%) that works at St Vincent's Lismore also works as an Intensivist at NNSW LHD • 34.2% (13) of Anaesthetists worked at NNSW LHD only. • There are 32 Anaesthetists at Lismore Base Hospital with another 3 in the private sector.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 70% of Anaesthetists. The average age was 50.1 years and average work hours each week was 41.1 • Females represented 30% of Anaesthetists. The average age was 45.5 years and average work hours each week was 35.8 • The total average hours for the Anaesthetic workforce was 39.6 hours per week. **NSW** • Females represent 28.7% of Anaesthetists • The average age was 49.2 years and average work hours each week was 40.1	• Males represent 78.4% of Anaesthetists. The average age is 51.6 years • Females represent 21.6% of Anaesthetists and on average were 2.8 years younger than male Anaesthetists • The age group with the largest proportion of Anaesthetists was 40-49 years.

	17.8% of the workforce are aged over 60 years.	

Distribution	**Australia and NSW** [1,2,3,4]	**Richmond and Clarence Network** [2,5,6]
	Australia • 84.1% of Anaesthetists were located in a major city or a location considered as MMM1[7] • New South Wales has the highest proportion of Anaesthetists with 30.2% followed by Victoria with 24.2% • There was an average of 17.6 Anaesthetists per 100,000 population across Australia • New South Wales had less Anaesthetists per 100,000 population compared to Australia. **NSW** • 895 Anaesthetists work in Metropolitan Sydney (70%) • 49% of these intend to retire in the next five years • 370 Anaesthetists work in Non-Metropolitan Sydney (30%) • 56% of these intend to retire in the next five years • There is 16.9 Anaesthetists per 100,000 population across NSW.	• 3 Anaesthetists work in the Clarence Network • 35 Anaesthetists work in the Richmond Network • An additional 31 Anaesthetists work at the Tweed Byron Network • There is 22.3 Anaesthetists per 100,000 population across Richmond and Clarence Network

New Fellows *Vocational Training*	**Australia and NSW** [1,2,3,4]	**Richmond and Clarence Network** [2,5,6]
	Australia • **New fellows:** The number of new fellows from the Australian and New Zealand College of Anaesthetists decreased every year from 2013 (256 in 2013, 208 in 2014, 160 in 2015) • The number of overseas trained new fellows also decreased between 2013 and 2015. Overseas trained new fellows accounted for 12.5% of	Richmond • Prevocational Training x 1 SRMO • Vocational Training x 11 • Provisional Fellow x 1

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

	the total number of new fellows in 2015 • 41.9% of new fellows were female in 2015 VOCATIONAL TRAINING: THERE WERE 1,237 VOCATIONAL TRAINEES IN 2016 AND 45.6% OF THESE WERE FEMALES. TRAINEES IN ANAESTHETICS INCREASED BY 2.1% BETWEEN 2013 AND 2016. **NSW** • **New fellows**: There were 67 Anaesthetic new fellows in 2016 • **Advanced trainees**: There were 208 Anaesthetic advanced trainees in 2017. This is an increase from 201 in 2016.	

Regional Comparisons

The Anaesthetic medical workforce profile for the combined Richmond and Clarence Valleys is more than 20% higher per 100,000 population compared to the Australian average. This is however due to significantly higher number of clinicians in Richmond Valley, Clarence Valley has as short fall of anaesthetists compared to the Australian average.

Workforce Survey Response

- One Anaesthetist in the Richmond Network responded to the survey
- The Anaesthetist reports that:
    - Some Anaesthetists have an appointment in the Richmond Network but do not work in Richmond Network

Need

- The Anaesthetist head count does not correlate with the actual hours required to meet service demand
- There is a reliance on regular locum workforce for mostly clinical work (on call rarely). Locums have been used over 35 weeks currently
- There is a critical need for additional Anaesthesiology workforce due to:
    - Shortage of consultant workforce
    - Opening of new theatres
    - Ageing workforce who no longer wish to work extra sessions to cover holiday/study/sick leave

- Demand for services will increase due to ageing population, reduced Private Health Insurance coverage, and patients expecting their health care be delivered closer to home. There needs to be better integration of pre-hospital assessments, interventions and post-hospital follow-up clinics after admission. Anaesthetists will become more involved in pre and post-hospital care as the Perioperative Medicine clinician and will involve more Anaesthetists in non-theatre activities.

Workforce Survey Implications

- The headcount ratio comparison suggests that the Richmond Network is resourced favourably (+40.2%) compared to the Australian average

- Workforce data needs to be further investigated to clarify differences reported regarding head count and FTE and place of work versus appointment.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

Cardiology

Cardiology is concerned with the prevention, investigation, therapy of, and research into, disease involving the cardiovascular system. A minimum of 6 years full-time training through the Royal Australasian College of Physicians is required to specialise in this area. Below excludes paediatric cardiology figures.[1]

Cardiologists	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 1,199 Cardiologists employed in Australia • 59.0% worked in the private sector • 95.2% of Cardiologists who completed the 2016 National Health Workforce Survey **NSW** • In 2015, there were 381 Cardiologists employed in NSW • 24% worked in the private sector only while 68% worked in the public and private sectors.	• In 2018, there are 5 Cardiologists practising in Richmond Clarence Network • 3 Cardiologists work at Northern NSW Local Health District (NNSW LHD) • 2 Cardiologists work at NNSW LHD and St Vincent's Lismore.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 86.8% of Cardiologists. The average age was 50.1 years and average work hours each week was 48.4 • Females represented 13.2% of Cardiologists and on average were 5.3 years younger and worked 5.3 fewer hours per week compared to male Cardiologists • The total average hours for the Cardiology workforce was 47.7 hours per week. **NSW** • Females represent 14.2% of Cardiologists • The average age was 49.6 years and average work hours each week was 48.2 • 21.4% of the workforce are aged over 60 years.	• Males represent 100% of Cardiologists. The average age is 48.8 years • The age group with the largest proportion of Cardiologists is 40-49 years • Data on work hours is currently not available.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia - 88.5% of Cardiologists were located in a major city or a location considered as MMM1[7] - New South Wales has the highest proportion of Cardiologists (33%), followed by Victoria and Queensland (28.9% and 15% respectively) - There was an average of 4.7 Cardiologists per 100,000 population across Australia. **NSW** - 297 Cardiologists work in Metropolitan Sydney (78%) - 53% of these intend to retire in the next five years - 84 Cardiologists work in Non-Metropolitan Sydney (22%) - 78% of these intend to retire in the next five years - There is 5.1 Cardiologists per 100,000 population across NSW.	- All Cardiologists practice in the Richmond Clarence Network - There is 2.9 Cardiologists per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia - **New fellows:** There were 164 Cardiology new fellows in 2016. This is an increase of 9.3% from 2013. Vocational training: There were 164 vocational trainees in 2016, 21% of which were female. The overall number of trainees remained steady with little change between 2013 and 2016. However, the number of female trainees was 20.7% higher in 2016 (35) than in 2013 (29). **NSW** - **New fellows**: There were 46 Cardiology new fellows in 2016 - **Advanced trainees**: There were 68 Cardiology advanced trainees in 2017. This is an increase from 62 in 2016.	**Richmond** - Prevocational Training x 2 (Intern/RMO) - Vocational Training x1 BPT - Vocational Training x1 AT

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Regional Comparisons

The Cardiologist medical workforce profile in Richmond and Clarence Valleys is below, per 100,000 population, the Australian average. Richmond Valley ratio is close to the Australia average whereas Clarence Valley is an area of significant need.

Considerations and Emerging Trends
• Radiology services offering open access echocardiography has started in Ballina and may spread. This could divert some of this work from private cardiologists. • Screening for atrial fibrillation may be started, mostly managed in general practice, but some flow on to cardiology.

Workforce Survey Response

- One Cardiologist in the Clarence Network responded to the survey

Need

- The Cardiologist reports that:
  - Urgent outpatient clinic referrals are seen without delay in the public sector and private sector. The average waiting time for a non-urgent outpatient clinic referral in the public and private sectors is one week
  - Supporting current Cardiologists to provide an efficient Cardiology Service that is comparable to other regional areas should be a priority. This includes opening the Pacemaker Implant Service and staffing the Catheter Lab with enough Nurses and Echo Technician to reduce hospital length of stay
  - The demand for Cardiology services will increase with the ageing population.

Workforce Survey Implications

- Workforce data needs to be further investigated to clarify differences with Clarence Network head count.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Dermatology

Dermatologists specialise in the diagnosis, treatment and prevention of skin diseases and cancers. A minimum of four years full-time training through the Australasian College of Dermatologists is required to specialise in this area.[1]

Dermatologists	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 484 Dermatologists employed in Australia • 94.2% worked in the private sector • 97.5% of Dermatologists who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 172 Dermatologists employed in NSW • 27% worked in the private sector only while 71% worked in the public and private sectors.	• In 2018, there are 2 Dermatologists practising in the Richmond Clarence Network • 1 Dermatologist works at Northern NSW Local Health District • 1 Dermatologist works at St Vincent's Lismore.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 55.5% of Dermatologists. The average age was 53.6 years and average work hours each week was 42.6 • Females represented 44.5% of Dermatologists and on average were 6.8 years younger and worked 8.3 fewer hours per week compared to male Dermatologists • The total average hours for the Dermatology workforce was 39.0 hours per week. **NSW** • Females represent 44.8% of Dermatologists • The average age was 52.7 years and average work hours each week was 38.6 • 27.9% of the workforce are aged over 60 years.	• 1 male Dermatologist aged 61 years • 1 female Dermatologists aged 35 years • Data on work hours is currently not available.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia	• Both Dermatologists work in the Richmond Network
	• 92.4% of Dermatologists were located in a major city or a location considered as MMM1[7]	• There is 1.2 Dermatologists per 100,000 population across Richmond Clarence Network.
	• There is 1.9 Dermatologists per 100,000 population across Australia	
	• New South Wales has the highest proportion of Dermatologists with 36%	
	• New South Wales is one of three states that have a higher ratio of Dermatologists per 100,000 population than the national average.	
	NSW	
	• 136 Dermatologists work in Metropolitan Sydney (79%)	
	• 56% of these intend to retire in the next five years	
	• 36 Dermatologists work in Non-Metropolitan Sydney (21%)	
	• 63% of these intend to retire in the next five years	
	• There is 2.3 Dermatologists per 100,000 population across NSW.	

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia	• Nil
	• **New fellows:** There were 20 Dermatology new fellows in 2015. The number of new fellows from the Australasian College of Dermatologists reached a peak of 31 in 2014 where 7 were overseas trained. Between 2013 and 2015 the number of new fellows who were trained overseas and obtained their specialist qualification outside of Australia fell to zero	
	• Females represented over half of all new fellows in every year between 2013 and 2015	
	Vocational training: trainees in dermatology increased by 8.4% between 2013 (95) and 2016 (103).	

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

During this period the number of female trainees increased by 19.3% from 57 to 68

WORKFORCE PROJECTIONS: ASSUMING A STATIC INTAKE OF TRAINEES, THERE IS A PROJECTED SHORTAGE OF 60 FULL-TIME EQUIVALENT DERMATOLOGISTS FOR 2025 AND A SHORTFALL OF 90 FTE IN 2030.

NSW
- **New fellows**: There were 3 Dermatology new fellows in 2016
- **Advanced trainees**: There were 19 Dermatology advanced trainees in 2017. This is an increase from 17 in 2016.

Regional Comparisons

The Dermatology medical workforce profile in Richmond and Clarence Valleys is below, per 100,000 population, the Australian average. Richmond Valley ratio is close to the Australia average whereas Clarence Valley is an area of significant need.

Emerging Issues and Considerations
• There is chronic long wait time for access to dermatologist services. • Growth in skin cancer rates and growth in GPs running specialised skin cancer clinics. This probably will not have a big impact on dermatology specialists.

Workforce Survey Response

No response received.

References
1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Diagnostic Radiology

Diagnostic (Clinical) radiology relates to the diagnosis or treatment of a patient through the use of medical imaging. Diagnostic imaging uses plain X-ray radiology, computed tomography (CT), magnetic resonance imaging (MRI), ultrasound and nuclear medicine imaging techniques to obtain images that are interpreted to aid in the diagnosis of disease. It takes a minimum of five years full-time training with the Royal Australian and New Zealand College of Radiologists to specialise in diagnostic radiology.[1]

Radiologists	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 1,801 Radiologists employed in Australia • 57.2% worked in the private sector • 98.0% of Radiologists who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 584 Radiologists employed in NSW • 43% worked in the private sector only while 39% worked in the public and private sectors.	• In 2018, there are 3 Radiologists practising in Richmond Clarence Network • 2 Radiologists work at Northern NSW Local District (NNSW LHD) including Breast-Screen NSW • One Radiologist works at St Vincent's Lismore and NNSW LHD (but in the Tweed Byron Network).

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 75.4% of Radiologists. The average age was 51.3 years and average work hours each week was 42.1 • Females represented 24.6% of Radiologists and on average were 3.8 years younger and worked 7.9 fewer hours per week compared to male Radiologists • The total average hours for the Radiology workforce was 40.2 hours per week. **NSW** • Females represent 25.3% of Radiologists • The average age was 51.1 years and average work hours each week was 42.2	• All Radiologists are females and have an average age of 57 years • The age group with the largest proportion of Radiologists was 50-59 years • Data on work hours is currently not available.

	• 24% of the workforce are aged over 60 years.	

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 85.6% of Radiologists were located in a major city or a location considered as MMM1[7] • There is 7.3 Radiologists per 100,000 population across Australia • New South Wales has the highest proportion of Radiologists with 30.8%. **NSW** • 435 Radiologists work in Metropolitan Sydney (74%) • 67% of these intend to retire in the next five years • 149 Radiologists work in Non-Metropolitan Sydney (26%) • 74% of these intend to retire in the next five years • There is 7.8 Radiologists per 100,000 population across NSW.	• 3 Radiologists practice in the Richmond Network • An additional 12 Radiologists practice in the Tweed Byron Network • There is 1.8 Radiologists per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • **New fellows**: There were 88 Radiology new fellows in 2015. The overall number of Radiology new fellows decreased by 12% between 2013 (100) and 2015 (88). Overseas trained new fellows increased by 35.3% during this period from 17 to 23 • Males represented 71.6% of new fellows in 2015 • **Vocational training**: The total number of Radiology trainees increased by 15.9% from 364 in 2013 to 422 in 2016. The proportion of female trainees has remained at approximately 35% between 2013 and 2016.	• Nil

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Regional Comparisons

The Diagnostic Radiology medical workforce profile in Richmond and Clarence Valleys is below, per 100,000 population, the Australian average. While both Richmond and Clarence Valleys have a shortfall in medical workforce in diagnostic radiology compared to the National average, this should be viewed in light of the service model provided by the Local Health District and NSW Health.

Considerations and Emerging Trends
• Likely to respond to demand, though with a significant time lag, maintaining demand pressure on private services.

Workforce Survey Response

No response received.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

Emergency Medicine

Emergency Medicine physicians are acute generalists with specialist skills in resuscitation and diagnosis in the acute phase of illness. With a wide range of procedural and technical skills, emergency medicine physicians provide care for patients of all ages and with a wide range of clinical needs. It takes a minimum of five years of full-time training with the Australasian College for Emergency Medicine to specialise in emergency medicine.[1]

Emergency Medicine	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 1,761 Emergency Medicine Physicians employed in Australia • 9.5% worked in the private sector • 92.4% of Emergency Medicine Physicians who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 403 Emergency Medicine Physicians employed in NSW • 89% worked in the public sector only while 9% worked in the public and private sectors.	• In 2018, there are 19 Emergency Medicine Physicians practising in the Richmond Clarence Network • All Emergency Medicine Physicians work at Northern NSW Local Health District (NNSW LHD).

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 68% of Emergency Medicine Physicians. The average age was 46.3 years and average work hours each week was 39.7 per week • Females represented 32% of Emergency Medicine Physicians and on average were 2.9 years younger and worked 4.0 fewer hours per week compared to male Emergency Medicine Physicians • The total average hours for the Emergency Medicine Physician workforce was 38.5 hours per week. **NSW**	• Males represent 73.7% of Emergency Medicine Physicians. The average age is 45.9 years • Females represent 26.3% of Emergency Medicine Physicians. The average age is 48.4 years • The age group with the largest proportion of Emergency Medicine Physicians is 40-49 years • Data on work hours is currently not available.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

	• Females represent 33% of Emergency Medicine Physicians • The average age was 45.7 years and average work hours each week was 41.4 • 4% of the workforce are aged over 60 years.	

Distribution	**Australia and NSW [1,2,3,4]**	**Richmond and Clarence Network [2,5,6]**
	Australia • 81.5% of Emergency Medicine Physicians were located in a major city or a location considered as MMM1[7] • There was an average of 6.7 clinicians per 100,000 population across Australia • New South Wales (5.5) has less Emergency Medicine Physicians compared to the national average. **NSW** • 261 Emergency Medicine Physicians work in Metropolitan Sydney (65%) • 73% of these intend to retire in the next five years • 142 Emergency Medicine Physicians work in Non-Metropolitan Sydney (35%) • 40% of these intend to retire in the next five years • There is 5.4 Emergency Medicine Physicians per 100,000 population across NSW.	• 17 Emergency Medicine Physicians practice in the Richmond Network • 2 Emergency Medicine Physicians practice in the Clarence Network • An additional 25 Emergency Medicine Physicians practice in the Tweed Byron Network • There is 11.2 Emergency medicine Physicians per 100,000 population across the Richmond Clarence Network.

New Fellows *Vocational Training*	**Australia and NSW [1,2,3,4]**	**Richmond and Clarence Network [2,5,6]**
	Australia • **New fellows:** There were 220 Emergency Medicine new fellows in 2015. The number of new fellows from the Australasian College for Emergency Medicine increased 91.3% from 2013 to 2015 (115 to 220). Overseas trained new fellows who obtained their specialist qualification outside of Australia decreased by	Richmond • Prevocational Training x3 Intern • Prevocational Training x2 RMO • Prevocational Training x5 SRMO ED • Prevocational Training x3 SRMO Critical Care

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

	30.4% from 2013 (23) to 2015 (16). In 2015, 35.9% of new fellows were female • **Vocational training:** There were 2,151 vocational trainees in 2016, an increase of 4.1% from 2013. The number and proportion of female trainees increased each year between 2013 and 2016. During this period, the number of female trainees increased by 13.4% while the number of male trainees decreased by 2.6%. **NSW** • **New fellows**: There were 75 Emergency Medicine new fellows in 2016 • **Advanced trainees**: There were 433 Emergency Medicine advanced trainees in 2017. This is an increase from 410 in 2016.	• Vocational Training x21 (Provisional and Advanced Trainees) • Vocational Training – GP Extended skill x1 (Lismore) • Vocational Training x2 (Provisional or Advanced Trainees) (Ballina) • Vocational Training – GP Extended skill x1 (Casino)

Regional Comparisons

The emergency medicine medical workforce profile in Richmond and Clarence Valleys is above, per 100,000 population, the Australian average. Richmond Valley ratio is above the Australia average whereas Clarence Valley is an area of need.

Considerations and Emerging Trends
• Strong supply of new specialists, replacing CMOs and GPs from smaller ED units.

Workforce Survey Response

- One Emergency Medicine Physician in the Richmond Network and one Emergency Medicine Physician in the Clarence Network responded to the survey.

- The Emergency Medicine Physicians report that:
    - The workforce data is consistent with their own knowledge in terms of number of Emergency Medicine Physicians and age and gender profiles in the Richmond Network but inconsistent in the Clarence Network.

Need

- There is currently a reliance on regular locum workforce for on call and clinical work in the Richmond and Clarence Networks
- There is a need for additional Emergency Medicine Physician workforce to provide better health care to smaller Emergency Department in the Richmond Network.
- Need to ensure continuous improvement in the quality of emergency care in all EDs.

Workforce Survey Implications

- The headcount ratio comparison suggests that the Richmond Network is resourced favourably (+53%) compared to the Australian average

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

- Clarence Network workforce data needs to be further investigated to clarify difference in reported head count.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

Endocrinology

Endocrinology is the study of the physiology and pathophysiology of hormones and hormone producing tissues. A minimum of 6 years of full-time training through the Royal Australasian College of Physicians is required to specialise in this area. Factsheet excludes paediatric endocrinology figures.[1]

Endocrinologists	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 622 Endocrinologists employed in Australia • 42.1% worked in the private sector • 85.9% of Endocrinologists who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 196 Endocrinologists employed in NSW • 27% worked in the private sector only while 46% worked in the public and private sectors.	• In 2018, there is one Endocrinologist practising in the Richmond Clarence Network • The Endocrinologist works at St Vincent's Lismore.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 50.6% of Endocrinologists. The average age was 52.1 years and average work hours each week was 36.2 • Females represented 49.4% of Endocrinologists and on average were 7.7 years younger and worked 5.0 fewer hours per week compared to male Endocrinologists • The total average hours for the Endocrinologist workforce was 33.8 hours per week • The age group with the highest proportion of Endocrinologists was 40-49 years. **NSW** • Females represent 51% of Endocrinologists	• The Endocrinologist is a female aged 39 years • Data on work hours is currently not available.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

	• The average age was 47.9 years and average work hours each week was 38.9 • 17.9% of the workforce are aged over 60 years.	

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 90.0% of clinicians were located in a major city or a location considered as MMM1[7] • There was an average of 2.2 Endocrinologists per 100,000 population across Australia • New South Wales has the highest proportion of Endocrinologists with 31.5%. **NSW** • 162 Endocrinologists work in Metropolitan Sydney (83%) • 61% of these intend to retire in the next five years • 34 Endocrinologists work in Non-Metropolitan Sydney (17%) • 33% of these intend to retire in the next five years • There is 2.6 Endocrinologists per 100,000 population across NSW.	• The one Endocrinologist practices in the Richmond Network • There is 0.6 Endocrinologists per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • **New fellows:** There were 66 new fellows in 2015. This is a 127.6% increase from 2013 (29). Between 2013 and 2015, female new fellows increased by 100% and male new fellows by 200%. In 2015, 35.9% of new fellows were female • **Vocational training:** There were 138 Endocrinology trainees in 2016. This is a 20% increase from 2013 (115). During this period, female trainees increased by 32.9% and male trainees decreased by 12.1%. **NSW**	• Nil

	New fellows: There were 27 Endocrinology new fellows in 2016 **Advanced trainees**: There were 43 Endocrinology advanced trainees in 2017. This is stable from 43 in 2016.	

Regional Comparisons

The endocrinology medical workforce profile in Richmond and Clarence Valleys is below, per 100,000 population, the Australian average.

Workforce Survey Response

No response received.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

Gastroenterology and Hepatology

Gastroenterology and Hepatology are branches of internal medicine concerned with the prevention, investigation, treatment of and research into illnesses involving the gastrointestinal tract and liver. It takes a minimum of 6 years of fulltime training through the Royal Australasian College of Physicians to specialise in gastroenterology and hepatology. The below excludes paediatric gastroenterology figures.[1]

Gastroenterologists	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 773 Gastroenterologists employed in Australia • 58% worked in the private sector • 94.4% of Gastroenterologists who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 227 Gastroenterologists employed in NSW • 22% worked in the private sector only while 62% worked in the public and private sectors.	• In 2018, there are 6 Gastroenterologists practising in the Richmond Clarence Network • 5 Gastroenterologists work at both Northern NSW Local Health District (NNSW LHD) and St Vincent's Lismore • 1 Gastroenterologist works at St Vincent's Lismore.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 79.3% of Gastroenterologists. The average age was 49 years and average work hours each week was 45.3 • Females represent 20.7% of Gastroenterologists and on average were 4.7 years younger and worked 7.4 fewer hours per week compared to male Gastroenterologists • The total average hours for the Gastroenterologist workforce was 43.7 hours per week • The age group with the largest proportion of Gastroenterologists was 40-49 years. **NSW**	• Males represent 83.3% of Gastroenterologists. The average age is 55.4 years • 1 female represents 16.7% of Gastroenterologists and she is aged 48 years • The age group with the largest proportion of Gastroenterologists is 40-49 years.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

	• Females represent 18.5% of Gastroenterologists • The average age was 50.5 years and average work hours each week was 45.3 • 17.8% of the workforce are aged over 60 years.	

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 91.5% of Gastroenterologists were located in a major city or a location considered as MMM1[7] • There was an average of 3.0 Gastroenterologists per 100,000 population across Australia • New South Wales has the highest proportion of Gastroenterologists with 30.6%. **NSW** • 173 Gastroenterologists work in Metropolitan Sydney (76%) • 74% of these intend to retire in the next five years • 54 Gastroenterologists work in Non-Metropolitan Sydney (24%) • 67% of these intend to retire in the next five years • There is 3.0 Gastroenterologists per 100,000 population across NSW.	• All 6 Gastroenterologists practice in the Richmond Network • An additional 2 Gastroenterologists work in the Tweed Byron Network • There is 7.6 Gastroenterologists per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • **New fellows:** There were 42 Gastroenterology new fellows in 2015. This is an increase of 7.7% from 2013 (39). 64% of the Gastroenterology new fellows in 2015 were male. • **Vocational training:** There was 129 Gastroenterology trainees in 2016. This is a 17.3% increase from 2013 (110). Female trainees increased by 40.5% whereas male trainees	Richmond • Prevocational Training x1 RMO • Vocational Training x1 AT

	increased by 5.5% between 2013 and 2016. **NSW** **New fellows**: There were 42 Gastroenterology new fellows in 2016 **Advanced trainees**: There were 53 Gastroenterology advanced trainees in 2017. This is an increase from 45 in 2016.	

Regional Comparisons

The gastroenterology and hepatology medical workforce profile for combined Richmond and Clarence Valleys are above, per 100,000 population, the Australian average. Richmond Valley ratio is above the Australia average whereas Clarence Valley is an area of need.

Considerations and Emerging Trends
• Existing programs training GPs to be prescribers of HBV and HCV anti-viral therapy. Probably small impact on public gastroenterology work load.

Workforce Survey Response

No response received.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

General Medicine

General physicians (or specialists in internal medicine) are experts in the diagnosis and management of complex, chronic and multisystem disorders. A minimum of 6 years full-time training through the Royal Australasian College of Physicians is required to specialise in this area.[1]

General Physicians	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 1,536 General Physicians employed in Australia • 42.6% worked in the private sector • 90.4% of General Physicians who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 356 General Physicians employed in NSW • 33% worked in the private sector only while 26% worked in the public and private sectors.	• In 2018, there are 13 General Physicians who work in the Richmond Clarence Network • 7 General Physicians work at Northern NSW Local Health District (NNSW LHD) • 4 General Physicians work at St Vincent's Lismore • 2 General Physicians work at NNSW LHD and St Vincent's Lismore.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 80.8% of General Physicians. The average age was 57.8 years and average work hours each week was 23.3 • Females represented 19.2% of General Physicians and on average were 7.7 years younger and worked 2.1 fewer hours per week compared to male General Physicians • The total average hours for the General Physician workforce was 22.9 hours per week • The age group with the largest proportion of General Physicians was 40-49 years. **NSW** • Females represent 16.9% of General Physicians • The average age was 61.5 years and average work hours each week was 29.5	• Males represent 76.9% of General Physicians. The average age is 59.5 years • Females represent 23.1% of General Physicians. The average is 45.7 years • The age group with the largest proportion of General Physicians is 50-59 years • Data on work hours is currently not available.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

	• 59.1% of the workforce are aged over 60 years.	

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 78.2% of General Physicians were located in a major city or a location considered as MMM1[7] • Victoria has the highest proportion of General Physicians with 28.3% followed by New South Wales with 22.3% • There was an average of 5.7 General Physicians per 100,000 population across Australia • New South Wales has the lowest ratio of General Physicians per 100,000 population (4.0). **NSW** • 228 General Physicians work in Metropolitan Sydney (64%) • 58% of these intend to retire in the next five years • 128 General Physicians work in Non-Metropolitan Sydney (36%) • 71% of these intend to retire in the next five years • There is 4.8 General Physicians per 100,000 population across NSW.	• 11 General Physicians practice in the Richmond Network • 2 General Physicians practice in the Clarence Network • An additional 8 General Physicians work in the Tweed Byron Network • There is 7.1 General Physicians per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • **New fellows:** There were 90 General Physician new fellows in 2015. This is an increase of 34.3% from 2013 (67). Of the General Physician new fellows in 2015, 66% were male • **Vocational training:** There were 596 General Physician trainees in 2016. This is a 93.5% increase from 2013 (308). Male trainees outnumbered female trainees	Richmond • Prevocational Training x3 Intern or RMO • Vocational Training x3 BPT • Unaccredited Training x3

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

	every year between 2013 and 2016. However, during this period female trainees increased by 116.8% compared to male trainees increasing by 77.6%. **NSW** **New fellows**: There were 92 General Physician new fellows in 2016 **Advanced trainees**: There were 100 General Physician advanced trainees in 2017. This is an increase from 81 in 2016.	

Regional Comparisons

The combined general physician medical workforce profile for Richmond and Clarence Valleys is above, per 100,000 population, the Australian average. Richmond Valley ratio is above the Australia average whereas Clarence Valley is below.

Considerations and Emerging Trends
• Much overlap with geriatrics.

Workforce Survey Response

- One General Physician in the Richmond Network and one General Physician in the Clarence Network responded to the survey
- The General Physicians report that:
  - The workforce data is not consistent with their own knowledge in terms of number of General Physicians and age and gender profiles:
    - Several General Physicians have left Lismore Base Hospital, left the area or have started the retirement process in the last 1–2 years
    - A new young female General Physician has commenced work in the last year
    - The remaining General Physicians are male, 60 years of age or older and are looking to reduce their work commitments
    - The General Physician workload includes endocrinology providing some additional coverage for Endocrinologists.

Need

- Urgent public sector outpatient clinic referrals are seen without delay. The average waiting time for an urgent private sector outpatient clinic referral is one month.
- The average waiting time for a non-urgent outpatient private sector outpatient clinic referral is 5-6 months with books often closed
- There is currently a reliance on regular locum workforce for on call and clinical work about 30 weeks per year
- There is a critical need for additional General Physician workforce due to:
  - Reliance on locum coverage
  - Very few General Physicians in private practice
  - Patients being referred to the Gold Coast who could be seen locally if there were sufficient General Physicians
- New trainees in General Medicine are often dual trained and wish to spend most of their time in their sub-specialty and work as Staff Specialists meaning the number of private General Physicians is getting smaller
- An adequate supply of General Physicians would reduce the need for Endocrinology as only the more complex areas would need specific coverage.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Workforce Survey Implications

- The headcount ratio comparison suggests that the Richmond Network is resourced favourably (+38%) compared to the Australian average

- In this instance, the reliance on General Physicians in regional areas may be giving the wrong impression of adequate resourcing compared to the Australian average.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).

2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.

3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).

4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).

5. Workforce data. Northern NSW Local Health District, 2018.

6. Workforce data. St Vincent's Lismore, 2018.

7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

General Practitioners

General Practitioners are often the first point of contact in matters of personal health. General Practice provides person centred, continuing, comprehensive and coordinated whole person health care to individuals and families in their communities. A minimum of three years full-time training through the Royal Australian College of General Practitioners is required to specialise in this area.[1]

General Practitioners	Australia [1,2]	Richmond and Clarence Network [2,3]
	- In 2016, there were 23,283 General Practitioners employed in Australia 90.5% worked in the private sector 96.2% of General Practitioners who completed the 2016 National Health Workforce Survey indicated they were clinicians.	In 2015, there were 185 General Practitioners practising in the Richmond Clarence Network.

Workforce Demographics	Australia [1,2]	Richmond and Clarence Network [2,3]
	- Males constituted 59.4% of General Practitioners. The average age was 55.8 years and average work hours each week was 41.1 - Females constituted 40.6% General Practitioners. On average females were 4.8 years younger and worked 9.2 fewer hours per week than male General Practitioners - The total average hours for the General Practitioner workforce was 37.4 hours per week - The age group with the highest proportion (32%) of General Practitioners were those aged 50-59 years.	- The total average hours for the General Practitioner workforce was 33.5 hours per week 16% of General Practitioners were aged 65 years or over.

Distribution	Australia [1,2]	Richmond and Clarence Network [2,3]
	74.7% of General Practitioners were located in a major city or a location considered as MMM1[4] - There was an average of 92.5 clinicians per 100,000 population across Australia - New South Wales has the highest proportion of General Practitioners with 30%.	128 General Practitioners work in the Richmond Network 57 General Practitioners work in the Clarence Network - An additional 166 General Practitioners work in the Tweed Byron Network - There is 108.6 General Practitioners per 100,000

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

New Fellows Vocational Training	Australia [1,2]	Richmond and Clarence Network [2,3]
	• **New fellows:** There were 1,310 General Practitioner new fellows in 2015. This is an increase of 10.9% from 2013 (1,181). Of the General Practitioner new fellows in 2015, 58.1% were female • **Vocational training:** There were 5,689 General Practitioner trainees in 2016. This is an increase of 36.3% from 2013 (4,174). Of the General Practitioner trainees in 2016, 61.5% were females.	• 7 GP Extended skills positions across Richmond • 1 GP Extended Skills position Clarence • AREA-WIDE GP TRAINING data is not available.

Regional Comparisons

The General Practitioner medical workforce profile in Richmond and Clarence Valleys is above the Australian average, per 100,000 population. This is true of both Richmond and Clarence Valley ratios.

Considerations and Emerging Trends

• Aging population, disadvantage and more people with long term conditions on the North Coast is expected to increase demand for General Practitioners.
• Increased supply is expected, but with existing distribution inequities to continue.

No Survey Response received.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Workforce data. GP Synergy, 2017.
4. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

General Practitioner – additional information

This section presents data on, and analysis of General Practice. The primary sources of data in this section are Health Workforce Australia, GP Synergy, North Coast Primary Health Network and Northern NSW Local Health District.

DRIVERS OF DEMAND

The aging of the Northern NSW population is well known and well documented. The Clarence Valley is expected to experience a doubling of the population aged 65 years and over within the next ten years. In the same period it is expected that Byron will experience a 42% increase; Byron, 38%; Tweed, 31%; Richmond Valley, 20%; Kyogle, 19%; and Lismore, 6%. In real numbers, rather than percentages, the largest growth is also expected to be in the Clarence Valley.

TABLE 1: POPULATION

LGA	Population size (1)	10 yr Popln. Growth (2)	% of Popln. aged under 15 (3)	10 yr popln. growth 0-14 (4)	% of popln. aged over 65 (5)	10 yr popln. growth 65+ (6)	Aboriginal count and % (7)
Ballina	41,828	2.6%	16.9%	-3.1%	23.2%	38.3%	1,642 (3.9%)
Byron	32,723	8.1%	18.1%	-6.0%	15.3%	42.4%	737 (2.2%)
Clarence Valley	51,040	-0.3%	17.2%	-32.0%	23.7%	52.0%	3,572 (7.1%)
Kyogle	9,537	5.4%	17.6%	-9.7%	21.3%	19.1%	612 (6.6%)
Lismore	44,741	4.4%	18.3%	-10.5%	16.3%	5.6%	2,466 (5.5%)
Richmond Valley	23,181	-2.5%	19.8%	24.0%	21.3%	20.4%	1,957 (8.3%)

In terms of the Aboriginal population, the largest population is in the Clarence Valley followed by Lismore and Richmond Valley.

Another driver of demand, and contributor to risk factors associated with chronic disease, is measured by the Index of Related Socio-economic Disadvantage. A score of 1000 constitutes the Australian average.

Richmond (899.5) and Clarence (919.4) Valleys and Kyogle (907.1) are the most disadvantaged Norther NSW regions. These three regions, as noted in the table below, have the highest rates of early school leavers, vulnerable children, jobless families and disability.

TABLE 2: SOCIAL AND ECONOMIC FACTOR

LGA	SEIFA -IRSD (8)	Early School Leaver (9)	Vulnerable children % (10)	Jobless families % (11)	Disability % (12)
Ballina	988.7	41.5	15.4%	14.4%	5.7%
Byron	976.6	33.2	17.1%	18.4%	4.5%
Clarence Valley	919.4	49.8	18.7%	24.3%	7.6%
Kyogle	907.1	49.2	16.0%	27.8%	6.7%
Lismore	952.7	44.9	21.7%	19.8%	5.8%
Richmond Valley	899.5	53.7	27.4%	24.9%	7.3%

There are other indicators of disadvantage such as lack of transport, and other barriers preventing access to healthcare, and in these terms Richmond Valley, the Clarence Valley, and Kyogle manifest the greatest disadvantage. These indicators are not included in the Index of Related Socio-economic Disadvantage, as the method used to estimate these indicators is not robust. They therefore provide only a general and broad indication of the level of disadvantage.

The table below presents a sample of chronic disease risk factors.

TABLE 3: CHRONIC DISEASE RISK FACTORS

LGA	Current smoking (13)	Risky alcohol consumption (14)	Risk factors (15)	Obese children (16)
Ballina	17.2	22.9	78.8	6.1
Byron	19.4	31.6	76.4	6.2
Clarence Valley	21.3	18.4	85.5	8.3
Kyogle	23.3	22.4	88.6	9.0
Lismore	18.5	24.3	82.6	7.6
Richmond Valley	25.9	19.7	88.5	9.4
State average	15.8	16.6	77.8	7.6

Currently 15.8% of the NSW population smoke. All the Local Government Areas (LGA) in Northern NSW have higher rates of smoking than this state average. The LGAs with the highest rates of smoking are Richmond Valley (26%), Kyogle (23%), and the Clarence Valley (21%). These three LGAs also have the highest rates of risky alcohol drinking, chronic disease risk factors and obese children, all of which are significantly higher than the state average.

These risk factors for ill health, when combined with socio-economic factors, highlight and contribute to the need for primary and secondary health care, and clinicians, especially General Practitioners.

The table below presents cancer screening and incidence rates. Caution should be exercised in interpretation of these data. It could be argued that the relationship between these rates and demand for medical workforce is tenuous. However, they are presented to highlight the need for access to primary care.

TABLE 4: CANCER SCREENING AND INCIDENCE RATES

LGA	Bowel cancer screening % (17)	Breast cancer screening % (18)	Cervical cancer screening % (19)	Bowel cancer incidence % (20)	Positive screening yield, Breast cancer % (21)	Cervical cancer incidence (22)
Ballina	34.4%	66.4%	66.2%	8.0%	68%	11.1
Byron	30.7%	45.8%	73.8%	6.9%	61.6%	12.9
Clarence Valley	35.2%	61.7%	56.0%	6.8%	73%	13.4
Kyogle	32.5%	57.5%	58.1%	5.9%	"No Data"	14.3
Lismore	31.2%	63.6%	56.3%	5.1%	42.6%	9.5
Richmond Valley	32.2%	64.8%	56.8%	7.9%	73.1%	11.0
State average	30.9%	51.2%	56.4%	7.1%	61.9%	11.2

The data presented below are estimates of rates derived from the Australian Bureau of Statistics (ABS) Australian Health Survey and are markers of demand for General Practice and primary health care services.

As noted above, care should be taken in comparing these rates and in using them to generate a narrative. Please see page 13 and 14 for definitions and calculation methods. While this data is presented as a guide, as it is the only data available, it is not used in the analysis of medical workforce need.

As presented in the table below the overall percentage of adults with diabetes mellitus in Northern NSW is below the state average. However, this could be due to survey sampling issues.

TABLE 5: Chronic Disease and Psychological Distress

LGA	% Adults Diabetes mellitus (23)	% Adults respiratory diseases (24)	Asthma (25)	Mental and behavioural problems (26)	Psychological distress (27)
Ballina	4.5	32.2	12.8	14.6	9.8
Byron	4.6	31	12	15.3	9.5
Clarence Valley	5	29	12.3	16.2	12.5
Kyogle	4.9	31.7	11	15.4	12.9
Lismore	4.6	31.8	12.2	15.6	12.6
Richmond Valley	5.5	32.5	12.3	16.2	14.8
State average	5.7	27.6	9.64	13.2	11

Of all the regions in Northern NSW, Richmond and Clarence Valleys have the highest rates of adult diabetes mellitus followed by Kyogle. It comes as no surprise, in light of the higher rates of smoking, that Northern NSW has above state average rates of respiratory ailment. The same trend is observed for mental health concerns, and psychological distress. The Richmond Valley population experiences these health problems at the highest rates.

Current General Practice Distribution

In most regions in Northern NSW there is a good spread of General Practitioners. The table below presents the General Practitioner head count and full time equivalent (FTE). Full time equivalent is the total clinical hours worked by GPs each week, where 1 FTE constitutes 40 hours.

TABLE 6: GP HEADCOUNT AND FTE

LGA	Population size	Total GPs headcount (28)	GP Clinical FTEs (29)	Total practices (30)	People per GP (31)	People per GP FTE (32)
Ballina	41,828	66	47.5	16	633.8	880.6
Byron	32,723	66	47.3	14	495.8	692.2
Clarence Valley	51,040	57	53.9	18	895.4	947.8
Kyogle	9,537	6	9.0	1	1,589.5	1,059.7
Lismore	44,741	39	36.3	17	1,147.2	1,234.2
Richmond Valley	23,181	17	16.4	8	1,363.6	1,411.3
State average					1126	1236

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

In examining these numbers and ratios, it is important to note that a small proportion of General Practitioners are not practicing as regular GPs as they work in specialist and subspecialist clinics such as skin, sexual health, integrated medicine or opioid treatment clinics. This is more prevalent in some LGAs than others. For example, this is more noticeable in Byron and Ballina. Furthermore, in some regions with high tourist populations, particularly regions with coastal towns, while the ratio of GP FTE / 1000 population is high, these GPs provide services to a large tourist population, but the tourists are not included in the calculation of resident population.

The graph below presents the GP headcount and FTE across the Northern NSW LGAs.
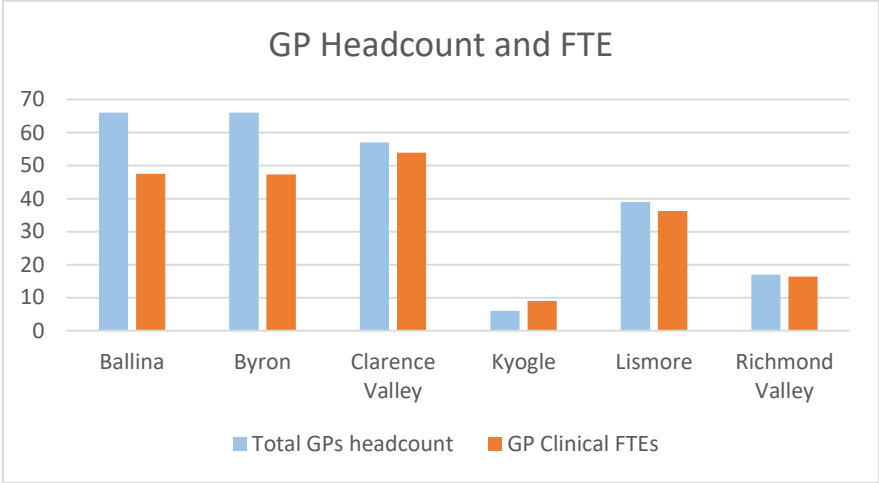
The observable trend in all LGAs is that the GP headcount is higher than the GP FTE. This demonstrates that most GPs select to work less than 40 hours per week. The exception is Kyogle where the six GPs account for nine FTEs. The implications seem to be that each practitioner in Kyogle works about 60 hours a week compared to GPs in Ballina and Byron who average about 30 hours per week. The graph below presents the number of people per GP by region (headcount and FTE).
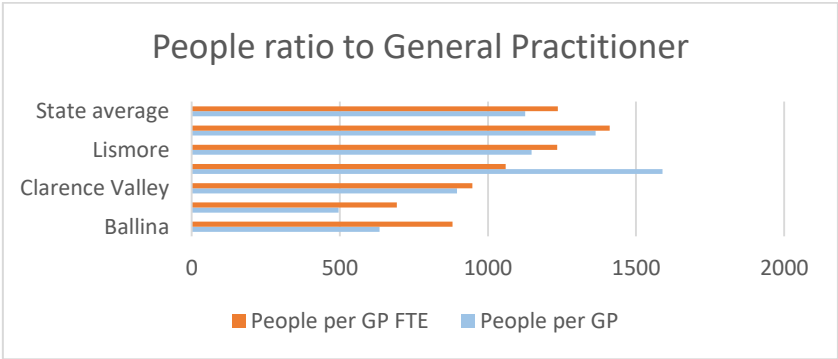
The ratio of residents to General Practitioner would seem to have direct bearing on the hours worked by GPs, as presented in the previous table.

In Kyogle there is 1 GP headcount for 1600 residents compared to 1 GP headcount for 500 and 630 residents in Byron and Ballina respectively.

The ratio of GP FTE / 1000 population in Kyogle is considerably lower than the ratio of GP head count /1000 population due to the hours General Practitioners in that area work. This could potentially make General Practitioners in Kyogle vulnerable.

The table below presents the age profile of General Practitioners.

TABLE 7: GP AGE PROFILE AND RETIREMENT INTENTION

LGA	Total GPs headcount	GPs 55+ headcount (33)	GPs 55+ Solo Practice headcount (34)	GPs 65+ headcount (35)	GPs 65+ Solo Practice headcount (36)	Years Intending to work - 0–2 % (37)	Years Intending to work - 0-10 % (38)
Ballina	66	20	0	6	0	12.1%	48.5%
Byron	66	33	11	10	5	10.6%	47.0%
Clarence Valley	57	31	6	14	3	14.0%	52.6%
Kyogle	6	0	0	0	0	0.0%	50.0%
Lismore	39	18	3	6	3	7.7%	46.2%
Richmond Valley	17	7	3	3	0	0.0%	58.8%
State average						3.9%	35.2%

The highest proportion of General Practitioners aged over 55 years, and aged over 65 years, are in the Clarence Valley. Over 50% of the Clarence Valley GPs are older than 55 years and about 25% are older than 65 years.
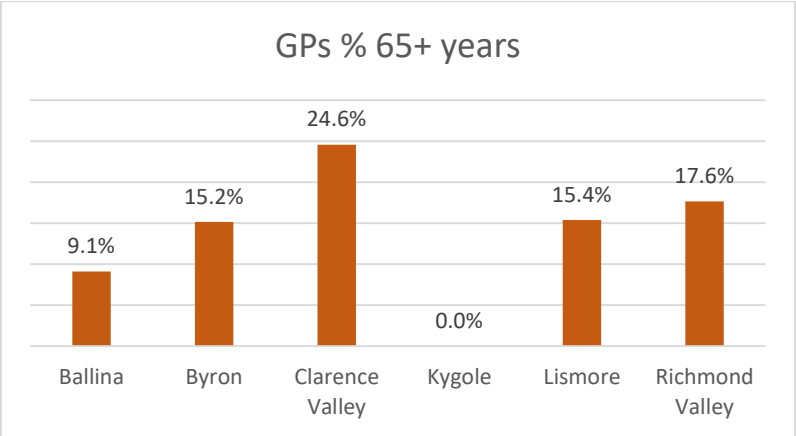
As noted above, the Richmond Valley and Lismore have the next highest proportions of practitioners aged over 65 years. Clarence Valley, Richmond Valley and Lismore also constitute LGAs with the highest need for General Practitioners.

The graph below presents the retirement intentions of General Practitioners.
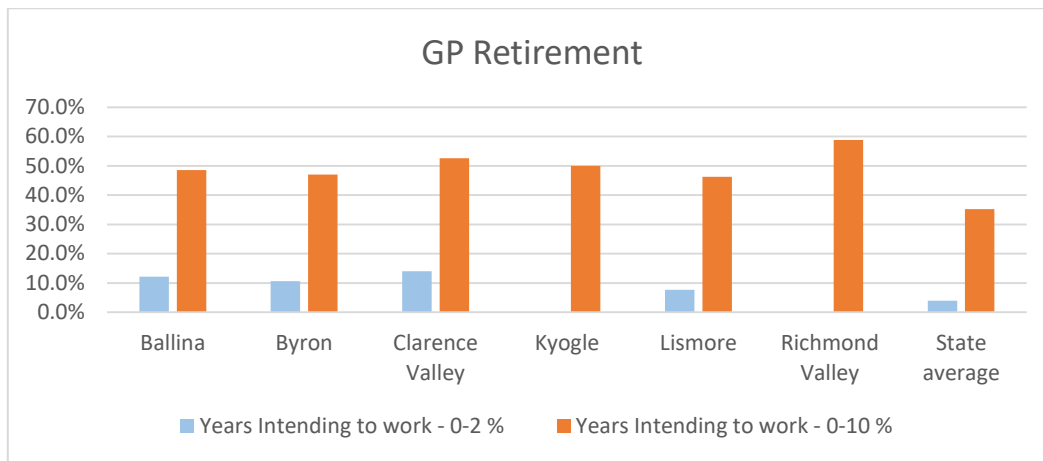
GP Retirement

There is a higher proportion of GPs in Northern NSW intending to retire in the near future than the state average.

Richmond Valley has the highest proportion of GPs with the intention to retire in the next 10 years, though no GPs intend to retire in the next two years.

Clarence Valley is the LGA with the highest ratio of GPs intending to retire in the next two years. It also has the second highest number of GPs intending to retire within the next ten years.

Kyogle General Practitioners are all under 55 years old. Half of these intend to retire within 10 years. No GP in Kyogle has expressed an intention to retire in the next two years.

TRAINING: REGISTRAR PLACEMENT

Between January 2018 and December 2018, there were 454 GP registrar placements (headcount) on the North Coast (Tweed Heads to Port Macquarie).

These registrars were placed in the following facilities

General Practices	328
Hospitals	92
Aboriginal Medical Services	33
Specialist Practices	1

The placement of registrars is presented in the map below.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN
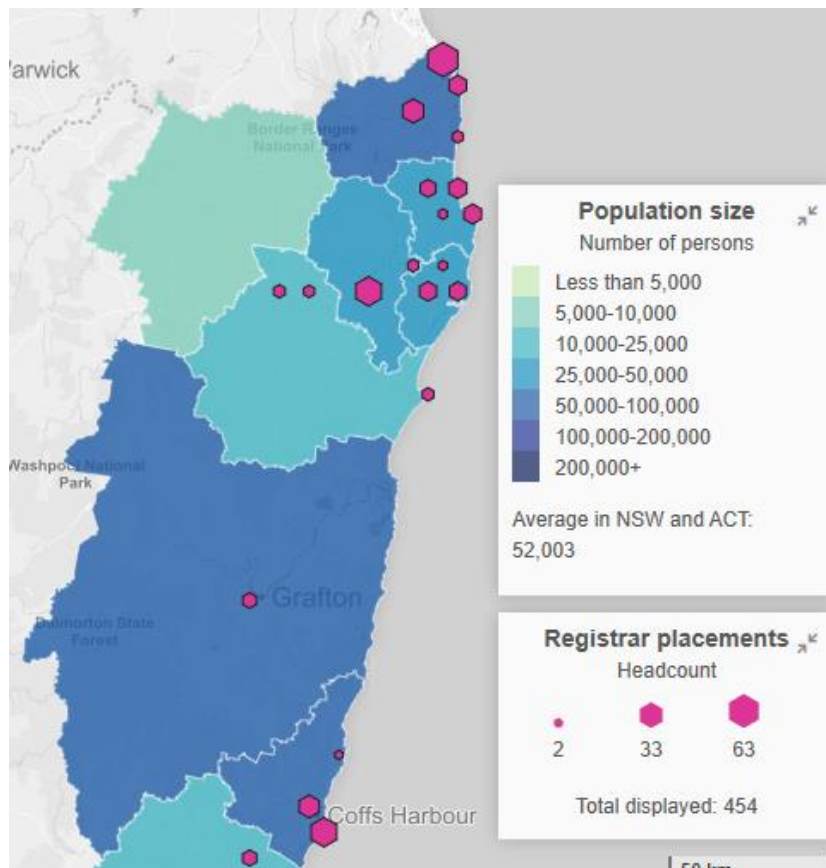
Experience has shown that placement of registrars has an impact on possible recruitment and retention of General Practitioners. Some LGAs with the greatest need for GPs, (Clarence and Richmond Valleys and Kyogle) have fewer accredited practices providing training.

GP Synergy organises GP registrar training in training subregions, of which North Coast is one.

The sub-regions are categorised into three groups that reflect the need for GP registrars. These are:
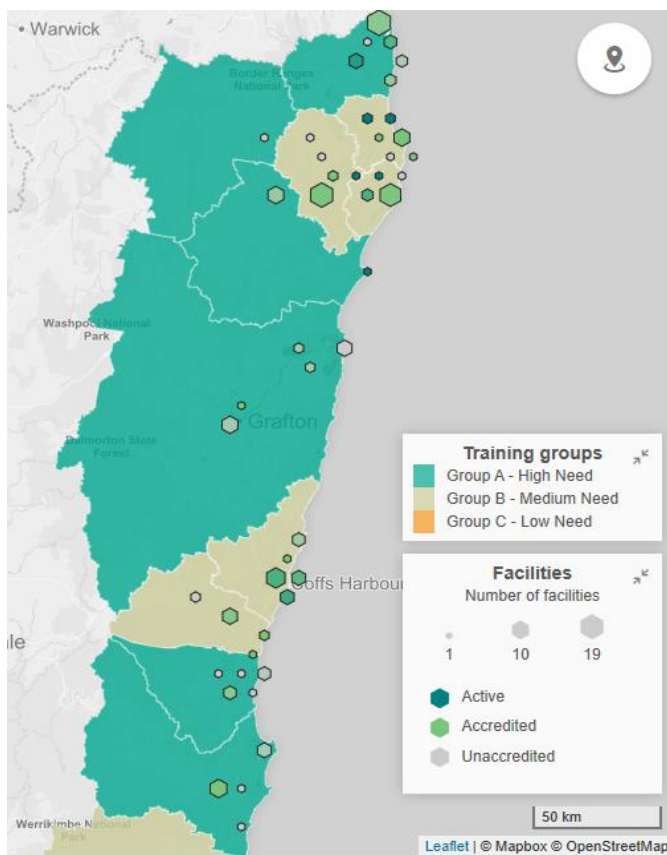
Group A = high need for GP registrars;

Group B = moderate need for GP registrars;

Group C = low need for GP registrars.

In 2018 the following grouping allocation was made on the North Coast.

Group A: 171

Group B: 254

Group C: 4

Unclear: 33

While the intention is to have a higher proportion of registrars placed in high need areas (Group A), this is not always possible because of the unavailability of training facilities.

In some cases, even where there are accredited facilities, active training cannot be provided, for various reasons.

The following map presents the training facilities on the North Coast for 2018 – 2020. The facilities map shows the accreditation status and activity of facilities over time.

Population size
Number of persons

Less than 5,000
5,000-10,000
10,000-25,000
25,000-50,000
50,000-100,000
100,000-200,000
200,000+

Average in NSW and ACT:
52,003

Facilities
Number of facilities

1   14   26

Active

Accredited

Unaccredited

Total displayed: 218

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN
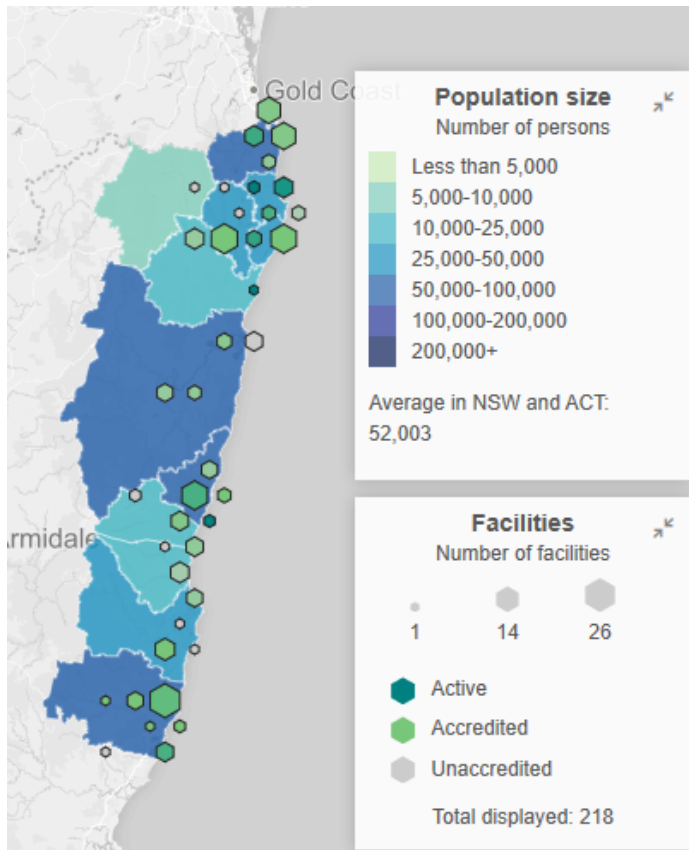
The Table below presents the number of accredited practices, breaking this down by practices that are actively training and those that are not.

TABLE 8. TRAINING ACCREDITED AND ACTIVE PRACTICES

LGA	Total practices	Total Accredited practices (39)	Practices actively training (40)	Accredited practices not training (41)	% Accredited practices actively training (42)	% total practices Accredited (43)
Ballina	*16*	*9*	*5*	*4*	*55.6%*	*56.3%*
Byron	*14*	*11*	*9*	*2*	*81.8%*	*78.6%*
Clarence Valley	*18*	*6*	*2*	*4*	*33.3%*	*33.3%*
Kyogle	*1*	*0*	*0*	*0*	*NAP*	*0%*
Lismore	*17*	*9*	*8*	*1*	*88.9%*	*52.9%*
Richmond Valley	*8*	*3*	*3*	*0*	*100%*	*37.5%*
State average					*68.9%*	*39.5%*

As capacity for training is developed in areas of greatest need by supporting current practices to become active training sites, or supporting those that are accredited practices to take on more registrars - the likelihood increases of addressing the current GP shortage and distribution challenges.

A model that has been implemented in Hunter region of NSW is worthy of exploration. In this model a consortium of a few Practices, working as a not for profit, has established a training arrangement which has resulted in an increase in registrar training. This and other models are worthy of examination and adoption.

Definitions and Methods

1. Population size, 2015 Estimated Resident Population (ERP) Projections, PHIDU Social Health Atlas Data by PHN Published: June 2017 (Source GP Synergy Informatics)
2. 10 year population growth, projected 10 year increase in the population as a percentage of the 2015 population, calculated by Synergia using PHIDU (Public Health Information Development Unit) data
3. % of population aged under 15, 2015 Estimated Resident Population, percentage of population aged 0-14 years, PHIDU Social Health Atlas Data by PHN, Published: June 2017
4. 10 year population growth 0-14, Projected 10 year increase in the population aged 0-14 years as a percentage of the 2015 population aged 0-14 years calculated by Synergia using PHIDU data 2012, 2015ABS Estimated Resident Population
5. % of population aged over 65, 2015 Estimated Resident Population - percentage of population aged over 65 years PHIDU Social Health Atlas Data by PHN Published: June 2017, 2015 ABS Estimated Resident Population
6. 10 year population growth 65+, Projected 10 year increase in the population aged over 65 years as a percentage of the 2015 population aged over 65 years calculated by Synergia using PHIDU data 2012, 2015 ABS Estimated Resident Population
7. Aboriginal count - number of Aboriginal and Torres Strait Islander persons; Aboriginal % - number of Aboriginal and Torres Strait Islander persons as a percentage of the whole population, 2016 estimated resident population, PHIDU Social Health Atlas Data by PHN Published: June 2017
8. SEIFA (IRSD), SEIFA Index of Relative Socio-economic Disadvantage (IRSD). Index score (based on Australian score of 1000) PHIDU Social Health Atlas Data by PHN Published: June 2017
9. Early School Leaver - Number of persons aged 15 and over who left school at Year 10 or below, or did not go to school expressed as an age-standardised rate per 100 population   PHIDU Social Health Atlas Data by PHN Published: June 2017

10. Vulnerable children % - Percentage of children who were developmentally vulnerable (0 to 10th percentile) on one or more domains concerning physical health and wellbeing, PHIDU Social Health Atlas Data by PHN Published: June 2017

11. Jobless families % - Percentage of Jobless families with children aged less than 15 years, PHIDU Social Health Atlas Data by PHN Published: June 2017

12. Disability % - Percentage of population with a profound or severe disability (includes people in long-term accommodation), All ages PHIDU Social Health Atlas Data by PHN Published: June 2017

13. Current smoking - Estimated number of people aged 18 years and over who were current smokers, expressed as an age-standardised rate per 100 population, PHIDU Social Health Atlas Data by PHN Published: June 2017

14. Risky alcohol consumption - Estimated number of people aged 15 years and over who consumed more than two standard alcoholic drinks per day on average, expressed as an age-standardised rate per 100 population, PHIDU Social Health Atlas Data by PHN Published: June 2017

15. Risk factors - Estimated number of people aged 18 years and over with one of four risk factors (current smokers, high risk alcohol, obese, no or low exercise in the previous week), expressed as an age-standardised rate per 100 population, PHIDU Social Health Atlas Data by PHN Published: June 2017

16. Obese children - Estimated number of children aged 2-17 years who were obese, expressed as an age-standardised rate per 100 population, PHIDU Social Health Atlas Data by PHN Published: June 2017

17. Bowel cancer screening % - Number of persons who participated in the National Bowel Cancer Screening Program (NBCSP) expressed as a percentage of those who were invited, PHIDU Social Health Atlas Data by PHN Published: June 2017

18. Breast cancer screening % - Breast cancer screening participation, the actual number of women aged 50 to 69, screened as a percentage of the average of the ABS Estimated Resident Population for the two corresponding calendar years, PHIDU Social Health Atlas Data by PHN Published: June 2017, BreastScreen Australia

19. Cervical cancer screening % - Cervical cancer screening participation, the actual number of women aged 20 to 69, screened as a percentage of the average of the ABS Estimated Resident Population for the two corresponding calendar years, PHIDU Social Health Atlas Data by PHN Published: June 2017, State health departments

20. Bowel cancer incidence % - Percentage of persons who had a positive NCBSP test result out of those who were screened, PHIDU Social Health Atlas Data by PHN Published: June 2017

21. Breast cancer incidence % - Number of women aged 20 to 69 who were diagnosed with breast cancer over a 24 month period expressed as an age-standardised rate per 10,000 women screened, PHIDU Social Health Atlas Data by PHN Published: June 2017, BreastScreen Australia

22. Cervical cancer incidence - Number of women aged 50 to 69 with a high-grade cervical cancer abnormality expressed as an age-standardised rate per 1,000 women screened, PHIDU Social Health Atlas Data by PHN Published: June 2017

23. Breast cancer incidence % - Number of women aged 20 to 69 who were diagnosed with breast cancer over a 24 month period expressed as an age-standardised rate per 10,000 women screened, PHIDU Social Health Atlas Data by PHN Published: June 2017, BreastScreen Australia

24. Diabetes mellitus - Estimated number of people aged 18 years and over with diabetes mellitus expressed as an age-standardised rate per 100 population, PHIDU Social Health Atlas Data by PHN Published: June 2017

25. Respiratory diseases - Estimated number of people with respiratory system diseases, expressed as an age-standardised rate per 100 population, PHIDU Social Health Atlas Data by PHN Published: June 2017

26. Asthma - Estimated number of people with asthma, expressed as an age-standardised rate per 100 population, PHIDU Social Health Atlas Data by PHN Published: June 2017

27. Mental and behavioural problems - Estimated number of people with mental and behavioural problems, expressed as an age-standardised rate per 100 population, PHIDU Social Health Atlas Data by PHN Published: June 2017

28. Psychological distress - Estimated number of people aged 18 years and over with high or very high psychological distress, based on the Kessler 10 Scale (K10), expressed as an age-standardised rate per 100 population, PHIDU Social Health Atlas Data by PHN Published: June 2017

29. Total GPs headcount - Total number of GPs, Health Workforce Australia

30. GP Clinical FTEs - Total Clinical hours' worked by all GPs each week / 40 (40 hours = 1 full time equivalent workload) calculated by Synergia using PHIDU and Health Workforce Australia data, 2015

31. Total practices- The number of practices in each LGA, July 2017 National Health Services Directory (Health Direct)

32. People Per GP - Number of people in the population for each GP

33. GPs 55+ headcount - Number of GPs aged 55 years and older, Health Workforce Australia 2015

34. GPs 55+ Solo Practice headcount - Number of GPs aged 55 years and older who are working in a solo private practice, Health Workforce Australia 2015

35. GPs 65+ headcount - Number of GPs aged 65 years and older Health Workforce Australia, 2015

36. GPs 65+ Solo Practice headcount - Number of GPs aged 65 years and older who are working in a solo private practice, Health Workforce Australia 2015

37. Years Intending to work - 0–2 % - The percentage of GPs intending to work between 0–2 more years as a percentage of all GPs, Health Workforce Australia, 2015

38. Years Intending to work - 0-10 % - The percentage of GPs intending to work between 0-10 more years as a percentage of all GPs, Health Workforce Australia , 2015

39. Total Accredited practices -The number of practices who were accredited to deliver training between Jan 2017 and Jul 2017, RTO facilities and registrar placements data July 2017, Extracts from relevant RTO facilities and registrar database

40. Practices actively training - The number of practices who delivered at least some training to registrars between Jan 2017 and Jul 2017, RTO facilities and registrar placements data July 2017, Extracts from relevant RTO facilities and registrar database

41. Accredited practices not training - The number of practices who are accredited to deliver training, but didn't between Jan 2017 and Jul 2017, Extracts from relevant RTO facilities and registrar database

42. Proportion of Accredited practices actively training - The proportion of practices who delivered some training between Jan 2017 and Jul 2017, out of all of the practices accredited to deliver training, Extracts from relevant RTO facilities and registrar database

43. Proportion of total practices Accredited - The proportion as who delivered some Accredited between Jan 2017 and Jul 2017, RTO facilities and registrar placements data plus National Health Services Directory (Health Direct) July 2017.

General Surgery

General Surgery is the basic core specialty within the discipline of surgery and is the broadest of the surgical specialties. The General Surgeon is a surgical specialist engaged in the comprehensive care of surgical patients and in some situations the General Surgeon may require knowledge of the whole field of surgery. It takes five years full-time training through the Royal Australasian College of Surgeons to specialise in general surgery.[1]

General Surgeons	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 1,814 General Surgeons employed in Australia • 57.1% worked in the private sector • 94.0% of General Surgeons who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 521 General Surgeons employed in NSW • 20% worked in the private sector only while 66% worked in the public and private sectors.	• In 2018, there are 12 General Surgeons practising in the Richmond Clarence Network • All General Surgeons work at Northern NSW Local Health District (NNSW LHD) and St Vincent's Lismore • A General Surgeon at St Vincent's Lismore also works as a Vascular Surgeon at NNSW LHD.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 85.6% of General Surgeons. The average age was 54.7 years and average work hours each week was 40.8 per week • Females represented 14.4% of General Surgeons and on average were 9 years younger and worked 1.5 fewer hours per week compared to male General Surgeons • The total average hours for the General Surgeon workforce was 41 hours per week. **NSW** • Females represent 12.7% of General Surgeons • The average age was 53.8 years and average work hours each week was 45.6	• Males represent 58.3% of General Surgeons. The average age is 53.6 years • Females represent 41.7% of General Surgeons. The average age is 43 years • Data on work hours is currently not available.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

	• 35.2% of the workforce are aged over 60 years.	

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 78.4% of clinicians were located in a major city or a location considered as MMM1[7] • There is 7.1 General Surgeons per 100,000 population across Australia • New South Wales has the highest number of General Surgeons with 33.3%. **NSW** • 350 General Surgeons work in Metropolitan Sydney (67%) • 62% of these intend to retire in the next five years • 171 General Surgeons work in Non-Metropolitan Sydney (33%) • 76% of these intend to retire in the next five years • There is 7.0 General Surgeons per 100,000 population across NSW.	• 9 General Surgeons practice in the Richmond Network (43%) • 3 General Surgeons work in the Clarence Network • An additional 9 General Surgeons work in the Tweed Byron Network • There is 7.0 General Surgeons per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • **New fellows:** There were 70 General Surgeon new fellows in 2015. The number of female General Surgeon new fellows increased by 33.3% and males increased by 11.1% between 2013 and 2015 • **Vocational training:** The number of General Surgeon trainees in 2016 was 425. This is an 18.4% increase from 2013 (359). **NSW** • **New fellows**: There were 25 General Surgery new fellows in 2016 • **Advanced trainees**: There were 152 General Surgery advanced trainees in 2017.	**Richmond** • Prevocational Training x 4 Intern or RMO • Vocational Training x 4 SET • Additional Vocational Training x 1 SET (2020) • Unaccredited Training x 1

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

	This is a decrease from 159 in 2016.	

Regional Comparisons

The general surgery medical workforce profile in Richmond and Clarence Valleys is in line, per 100,000 population, with the Australian average. Clarence Valley is below the Australia average by greater than 20%.

Considerations and Emerging Trends
Gradual displacement by sub-specialised surgery

Workforce Survey Response

No response received.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

Geriatric Medicine

A Geriatrician has expertise in the diagnosis and management of complex and multifactorial internal medicine disorders that impact upon the cognition and functional status of older individuals. A minimum of six years full-time training is required through the Royal Australasian College of Physicians to specialise in this area.[1]

Geriatricians	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 619 Geriatricians employed in Australia • 19.6% worked in the private sector • 95.0% of Geriatricians who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 193 Geriatricians employed in NSW • 9% worked in the private sector only while 32% worked in the public and private sectors.	• In 2018, there are 3 Geriatricians practising in the Richmond Clarence Network • 1 Geriatrician works at Northern NSW Local Health District (NNSW LHD) • 2 Geriatricians work at St Vincent's Lismore.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 57% of Geriatricians. The average age was 49.9 years and average work hours each week was 38.2 per week • Females represented 43% of Geriatricians and on average were 4.5 years younger and worked 5.9 fewer hours per week compared to male clinicians • The total average hours for the Geriatrician workforce was 35.6 hours per week • The age group with the largest proportion of Geriatricians was 40-49 years. **NSW** • Females represent 42.5% of Geriatricians • The average age was 49.2 years and average work hours each week was 39.7	• Males represent 33.3% of Geriatricians. The average age is 67 years • Females represent 66.7% of Geriatricians and on average were 16 years younger than male Geriatricians • Data on work hours is currently not available.

	• 16.5% of the workforce are aged over 60 years.	

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 87.6% of clinicians were located in a major city or a location considered as MMM1[7] • There is 2.4 Geriatricians per 100,000 population across Australia • New South Wales has the highest proportion of Geriatricians with 33%. **NSW** • 143 Geriatricians work in Metropolitan Sydney (74%) • 60% of these intend to retire in the next five years • 50 Geriatricians work in Non-Metropolitan Sydney (26%) • 44% of these intend to retire in the next five years • There is 2.6 Geriatricians per 100,000 population across NSW.	• All 3 Geriatricians practice in the Richmond Network • An additional 2 Geriatricians practice in the Tweed Byron Network • There is 1.8 Geriatricians per 100,000 population across Richmond Clarence Network.

New Fellows *Vocational Training*	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • **New fellows:** There were 59 Geriatrician new fellows in 2015. This is an increase of 47.5% from 2013 (40). Between 2013 and 2015, female Geriatrician new fellows increased by 70.6% and males by 30.4%. Vocational training: There were 266 Geriatrician trainees in 2016. This is an increase of 51.1% from 2013 (175). Between 2013 and 2016, female Geriatrician trainees increased by 94.4% and males by 5.8%. **NSW** • **New fellows**: There were 57 Geriatric new fellows in 2016 • **Advanced trainees**: There were 87 Geriatric advanced trainees in 2017. This is an increase from 85 in 2016.	Richmond • Prevocational Training x 1 Intern or RMO • Vocational Training x 1 BPT • Vocational Training x 1 AT

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Regional Comparisons

The Geriatric medical workforce profile in Richmond and Clarence Valleys is below, per 100,000 population, the Australian average. Richmond Valley ratio is in line with the Australia average whereas Clarence Valley is an area of need.

Considerations and Emerging Trends
• Increase in demand is expected with the aging population and disadvantage and the related lifestyle risk factors.

Workforce Survey Response

No response received.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

Intensive Care Medicine

An Intensive Care Medicine specialist is trained to be a leader of a multidisciplinary team proficient in the comprehensive clinical management of critically ill patients. Intensive care medicine specialists have clinical skills to manage severe medical, surgical, obstetric and paediatric illnesses and the skills to treat the conditions that cause them. A minimum of six years full-time training through the College of Intensive Care Medicine of Australia and New Zealand is required to specialise in this area.[1]

Intensivists	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 756 Intensivists employed in Australia • 19.7% worked in the private sector • 89.4% of Intensivists who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 195 Intensivists employed in NSW • 8% worked in the private sector only while 14% worked in the public and private sectors.	• In 2018, there are five Intensivists practising in the Richmond Network • All Intensivists work at Northern NSW Local Health District (NNSW LHD) • One Intensivist also works as an Anaesthetist at St Vincent's Lismore. • Survey response: There are six Intensivists working in the Richmond Network, one Richmond Network Intensivist also works in the Clarence Network and there are three visiting Intensivists employed in the Clarence Network.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 83% of Intensivists. The average age was 48.7 years and average work hours each week was 43.6 • Females represented 17% of Intensivists and on average were 3.7 years younger and worked 0.9 fewer hours per week compared to male Intensivists • The total average hours for the Intensive Care Medicine workforce was 43.4 hours per week • The age group with the largest proportion of Intensivists was 40-49 years. **NSW** • Females represent 19% of Intensivists	• Males represent 60% of Intensivists. The average age is 57 years • Females represent 40% of Intensivists. The average age is 51 years • Data on work hours is currently not available.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

	• The average age was 48.6 years and average work hours each week was 52.6 • 12.8% of the workforce are aged over 60 years.	

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 84.5% of Intensivists were located in a major city or a location considered as MMM1[7] • There was an average of 2.8 Intensivists per 100,000 population across Australia • The jurisdiction with the highest number of clinicians was • New South Wales has the largest proportion of Intensivists with 28.9% but along with Victoria has the lowest ratio of 2.5 clinicians for every 100,000 population. **NSW** • 139 Intensivists work in Metropolitan Sydney (71%) • 75% of these intend to retire in the next five years • 56 Intensivists work in Non-Metropolitan Sydney (29%) • 67% of these intend to retire in the next five years • There is 2.6 Intensivists per 100,000 population across NSW.	• Of all the Intensivists practising in the NNSW LHD footprint, 8 practice in the Tweed Byron Network (61%) • 5 Intensivists practice in the Richmond Network (38%) • There is 2.9 Intensivists per 100,000 population across Richmond Clarence Network.

New Fellows Vocation Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • **New fellows**: There were 48 new fellows from the College of Intensive Care Medicine of Australia and New Zealand in 2015. This is a 7.7% decrease from 2013 (52) • Overseas trained new fellows who obtained their specialist qualification outside of Australia decreased 20% between 2013 to 2015 (5 to 4 new fellows)	Richmond • Prevocational Training x 2 RMO • Prevocational Training x 1 SRMO • Vocational Training x 4

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

	- The number of female new fellows in 2015 (20) was 25% higher than the number in 2013 (16). The number of males was 22.2% less in 2015 compared to 2013 (from 36 to 28) **Vocational training:** There were 485 Intensive Care Medicine trainees in 2016 compared to 480 in 2013. Female trainee decreased by 33.7% between 2013 and 2016 while male trainee numbers increased by 20.5%. **NSW** **New fellows**: There were 13 Intensive Care new fellows in 2016 **Advanced trainees**: There were 136 Intensive Care advanced trainees in 2017. This is an increase from 102 in 2016.	

Regional Comparisons

The intensive care medicine medical workforce profile in Richmond and Clarence Valleys is in line, per 100,000 population, with the Australian average. Richmond Valley ratio is above the Australia average whereas Clarence Valley is below.

Considerations and Emerging Trends
• Would be impacted by any expansion of more complex surgery, e.g. liver or thoracic

Workforce Survey Response

- One Intensivist in the Richmond Network responded to the survey
- The Intensivist reports that:
  - There are now six Intensivists working in the Richmond Network, one Richmond Network Intensivist also works in the Clarence Network and there are now three visiting Intensivists employed in the Clarence Network.

Need

- There is currently no reliance on regular locum workforce. About one or two weeks per year locums are required for on call and clinical work
- More beds will be available in 2020 but it is not clear how many will be commissioned. More Intensivists will be required if 12 beds or more are commissioned.
- Upper Gastrointestinal Tract surgery, pelvic surgery and more complex vascular surgery could be performed locally if there was a greater Intensivist workforce
- Lismore Base Hospital is lacking in some key specialties such as Ear, Nose and Throat. There have also been recent declines in Interventional Radiology and Gastroenterology Endoscopic Retrograde Cholangiopancreatography (ERCP) services.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Workforce Survey Implications

- Additional workforce needs are highlighted that might be required should new beds be opened and expansion of services occur.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

Medical Oncology

A Medical Oncologist is a consultant physician who specialises in the investigation, study, diagnosis, management and treatment of benign and malignant growths, tumours, cancers and diseases. A minimum of six years full-time training through the Royal Australasian College of Physicians is required to specialise in this area.[1]

Medical Oncologist	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 568 Medical Oncologists employed in Australia • 29.8% worked in the private sector • 88.7% of Medical Oncologists who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 148 Medical Oncologists employed in NSW • 18% worked in the private sector only while 45% worked in the public and private sectors.	• In 2018, there are four Medical Oncologists practising in the Richmond Clarence Network • All Medical Oncologists work at Northern NSW Local Health District and St Vincent's Lismore.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 60.9% of Medical Oncologists. The average age was 48 years and average work hours each week was 45.5 • Females represented 39.1% of Medical Oncologists and on average were 4.5 years younger and worked 8.5 fewer hours per week compared to male Medical Oncologists • The total average hours for the Medical Oncologist workforce was 42.2 hours per week. **NSW** • Females represent 42.6% of Medical Oncologists • The average age was 45.3 years and average work hours each week was 44.3	• Males represent 75% of Medical Oncologists. The average age is 44 years • There is one female Medical Oncologist (25%) and she is 7 years younger than the average age of male Medical Oncologists

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

	• 12.1% of the workforce are aged over 60 years.	

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia	• All 4 Medical Oncologists practice in the Richmond Network
	• 83.9% of clinicians were located in a major city or a location considered as MMM1[7]	• An additional 3 Medical Oncologists practice in the Tweed Byron Network
	• There is 2.1 Medical Oncologists per 100,000 population across Australia	• There is 4.7 Medical Oncologists per 100,000 population across the Richmond Clarence Network.
	• Victoria has the highest proportion of Medical Oncologists (34.2%) followed by New South Wales (29%).	
	NSW	
	• 108 Medical Oncologists work in Metropolitan Sydney (73%)	
	• 50% of these intend to retire in the next five years	
	• 40 Medical Oncologists work in Non-Metropolitan Sydney (27%)	
	• 63% of these intend to retire in the next five years	
	• There is 2.0 Medical Oncologists per 100,000 population across NSW.	

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia	**Richmond**
	• **New fellows**: The number of Medical Oncologists new fellows peaked in 2013 with 26	• Prevocational Training x 1 RMO
	• The ratio of male to female new fellows was close to 1:1 between 2013 and 2015. During this period the total number of new fellows decreased by 14.8%	• Vocational Training x1 AT
	• There were no overseas trained new fellows in Medical Oncology between 2013 and 2015	• Vocational Training x.1 BPT (shared with Haematology)
	Vocational training: There were 158 Medical Oncology vocational trainees in 2016. Between 2013 and 2016 the number of female trainees increased by 28.2% (71	

	to 91) whereas male trainees increased by 1.5% (66 to 67). **NSW** • **New fellows**: There were 33 Medical Oncology new fellows in 2016 • **Advanced trainees**: There were 64 Medical Oncology advanced trainees in 2017. This is an increase from 56 in 2016.	

Regional Comparisons

The medical oncology medical workforce profile in Richmond and Clarence Valleys is above, per 100,000 population, the Australian average. Richmond Valley ratio is above the Australia average whereas Clarence Valley is below the average.

Considerations and Emerging Trends
• Increase in demand is expected with more cancer screening, longer survival, aging population and new technologies.

Workforce Survey Response

No response received.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Nephrology

The discipline of nephrology is defined by the care of patients with diseases of the kidneys and urinary tract. A minimum of six years full-time training through the Royal Australasian College of Physicians is required to specialise in this area.[1]

Nephrologist	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 479 Nephrologists employed in Australia • 28.4% worked in the private sector • 89.4% of Nephrologists who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 144 Nephrologists employed in NSW • 7% worked in the private sector only while 48% worked in the public and private sectors.	• In 2018, there are four Nephrologists practising in Richmond Clarence Network • One Nephrologist works at Northern NSW Local Health District • The three other Nephrologists work at Northern NSW Local Health District and St Vincent's Lismore.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 71.5% of Nephrologists. The average age is 50.4 years and average work hours each week is 41.7 • Females represented 28.5% of clinicians and on average were 5.7 years younger and worked 7.8 fewer hours per week compared to male Nephrologists • The total average hours for the Nephrology workforce was 39.5 hours per week. **NSW** • Females represent 28.5% of Nephrologists • The average age was 50.5 years and average work hours each week was 44.0 • 22.9% of the workforce are aged over 60 years.	• All Nephrologists are male. The average age is 51 years • Data on work hours is currently not available.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 81.3% of Nephrologists were located in a major city or a location considered as MMM1[7] • There is 1.8 Nephrologists per 100,000 population across Australia • New South Wales and Victoria had the equal highest proportion of Nephrologists (31.1%). **NSW** • 99 Nephrologists work in Metropolitan Sydney (69%) • 51% of these intend to retire in the next five years • 45 Nephrologists work in Non-Metropolitan Sydney (31%) • 75% of these intend to retire in the next five years • There is 1.9 Nephrologists per 100,000 population across NSW.	• Three Nephrologists practice in the Richmond Network • One Nephrologist practices in Clarence Network • Two additional Nephrologists practice in the Tweed Byron Network • There is 4.1 Nephrologists per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia **New fellows**: There were 35 Nephrology new fellows in 2015. This is a decrease of 2.8% from 2013 (36) Vocational training: There were 110 trainees in 2016. This is a 15.8% increase from 2013 (95). The number of female trainees increased by 19.6% (56 to 67) and males increased by 10.3% (39 to 43) between 2013 and 2016. **NSW** • **New fellows**: There were 14 Nephrology new fellows in 2016 • **Advanced trainees**: There were 34 Nephrology advanced trainees in 2017. This is a decrease from 38 in 2016.	Richmond • Prevocational Training x 2 (Intern or RMO) • Vocational Training x 1 BPT

Regional Comparisons

The nephrology medicine medical workforce profile in Richmond and Clarence Valleys is above, per 100,000 population, the Australian average. Richmond Valley ratio is above the Australia average whereas Clarence Valley is in line with the Australian average.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Considerations and Emerging Trends
• Growth in demand in expected due to aging population, obesity and diabetes growth.

Workforce Survey Response

- One Nephrologist in the Richmond Network responded to the survey
- The Nephrologist reports that:
    - The workforce data is consistent with their own knowledge in terms of number of Nephrologists and age and gender profiles

Need

- The average waiting time for a non-urgent private and public sector outpatient clinic referral is two months
- There is currently a reliance on regular locum workforce for on call only about 2-4 weeks a year. This is expected to increase in future (next year or so)
- There is a critical need for additional Nephrology workforce because the current workforce cannot be expected to work a 1-in-3 on an ongoing basis
- There will be an increasing demand for Nephrology services as the population ages. However, there will probably be less of a need for dialysis services.

Workforce Survey Implications

- The Regional Comparison data suggests the Richmond Network is resourced favourably (65%) compared to the Australian average.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

Obstetrics and Gynaecology

Obstetrics and Gynaecology are specialist branches of medicine concerned with health care specific to women. Obstetricians provide medical care before, during and after childbirth. Gynaecologists diagnose, treat and aid in the prevention of disorders of the female reproductive system. A minimum of six years full-time advanced training through the Royal Australian and New Zealand College of Obstetricians and Gynaecologists is required to specialise in this area.[1]

Obstetricians/	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
Gynaecologists	**Australia** • In 2016, there were 1,742 Obstetrician/Gynaecologists employed in Australia • 61.1% worked in the private sector • 95% of Obstetrician/Gynaecologists who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 447 Obstetrician/Gynaecologists employed in NSW • 26% worked in the private sector only while 50% worked in the public and private sectors.	• In 2018, there are six Obstetrician/Gynaecologists practising in the Richmond Clarence Network • Four Obstetrician/Gynaecologists work at Northern NSW Local Health District (NNSW LHD) • Two Obstetrician/Gynaecologists work at NNSW LHD and St Vincent's Lismore (Gynaecology services only).

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 55.4% of Obstetrician/Gynaecologists. The average age was 55.6 years and average work hours each week was 46.5 • Females represented 44.6% of Obstetrician/Gynaecologists and on average were 8.5 years younger and worked 1.7 fewer hours per week compared to male Obstetrician/Gynaecologists • The total average hours for the Obstetrics/Gynaecology workforce was 45.7 hours per week. **NSW** • Females represent 41.2% of Obstetrician/Gynaecologists	• Males represent 67% of Obstetrician/Gynaecologists. The average age is 51 years • Females represent 33% of Obstetrician/Gynaecologists and on average are 5 years younger than male Obstetrician/Gynaecologists • Data on work hours is currently not available.

	• The average age was 52.6 years and average work hours each week was 46.3 • 26.4% of the workforce are aged over 60 years.	

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 82.2% of Obstetrician/Gynaecologists were located in a major city or a location considered as MMM1[7] • There is 6.8 clinicians per 100,000 population across Australia • New South Wales has the highest proportion of Obstetrician/Gynaecologists (no figures). **NSW** • 330 Obstetrician/Gynaecologists work in Metropolitan Sydney (74%) • 73% of these intend to retire in the next five years • 117 Obstetrician/Gynaecologists work in Non-Metropolitan Sydney (26%) • 79% of these intend to retire in the next five years • There is 6.0 Obstetrician/Gynaecologists per 100,000 population across NSW.	• 3 Obstetrician/Gynaecologists practice in the Richmond Network • 3 Obstetrician/Gynaecologists practice in the Clarence Network • 5 additional Obstetrician/Gynaecologists practice in the Tweed Byron Network • There is 3.5 Obstetrician/Gynaecologists per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • **New fellows**: There were 94 Obstetrics/Gynaecology new fellows in 2015. This is an increase of 32 from 2013 (62) • There were no overseas trained new fellows in Obstetrics/Gynaecology between 2013 and 2015 Vocational training: There were 539 Obstetrician/Gynaecologist trainees in 2016. This is a 5.1% decrease from 2013 (568).	Richmond • Prevocational Training x2 RMO • Vocational Training x2 AT • Vocational Training x1 GP Extended Skills • Unaccredited Training x2

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

	NSW • **New fellows**: There were 14 Obstetrics/Gynaecology new fellows in 2016 • **Advanced trainees**: There were 154 Obstetrics/Gynaecology advanced trainees in 2017. This is an increase from 133 in 2016.	

Regional Comparisons

The obstetrics and gynaecology medical workforce profile in Richmond and Clarence Valleys is below, per 100,000 population, the Australian average. Richmond Valley ratio is below the Australia average whereas Clarence Valley is in line with the average.

Considerations and Emerging Trends
• Growth in midwife delivery and loss of GP obstetricians has impact on this workforce.

Workforce Survey Response

No response received.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

Ophthalmology

An Ophthalmologist is a medical doctor who has undertaken additional specialist training in the diagnosis and management of disorders of the eye and visual system. Ophthalmology training equips eye specialists to provide the full spectrum of eye care, including the prescription of glasses and contact lenses, medical treatment and complex microsurgery. A minimum of six years full-time advanced training through the Royal Australian and New Zealand College of Ophthalmologists is required to specialise in this area.[1]

Ophthalmologist	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 919 Ophthalmologists employed in Australia • 89.5% worked in the private sector • 97% of Ophthalmologists who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 346 Ophthalmologists employed in NSW • 51% worked in the private sector only while 46% worked in the public and private sectors.	• In 2018, there are 12 Ophthalmologists practising in the Richmond Clarence Network • Four Ophthalmologists work at Northern NSW Local Health District (NNSW LHD) • Four Ophthalmologists work at St Vincent's Lismore • Four Ophthalmologists work at NNSW LHD and St Vincent's Lismore.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 79.5% of Ophthalmologists. The average age was 54.3 years and average work hours each week was 43.7 • Females represented 20.5% of Ophthalmologists and on average were 4.4 years younger and worked 6.6 fewer hours per week compared to male Ophthalmologists • The total average hours for the Ophthalmology workforce was 42.3 hours per week. **NSW** • Females represent 21.7% of Ophthalmologists • The average age was 52.6 years and average work hours each week was 42.2	• Males represent 92% of Ophthalmologists. The average age is 48.4 years • There is one female Ophthalmologist (8%) and she is 8.6 years older compared to the average age of male Ophthalmologists • Data on work hours is currently not available.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

• 29.5% of the workforce are aged over 60 years.	

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 83.6% of Ophthalmologists were located in a major city or a location considered as MMM1[7] • There is 3.7 Ophthalmologists per 100,000 population across Australia • New South Wales has the highest proportion of Ophthalmologists with 37% and also the highest ratio of Ophthalmologists per 100,000 population. **NSW** • 263 Ophthalmologists work in Metropolitan Sydney (76%) • 47% of these intend to retire in the next five years • 83 Ophthalmologists work in Non-Metropolitan Sydney (24%) • 64% of these intend to retire in the next five years • There is 4.6 Ophthalmologists per 100,000 population across NSW.	• 8 Ophthalmologists practice in the Richmond Network • 4 Ophthalmologists practice in the Clarence Network • 2 additional Ophthalmologists practice at the Tweed Byron Network • There is 7.0 Ophthalmologists per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • **New fellows**: There were 41 Ophthalmology new fellows in 2015. This is an increase of 5 from 2013 (36) • There were no overseas trained new fellows in Ophthalmology between 2013 and 2015 Vocational training: There were 146 Ophthalmology trainees in 2016. This is a 2.1% increase from 2013 (145). **NSW** • **New fellows**: There were 5 Ophthalmology new fellows in 2016	**Richmond** • Vocational Training x 2 AT

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

	• **Advanced trainees**: There were 37 Ophthalmology advanced trainees in 2017. This is an increase from 35 in 2016.	

Regional Comparisons

The ophthalmology medicine medical workforce profile in Richmond and Clarence Valleys is above, per 100,000 population, the Australian average. Both Richmond and Clarence Valleys have ratios above the Australia average.

Workforce Survey Response

- One Ophthalmologist in the Richmond Network responded to the survey
- The Ophthalmologist reports that:
    - The workforce data is consistent with their own knowledge in terms of number of Ophthalmologists and age and gender profiles.

Need

- Urgent outpatient clinic referrals are seen without delay in the public and private sectors.
- The average waiting time for a non-urgent private sector outpatient clinic referral is one week
- There is no need for additional Ophthalmology workforce and currently no reliance on regular locum workforce.

Workforce Survey Implications

- Comments about sufficient Ophthalmology workforce are supported by the Regional Comparison data that suggests the Richmond Network is resourced favourably 45% compared to the Australian average.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Orthopaedic Surgery

Orthopaedic surgery involves the care of the musculoskeletal system. Orthopaedic surgeons diagnose, care and treat disorders of the bones, joints, muscles, ligaments, tendons, nerves and skin. A minimum of five years full-time advanced training through the Royal Australasian College of Surgeons is required to specialise in this area.[1]

Orthopaedic Surgeons	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 1,286 Orthopaedic Surgeons employed in Australia • 76.2% worked in the private sector • 96.0% of Orthopaedic Surgeons who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 413 Orthopaedic Surgeons employed in NSW • 37% worked in the private sector only while 55% worked in the public and private sectors.	• In 2018, there are 11 Orthopaedic Surgeons practicing in the Richmond Clarence Network • 7 Orthopaedic Surgeons work at Northern NSW Local Health District (NNSW LHD) • 3 Orthopaedic Surgeons work at NNSW LHD and St Vincent's Lismore • One Orthopaedic Surgeon worked at St Vincent's Lismore.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 96.9% of Orthopaedic Surgeons. The average age was 52 years and average work hours each week was 47.2 • Females represented 3.1% of Orthopaedic Surgeons and on average were 5.9 years younger and worked 0.4 fewer hours per week compared to male Orthopaedic Surgeons • The total average hours for the Orthopaedic Surgery workforce was 47.2 hours per week • The age group with the highest proportion (36%) of Orthopaedic Surgeons was 40-49 years. **NSW** • Females represent 3.4% of Orthopaedic Surgeons	• Males represented 100.0% of clinicians and had an average age of 51.0 and average hours of • All Orthopaedic Surgeons are males. The average age is 51 years • Data on work hours is currently not available.

	• The average age was 53.1 years and average work hours each week was 46.4 • 27.6% of the workforce are aged over 60 years.	

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 83.7% of clinicians were located in a major city or a location considered as MMM1[7] • There is 5.1 Orthopaedic Surgeons per 100,000 population across Australia • New South Wales has the highest proportion of Orthopaedic Surgeons with 31.3%. **NSW** • 286 Orthopaedic Surgeons work in Metropolitan Sydney (69%) • 55% of these intend to retire in the next five years • 127 Orthopaedic Surgeons work in Non-Metropolitan Sydney (31%) • 64% of these intend to retire in the next five years • There is 5.5 Orthopaedic Surgeons per 100,000 population across NSW.	• 8 Orthopaedic Surgeons practice in the Richmond Network • 3 Orthopaedic Surgeons practice in the Clarence Network • An additional 6 Orthopaedic Surgeons practice in the Tweed Byron Network • There is 6.5 Orthopaedic Surgeons per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • **New fellows**: There were 47 Orthopaedic Surgery new fellows in 2015. This is a decrease of 3 from 2013 (50) • There were no overseas trained new fellows in Orthopaedic Surgery between 2013 and 2015 Vocational training: There were 236 Orthopaedic Surgery vocational trainees in 2016. The number of female trainees increased by 56.3% from 16 to 25 and males increased by 20.6% from 175 to 211 between 2013 and 2016.	Richmond • Prevocational Training x 2 (Intern or RMO) • Vocational Training x 2 SET • Unaccredited Training x 3

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

	NSW	
	• **New fellows**: There were 12 Orthopaedic Surgery new fellows in 2016 • **Advanced trainees**: There were 79 Orthopaedic Surgery advanced trainees in 2017. This is a decrease from 89 in 2016.	

Regional Comparisons

The orthopaedic surgery medical workforce profile in Richmond and Clarence Valleys is above, per 100,000 population, the Australian average. Richmond Valley ratio is above the Australia average whereas Clarence Valley is below.

Considerations and Emerging Trends
- High demand for joint replacement driven by ageing population and obesity epidemic.
- Some curtailment in growth possible through better use of conservative management and better patient selection for surgery.
- Private health insurance and public hospitals can have aligned interests.

Workforce Survey Response

- One Orthopaedic Surgeon in the Richmond Network responded to the survey.
- The Orthopaedic Surgeon reports that:
  - The Orthopaedic Surgeon workforce data is consistent with their own knowledge in terms of number of surgeons and age and gender profiles.

Need

- The average waiting time for an urgent public and private sector outpatient clinic referral is a few days.
- The average waiting time for a non-urgent public sector outpatient clinic referral is four months.
- The average waiting time for a non-urgent private sector outpatient clinic referral is three weeks.
- There is no need for additional Orthopaedic Surgeon workforce and currently no reliance on regular locum workforce.

Workforce Survey Implications

- Comments about sufficient Orthopaedic Surgeon workforce are supported by the Regional Comparison data that suggests the Richmond Network is resourced favourably 24.1% compared to the Australian average.

References
1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Otolaryngology

Otolaryngology head and neck surgeons investigate and treat conditions involving the ear, nose, throat, head and neck. These include nasal and sinus conditions, snoring and breathing problems, tonsillitis, cancers of the head and neck including thyroid surgery, voice problems, plastic surgery of the nose and face, hearing difficulties and deafness. A minimum of five years full-time advanced training through the Royal Australasian College of Surgeons is required to specialise in this area.[1]

Otolaryngology	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 460 Otolaryngologists employed in Australia • 81.5% worked in the private sector • 97% of Otolaryngologists who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 151 Otolaryngologists employed in NSW • 36% worked in the private sector only while 62% worked in the public and private sectors.	• In 2018, there are 4 Otolaryngologists practising in the Richmond Clarence Network • 1 Otolaryngologist works at Northern NSW Local Health District (NNSW LHD) • 3 Otolaryngologists work at St Vincent's Lismore.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 87% of Otolaryngologists. The average age was 54 years and average work hours each week were 38.2 • Females represent 13% of Otolaryngologists and on average were 10 years younger compared to male Otolaryngologists. **NSW** • Females represent 13.9% of Otolaryngologists • The average age was 53.5 years and average work hours each week was 44.8 • 33.1% of the workforce are aged over 60 years.	• Males represent 75% of Otolaryngologists. The average age is 46.6 years • A female Otolaryngologist (25%) is 5.6 years younger than the average age of male Otolaryngologists. The female Otolaryngologist works 38 hours each week at NNSW LHD.

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia - 85% of Otolaryngologists were located in a major city or a location considered as MMM1[7] - There was an average of 1.8 Otolaryngologists per 100,000 population across Australia - New South Wales has the highest proportion of Otolaryngologists with 34.5%. **NSW** - 109 Otolaryngologists work in Metropolitan Sydney (72%) - 57% of these intend to retire in the next five years - 42 Otolaryngologists work in Non-Metropolitan Sydney (28%) - 74% of these intend to retire in the next five years - There is 2.0 Otolaryngologists per 100,000 population across NSW.	- All 4 Otolaryngologists practice in the Richmond Network - An additional 4 Otolaryngologists practice in the Tweed Byron Network - There is 2.3 Otolaryngologists per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia - **New fellows**: There were 13 new fellows in 2015. This is a decrease of 23.5% from 2013 (17) - There were no overseas trained new fellows in Otolaryngology between 2013 and 2015 Vocational training: There were 75 Otolaryngology trainees in 2016. This is an increase of 13.6% from 2013 (66). **NSW** - **New fellows**: There was 1 Otolaryngology new fellow in 2016 - **Advanced trainees**: There were 22 Otolaryngology advanced trainees in 2017. This is a decrease from 24 in 2016.	- Nil

Regional Comparisons

The otolaryngology surgery medical workforce profile in Richmond and Clarence Valleys is above, per 100,000 population, the Australian average. This is more reflective of the low supply of specialists in this area of

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

practice. While compared to the low Australian average, Richmond Valley would seem to have a satisfactory level of supply, this is by no means sufficient to service the demands of the community.

Workforce Survey Response

No response received.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

Paediatrics and Child Health

Paediatricians specialise in the treatment of neonates, infants, children and adolescents. A minimum of six years full-time advanced training through the Royal Australasian College of Physicians is required to specialise in this area.[1]

Paediatricians	Australia [1,2,]	Richmond and Clarence Network [2,3,4]
	• In 2016, there were 2,059 Paediatricians employed in Australia • 26.4% worked in the private sector • 90% of Paediatricians who completed the 2016 National Health Workforce Survey indicated they were clinicians.	• In 2018, there are 10 Paediatricians practising in the Richmond Clarence Network • 9 Paediatricians work at Northern NSW Local Health District (NNSW LHD) • 1 Paediatrician works at NNSW LHD and St Vincent's Lismore.

Workforce Demographics	Australia [1,2,]	Richmond and Clarence Network [2,3,4]
	• Males represented 51.8% of Paediatricians. The average age was 52.2 years and average work hours each week was 38.6 • Females represented 48.2% of Paediatricians and on average were 6.3 years younger and worked fewer hours per week compared to male Paediatricians • The total average hours for the Paediatrician workforce was 35.5 hours per week.	• Males represent 40% of Paediatricians. The average age is 56.2 years • Females represent 60% of Paediatricians and on average were 11 years younger compared to male Paediatricians • Data on work hours is currently not available.

Distribution	Australia [1,2,]	Richmond and Clarence Network [2,3,4]
	• 85.3% of clinicians were located in a major city or a location considered as MMM1[5] • There is 7.6 Paediatricians per 100,000 population across Australia • New South Wales has the highest proportion of Paediatricians with 33.5% • The New South Wales ratio of Paediatricians per 100,000 population is 8.0.	• 8 Paediatricians practice in the Richmond Network • 2 Paediatricians practice in the Clarence Network • 5 additional Paediatricians practice in the Tweed Byron Network • There is 6.5 Paediatricians per 100,000 population across Richmond Clarence Network.

New Fellows *Vocational Training*	Australia [1,2]	Richmond and Clarence Network [2,3,4]
	• **New fellows**: There were 158 Paediatrician new fellows in 2015. This is an increase of 17.9% from 2013 (134) • There were no overseas trained new fellows in Paediatrics between 2013 and 2015 Vocational training: There were 1,604 Paediatrician vocational trainees in 2016. The number of female trainees increased by 26.3% (953 to 1,204) whereas male trainees decreased by 3.6% (415 to 400) between 2013 and 2016.	Richmond • Prevocational Training x 2 RMO • Vocational Training x 2 AT • Vocational Training x 2 BT • GP Extended Skills x 1 (2020) Clarence • GP Extended Skills x 1 (2020)

Regional Comparisons

The paediatrics and child health medical workforce profile in Richmond and Clarence Valleys is in line, per 100,000 population, with the Australian average. Richmond Valley ratio is consistent with the Australia average whereas Clarence Valley is below the average.

Considerations and Emerging Trends

• It is expected that there will be growth in recognition and management of psycho-social and developmental disorders.
• Children travelling for paediatric surgery puts enormous pressure on families and creates emotional, social and economic stress for children and families involved. Consideration should be given for the staged approach to redevelopment of a paediatric surgical service.

Workforce Survey Response

No response received.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Workforce data. Northern NSW Local Health District, 2018.
4. Workforce data. St Vincent's Lismore, 2018.
5. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Pain Medicine

Pain medicine specialists serve both as a consultant to other physicians and often as the principal treating physician. The spectrum of care provided includes prescribing medication, co-ordinating rehabilitative services, performing pain relieving procedures, counselling patients and families, and directing a multidisciplinary team.

In Australia and New Zealand, a career in pain medicine is generally obtained by qualifying as a Fellow of the Faculty of Pain Medicine, Australian and New Zealand College of Anaesthetists. The fellowship in pain medicine is an "add-on" specialist degree. Those wishing to enter the field usually will have or be training toward a specialist qualification in one of the participating specialties, namely anaesthesia, medicine, surgery, psychiatry or rehabilitation medicine.

To specialise in pain medicine takes two years of full-time training.[1]

Pain Medicine	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 254 Pain Medicine Physicians employed in Australia • 50.8% worked in the private sector • 97.2% of Pain Medicine Physicians who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 66 Pain Medicine Physicians employed in NSW • 21% worked in the private sector only while 41% worked in the public and private sectors.	• In 2018, there is one Pain Medicine Physician practising in the Richmond Clarence Network • The Pain Medicine Physician works at Northern NSW Local Health District.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 76.1% of Pain Medicine Physicians. The average age is 53.3 years and average work hours each week is 24.8 • Females represented 23.9% of Pain Medicine Physicians and on average were 5.6 years younger and worked 7 fewer hours per week compared to male Pain Medicine Physicians • The total average hours for the Pain Medicine Physician	• The Pain Medicine Physician is male, aged 38 years and works 9.5 hours per week.

	workforce was 23.1 hours per week • The age group with the highest proportion (30.8%) of Pain Medicine Physicians was 40-49 years. **NSW** • Females represent 22.7% of Pain Medicine Physicians • The average age was 52.9 years and average work hours each week was 29.2 • 22.7% of the workforce are aged over 60 years.	

	Australia and NSW [1,2,3,4]	**Richmond and Clarence Network** [2,5,6]
Distribution	**Australia** • 87.4% of Pain Medicine Physicians were located in a major city or a location considered as MMM1[7] • There is 1.0 Pain Medicine Physicians per 100,000 population across Australia • New South Wales has the highest proportion of Pain Medicine Physicians with 30.9%. **NSW** • 46 Pain Medicine Physicians work in Metropolitan Sydney (70%) • 67% of these intend to retire in the next five years • 20 Pain Medicine Physicians work in Non-Metropolitan Sydney (30%) • 67% of these intend to retire in the next five years • There is 0.9 Pain Medicine Physicians per 100,000 population across NSW.	• The Pain Medicine Physician practices in the Richmond Network • There is 0.6 Pain Medicine Physicians per 100,000 population across Richmond Clarence Network.
New Fellows *Vocational Training*	**Australia and NSW** [1,2,3,4]	**Richmond and Clarence Network** [2,5,6]
	Australia • **New fellows**: There were 32 Pain Medicine Physician new fellows in 2015. This is an increase of 128.6% from 2013 (14). • Female Pain Medicine Physician new fellows increased by 180% whereas male	• Nil

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

	new fellows increased by 100% between 2013 and 2015	
	• There were no overseas trained new fellows in Pain Medicine between 2013 and 2015	
	Vocational training: There were 66 Pain Medicine Physician vocational trainees in 2016. The total number of vocational trainees remained similar between 2013 and 2016. The number of female trainees in 2016 (29) decreased 14.7% from 2013 (34).	
	NSW	
	• **New fellows**: There were 4 Pain Medicine new fellows in 2016	
	• **Advanced trainees**: There were 12 Pain Medicine advanced trainees in 2017. This is stable from 12 in 2016.	

Regional Comparisons

The pain medicine medical workforce profile in Richmond and Clarence Valleys is below, per 100,000 population, the Australian average. While the Richmond Valley ratio is below the Australia average, the Clarence Valley average is lower.

Considerations and Emerging Trends
• Growing recognition of need for better treatments is labour intensive, but mostly non-medical.

Workforce Survey Response

No response received.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Palliative Medicine

Palliative medicine is the study and management of patients with active, progressive and far-advanced disease, for whom the prognosis is limited and the focus of care is on their quality of life. Up to six years full-time advanced training through the Royal Australasian College of Physicians Australasian Chapter of Palliative Medicine is required to specialise in this area.[1]

Palliative Care	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 280 Palliative Medicine Physicians employed in Australia • 20% worked in the private sector • 90% of Palliative Medicine Physicians who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 83 Palliative Medicine Physicians employed in NSW • 5% worked in the private sector only while 25% worked in the public and private sectors.	• In 2018, there is 1 Palliative Medicine Physician practising in the Richmond Clarence Network • The Palliative Medicine Physician works at Northern NSW Local Health District. • Survey Information: The specialist working hours is 32 hours per week. There is considerable additional after hours and weekend contact with General Practitioners and Hospitals. This is split across the Richmond and Clarence Networks.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 41.1% of Palliative Medicine Physicians. The average age was 54.5 years and average hours worked each week was 32.9 • Females represented 58.9% of Palliative Medicine Physicians and on average were 6.9 years younger and worked 0.4 fewer hours per week compared to male Palliative Medicine Physicians • The total average hours for the Palliative Medicine Physician workforce was 32.7 hours per week. **NSW** • Females represent 65.1% of Palliative Medicine Physicians	• The Palliative Medicine Physician is male, aged 57 years and works 22.8 hours per week.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

	• The average age was 50.7 years and average work hours each week was 36.3 • 18.1% of the workforce are aged over 60 years.	

Distribution 	**Australia and NSW** [1,2,3,4]	**Richmond and Clarence Network** [2,5,6]
	Australia • 84.6% of Palliative Medicine Physicians were located in a major city or a location considered as MMM1[7] • There is 1.0 Palliative Medicine Physicians per 100,000 population across Australia • New South Wales has the highest proportion of Palliative Medicine Physicians with 33.6%. **NSW** • 61 Palliative Medicine Physicians work in Metropolitan Sydney (73%) • 67% of these intend to retire in the next five years • 22 Palliative Medicine Physicians work in Non-Metropolitan Sydney (27%) • 83% of these intend to retire in the next five years • There is 1.1 Palliative Medicine Physicians per 100,000 population across NSW.	• One Palliative Medicine Physician practices in the Richmond Network • An additional Palliative Medicine Physician practices in the Tweed Byron Network • There is 0.6 Palliative Medicine Physicians per 100,000 population across Richmond Clarence Network.

New Fellows *Vocational Training* 	**Australia and NSW** [1,2,3,4]	**Richmond and Clarence Network** [2,5,6]
	Australia • **New fellows**: There were 18 Palliative Medicine Physician new fellow in 2015 This a decrease of 21 from 2014. • Overseas trained new fellows who obtained their specialist qualification outside of Australia represented 22.2% of Palliative Medicine Physician new fellows in 2015 • There were no overseas trained new fellows in	• Vocational GP Extended Skills Community x 1 • Vocational GP Extended Skills Acute x 1

	Palliative Medicine between 2013 and 2015 Vocational training: There was 39 Palliative Medicine Physician vocational trainees in 2016. This is a 51.3% decrease from 2013 (80). **NSW** • **New fellows**: There were 7 Palliative Medicine new fellows in 2016 • **Advanced trainees**: There were 9 Palliative Medicine advanced trainees in 2017. This is an increase from 6 in 2016.	

Regional Comparisons

The palliative medicine medical workforce profile in Richmond and Clarence Valleys is below, per 100,000 population, the Australian average.

Considerations and Emerging Trends
• Growth due to aging population, but need for medical specialist offset by better support for GPs and the increase use of specialist nurses.

Workforce Survey Response

- One Palliative Medicine Physician in the Richmond Network responded to the survey.
- The Palliative Medicine Physician reports that:
  - Their work base is 32 hours per week and that there is considerable additional after hours and weekend contact with General Practitioners and Hospitals. This is split across the Richmond and Clarence Networks
  - The workforce data is consistent with their own knowledge in terms of number of Palliative Medicine Physicians and age and gender profiles.

Need

  - The average waiting time for urgent and non-urgent public sector outpatient clinics referrals is one week
  - There is a critical need for additional Palliative Medicine Physician workforce.
  - Currently there is an inability to provide 24/7 basic services or specialist direct care, and a reliance on regular locum workforce to cover leave.
  - All patients in Grafton and Maclean could be admitted to Grafton Base Hospital and Maclean District Hospital if medical/nursing resources there were adequate.
  - The current arrangement with St Vincent's Hospital Lismore to provide an inpatient service for public patients does not have any specialist supervision or integration making it untenable.
  - Increasing the number of specialist nurses does not decrease the amount of work for Palliative Medicine Physicians.
  - There is no critical mass of doctors or specialist nurses, or the management and administration structures to provide a safe and reliable specialist inpatient or community service.

Workforce Survey Implications

- Comments about insufficient Palliative Medicine Physician workforce are supported by the Regional Comparison data that suggests the Richmond Network is under-resourced 24.3% compared to the Australian average.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

Pathology

Pathology is the medical specialty concerned with the study of the cause of disease and the ways in which diseases affect our bodies by examining changes in the tissues and in blood and other body fluids. A minimum of five years full-time advanced training through the Royal College of Pathologists of Australasia is required to practice in any of these specialities:

- Chemical pathology deals with the diagnosis and management of disease by use of chemicals present in the body fluids and tissues;
- Clinical pathology deals with the diagnosis and management of disease by the use of a wide range of diagnostic laboratory medicine techniques, including examination of the patient;
- Forensic pathology focuses on medicolegal investigations of sudden or unexpected death;
- General pathology deals with the diagnosis and management of disease by use of every component of laboratory medicine and every diagnostic technique, including examination of the patient;
- Genetic pathology (Biochemical genetics and Medical genomics) contributes to the multidisciplinary range of skills required within pathology services to aid in the diagnosis, management and treatment of patients with disorders arising from genomic mutations;
- Haematology encompasses both clinical and laboratory aspects of primary disorders of the blood as well as how other diseases affect the blood;
- Immunopathology encompasses the provision of expert diagnostic support for patients with immune disorders; and
- Microbiology involves the use of laboratory techniques to diagnose infectious diseases, recommend antibiotic therapy and to advise, correlate, coordinate and educate clinicians regarding aspects of the pathogenesis, epidemiology, prevention and management of infection.[1]

Pathologists	Australia [1,2]	Richmond and Clarence Network [2,3,4]
	- In 2016, there were 1,007 Pathologists employed in Australia 31.2% worked in the private sector 87% of Pathologists who completed the 2016 National Health Workforce Survey indicated they were clinicians.	- In 2018, there are 3 Pathologists practising in the Richmond Clarence Network - All Pathologists work at St Vincent's Lismore.

Workforce Demographics	Australia [1,2]	Richmond and Clarence Network [2,3,4]
	- Males represented 63.3% of Pathologists. The average age was 54.6 years and average hours worked each week was 22 - Females represented 36.7% of Pathologists and on average were 7.1 years younger and worked 0.3 more hours per week compared to male Pathologists - The total average hours for the Pathology workforce was 22.1 hours per week.	- Males represent 66.7% of Pathologists. The average age is 52 years - There is one female Pathologist (33.3%) and she is 2 years older than the average age of male Pathologists - Data on work hours is currently not available.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

Distribution	Australia [1,2]	Richmond and Clarence Network [2,3,4]
	• 91.5% of Pathologists were located in a major city or a location considered as MMM1[5] • There is 3.6 Pathologists per 100,000 population across Australia • New South Wales has the highest proportion of Pathologists with 34.5%.	• All 3 Pathologists practice in the Richmond Network • There is 1.8 Pathologists per 100,000 population in Richmond Clarence Network.

New Fellows Vocational Training	Australia [1,2]	Richmond and Clarence Network [2,3,4]
	• **New fellows**: There were 55 Pathology new fellows in 2015. The number of female pathology new fellows increased by 43.5% (23 to 33) whereas the number of males decreased by 26.7% (30 to 22) between 2013 and 2015 • There were no overseas trained new fellows in Pathology between 2013 and 2015 Vocational training: There were 311 vocational trainees in 2016. This is a 13.5% increase from 2013 (274).	• Nil

Regional Comparisons

The pathology medical workforce profile in Richmond and Clarence Valleys is below, per 100,000 population, the Australian average.

Considerations and Emerging Trends
• There is a national shortage of pathologists. • Most private pathology is currently sent out of region.

Workforce Survey Response

No response received.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Workforce data. Northern NSW Local Health District, 2018.
4. Workforce data. St Vincent's Lismore, 2018.
5. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Physician

Data in this factsheet covers the following physician adult medicine subspecialties: clinical genetics, clinical pharmacology, haematology, immunology and allergy, infectious diseases, nuclear medicine, respiratory and sleep medicine, and rheumatology. A minimum of six years full-time advanced training through the Royal Australasian College of Physicians is required to practice in any of these specialities:

- Clinical genetics encompasses the identification of genetic mutations in patients that lead to disease processes;
- Clinical pharmacology is the scientific discipline that involves all aspects of the relationship between drugs and humans;
- Clinical haematology is an integrated discipline incorporating clinical and laboratory aspects of diseases of the blood and blood-forming organs;
- Clinical immunology and allergy physicians care for patients with a diverse range of disorders of the immune system, encompassing allergic disorders, immune deficiency disorders and autoimmune diseases;
- Infectious diseases provide a predominantly hospital-based service, specialising in the various clinical, laboratory and public health aspects of infectious disease medicine and microbiology;
- Nuclear medicine uses radiopharmaceuticals (radioisotopes) in the diagnosis and treatment of a wide range of medical conditions;
- Respiratory and sleep medicine is a specialty of internal medicine encompassing diseases of the respiratory system including the upper airway, the lungs, the chest wall, the pulmonary circulation and the ventilatory control system; and
- Rheumatology encompasses the diagnosis and holistic management of people with diseases that affect joints, muscles and bones.[1]

Physician	Australia [1,2]	Richmond and Clarence Network [2,3,4]
	- In 2016, there were 2,501 Physicians employed in Australia - 36.4% worked in the private sector - 89.0% of Physicians who completed the 2016 National Health Workforce Survey indicated they were clinicians.	- In 2018, there are 10 Physicians practising in the Richmond Clarence Network - Physician specialities include Haematology (4), Rheumatology (2), Infectious Disease (1), Respiratory and Sleep Medicine (3) - 4 Physicians work at Northern NSW Local Health District (NNSW LHD) - 2 Physicians work at St Vincent's Lismore. One of these Physicians also works at NNSW LHD but in a different capacity (General and Acute Medicine) - 4 Physicians work at NNSW LHD and St Vincent's Lismore.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

Workforce Demographics	Australia [1,2,]	Richmond and Clarence Network [2,3,4]
	• Males represented 67.8% of Physicians. The average age was 51.9 years and average work hours each week was 34.8 • Females represented 32.2% of Physicians and on average were 5.3 years younger and worked 6.3 fewer hours per week compared to male Physicians • The total average hours for the Physician clinician workforce was 34.8 hours per week • The age group with the highest proportion (35%) of Physicians was 40-49 years.	• Males represent 70% of Physicians. The average age is 47.4 years • Females represent 30% of Physicians and on average are 2.8 years younger than the average age of male Physicians • Data on work hours is currently not available.

Distribution	Australia [1,2,]	Richmond and Clarence Network [2,3,4]
	• 89.9% of Physicians were located in a major city or a location considered as MMM1[5] • There is 9.2 Physicians per 100,000 population across Australia • New South Wales has the highest proportion of Physicians with 35%.	• All 12 Physicians practice in the Richmond Network • 6 additional Physicians practice in the Tweed Byron Network • There is 7.1 Physicians per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia [1,2,]	Richmond and Clarence Network [2,3,4]
	• **New fellows**: There were 140 Physician new fellows (71 male and 69 female) in 2015. This is a 26% increase from 2013 (111) Vocational training: There were 603 Physician vocational trainees in 2016. This is a 35.2% increase from 2013 (446). Female trainees increased by 48.9% from 227 to 338 and males by 21.0% from 219 to 265 between 2013 and 2016.	**Richmond** Haematology • Prevocational Training x 1 RMO • Vocational Training x1 AT • Vocational Training x.1 BPT (shared with Med/Onc) Respiratory • Prevocational Training x 1 Intern or RMO • Vocational Training x 1 BPT • Vocational Training x 1 AT (2020)

Regional Comparisons

The physician medical workforce profile in Richmond and Clarence Valleys is below, per 100,000 population, the Australian average.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

Workforce Survey Response

- One Physician in the Richmond Network responded to the survey
- The Physician reports that:
    - Physicians also work as a Pathologist and in the Tweed/Byron and Clarence Networks
    - The workforce data is inconsistent with their own knowledge in terms of number of Physicians and geographic and age profiles. There are additional younger Physicians and Clarence Network Physicians
    - A potential confounding factor with the workforce data is some Physicians (Haematologists) also often work as Pathologists (dual college trained)

Need

- Urgent public and private sector outpatient clinic referrals must be admitted in many cases. The average waiting time for non-urgent public and private outpatient clinic referrals is seven months
- Currently there is a reliance on regular locum workforce to cover leave.
- There is a critical need for additional Physician workforce.

Workforce Survey Implications

- Comments about insufficient Physician workforce are supported by the Regional Comparison data that suggests the Richmond Network is under-resourced compared to the Australian average
- Physician and Pathology workforce data needs to be further investigated to clarify instances of clinicians working as both Physician and Pathologist, and instances where they work just as a Physician or just as a Pathologist.

References
1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
3. Workforce data. Northern NSW Local Health District, 2018.
4. Workforce data. St Vincent's Lismore, 2018.
5. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

Plastic Surgery

Plastic and Reconstructive surgery is a wide-ranging specialty involving manipulation, repair and reconstruction of the skin, soft tissue and bone. Plastic surgery is a specialty not restricted to one organ or tissue type. The main emphasis is on maintaining or restoring form and function, often working in a team approach with other specialties. A minimum of five years full-time advanced training through the Royal Australasian College of Surgeons is required to specialise in this area.[1]

Plastic Surgeon	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 424 Plastic Surgeons employed in Australia • 76.9% worked in the private sector • 97% of Plastic Surgeons who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 116 Plastic Surgeons employed in NSW • 36% worked in the private sector only while 60% worked in the public and private sectors.	• In 2018, there are 2 Plastic Surgeons practising in Richmond Clarence Network • Both Plastic Surgeons work at St Vincent's Lismore.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 85.9% of Plastic Surgeons. The average age was 52.7 years and average work hours each week was 49 • Females represented 14.1% of Plastic Surgeons and on average were 5.4 years younger and worked 2.3 fewer hours per week compared to male Plastic Surgeons • The total average hours for the Plastic Surgeon workforce was 48.7 hours per week. **NSW** • Females represent 12.1% of Plastic Surgeons • The average age was 53.7 years and average work hours each week was 46.9 • 31.4% of the workforce are aged over 60 years.	• Both Plastic Surgeons are males. The average age is 39.5 years • Data on work hours is currently not available.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 91.5% of Plastic Surgeons were located in a major city or a location considered as MMM1[7] • The national average was 1.7 Plastic Surgeons per 100,000 population across Australia. **NSW** • 102 Plastic Surgeons work in Metropolitan Sydney (88%) • 47% of these intend to retire in the next five years • 14 Plastic Surgeons work in Non-Metropolitan Sydney (12%) • 50% of these intend to retire in the next five years • There is 1.6 Plastic Surgeons per 100,000 population across NSW.	• Both Plastic Surgeons practice in the Richmond Network • An additional Plastic Surgeon practices in the Tweed Byron Network • There is 1.7 Plastic Surgeons per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • **New fellows**: There were 12 Plastic Surgery new fellows in 2015. This is a decrease of 14.3% from 2013 (14). Vocational training: The number of Plastic Surgeon vocational trainees was 85 in 2016. This is a 28.8% increase from 2013 (66). **NSW** • **New fellows**: There were 6 Plastic Surgery new fellows in 2016 • **Advanced trainees**: There were 26 Plastic Surgery advanced trainees in 2017. This is a decrease from 30 in 2016.	• Nil.

Regional Comparisons

The plastic surgery medical workforce profile in Richmond and Clarence Valleys is below, per 100,000 population, the Australian average. Richmond Valley ratio is close to the Australia average.

Considerations and Emerging Trends
• Increase in demand expected due to aging population and growing rates of skin cancer. Also increase if trauma surgery or burns management being done locally.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

Workforce Survey Response

No response received.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

Psychiatry

Psychiatrists specialise in the diagnosis, treatment and prevention of mental illness and emotional problems. They are trained to recognise and treat the effects of emotional disturbances on the body, as well as the effects of physical conditions on the mind. A minimum of five years full-time advanced training through the Royal Australian and New Zealand College of Psychiatrists is required to specialise in this area.[1]

Psychiatry	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 3,327 Psychiatrists employed in Australia • 49.7% worked in the private sector • 91.5% of Psychiatrists who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 1,008 Psychiatrists employed in NSW • 39% worked in the private sector only while 26% worked in the public and private sectors.	• In 2018, there are 13 Psychiatrists practising in the Richmond Clarence Network • All Psychiatrists work at Northern NSW Local Health District. • <u>Survey response</u>: There are 10 Psychiatrists currently working in the Richmond and Clarence Network and four of these only work eight hours per week.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 61.3% of Psychiatrists. The average age was 54.5 years and average work hours each week was 40.6 • Females represented 38.7% of Psychiatrists and on average were 3.4 years younger and worked 6.4 fewer hours per week compared to male Psychiatrists • The total average hours for the Psychiatry workforce was 38.1 hours per week • The age group with the highest proportion (32%) of Psychiatrists was 40-49 years. **NSW** • Females represent 36.7% of Psychiatrists	• Males represent 76.9% of Psychiatrists. The average age is 54.5 years • Females represent 23.1% of Psychiatrists and on average were 3.4 years younger than the average age of male Psychiatrists • Data on work hours is currently not available. • <u>Survey response</u>: Females represent 40% of Psychiatrists. The total average hours for the Psychiatry workforce is 23.8 hours per week.

	• The average age was 54.1 years and average work hours each week was 37.7 • 32.9% of the workforce are aged over 60 years.	

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 87.5% of clinicians were located in a major city or a location considered as MMM1[7] • There is 12.6 Psychiatrists per 100,000 population across Australia • New South Wales has the highest proportion of Psychiatrists with 30%. However, the ratio of Psychiatrists per 100.000 population is less than the national average. **NSW** • 786 Psychiatrists work in Metropolitan Sydney (78%) • 55% of these intend to retire in the next five years • 222 Psychiatrists work in Non-Metropolitan Sydney (22%) • 61% of these intend to retire in the next five years • There is 13.5 Psychiatrists per 100,000 population across NSW.	• 12 Psychiatrists practice in the Richmond Network • A Psychiatrist practices in the Clarence Network • An additional 10 Psychiatrists practice in the Tweed Byron Network • There is 7.6 Psychiatrists per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • **New fellows**: There were 180 Psychiatry new fellows (99 male and 81 female) in 2015. This is an increase of 39 from 2013 Vocational training: There were 1,522 Psychiatry vocational trainees in 2016. This is a 21.6% increase from 2013 (1,251). Female trainees increased by 2.8% from 684 to 703 and males by 44.4% from 567 to 819 between 2013 to 2016. **NSW**	**Richmond** • Prevocational Training x 2 Intern or RMO • Vocational Training x 11 • Vocational Training x 1 GP Extended Skills.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

| | • **New fellows**: There were 22 Psychiatry new fellows in 2016
 • **Advanced trainees**: There were 171 Psychiatry advanced trainees in 2017. This is a decrease from 231 in 2016. | |

Regional Comparisons

The psychiatry medical workforce profile in Richmond and Clarence Valleys is below, per 100,000 population, the Australian average.

Considerations and Emerging Trends
• Significant increase in demand expected.   • Better use of telemedicine

Workforce Survey Response

- One Psychiatrist in the Richmond Network responded to the survey
- The Psychiatrist reports that:
  - There are 10 Psychiatrists currently working in the Richmond and Clarence Network and four of these only work eight hours per week. Additionally, there are currently four Psychiatry position vacancies
  - Females represent 40% of Psychiatrists
  - The total average hours for the Psychiatry workforce is 23.8 hours per week

Need

- Psychiatry services (clinical and on call) rely on locum workforce every week of the year
- The average waiting time for an urgent public sector outpatient clinic referral is 12 hours.
- The average waiting time for a non-urgent public sector outpatient clinic referral is 24-48 hours
- There is a critical need for additional Psychiatry workforce due to:
  - High mental health needs in the Clarence Network
  - Locums only partially meeting need
  - Telemedicine limitations including inadequate infrastructure, resourcing and patient dissatisfaction with telemedicine
  - Expected surge in demand in the Clarence Network following the opening of the new Grafton Correctional Facility
- More Electroconvulsive Therapy and Psychotherapy could be performed locally with additional Psychiatry workforce. This is most important for patients who do not currently receive any service, other than primary care, due to lack of resources.

Workforce Survey Implications

- There are currently fewer Psychiatrists practising in the Richmond and Clarence Networks than indicated by workforce data (10 not 13). However, should current vacancies (as noted in the survey) be filled, this would increase to 14 Psychiatrists practicing in the Richmond Clarence Network
- The proportion of female Psychiatrists is currently higher than indicated by workforce data (40% not 23.1%)
- Psychiatrists working in Richmond and Clarence Networks are on average working less than the Australian average (23.8 hours versus 38.1 hours)
- Comments about insufficient Psychiatry workforce are supported by the Regional Comparison data that suggests the Richmond Network and Clarence Network are under-resourced 24.6% and 546% respectively compared to the Australian average.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Radiation Oncology

Radiation oncology is a specialty dealing with rapidly changing technological advances directed largely at improving the accuracy and effectiveness of radiotherapy outcomes, including better control and cure of tumours, as well as reduction of side effects. Increasing use of high-quality imaging to direct radiotherapy, and newer types of radiation (such as protons) and evolving delivery techniques, such as intensity modulated radiotherapy (IMRT), are quickly becoming standard treatment methods. A minimum of five years full-time advanced training through the Royal Australian and New Zealand College of Radiologists is required to specialise in this area.[1]

Radiation Oncologists	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 345 Radiation Oncologists employed in Australia • 25.8% worked in the private sector • 95% of Radiation Oncologists who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 118 Radiation Oncologists employed in NSW • 13% worked in the private sector only while 26% worked in the public and private sectors.	• In 2018, there are 4 Radiation Oncologists practising in the Richmond Clarence Network • 3 Radiation Oncologists work at Northern NSW Local Health District (NNSW LHD) • 1 Radiation Oncologist works at NNSW LHD and St Vincent's Lismore

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 59.1% of Radiation Oncologists. The average age was 48.9 years and average work hours each week was 45.3 • Females represented 40.9% of Radiation Oncologists and on average were 4.2 years younger and worked 5.6 fewer hours per week compared to male Radiation Oncologists • The total average hours for the Radiation Oncology workforce was 43 hours per week • The age group with the highest proportion (40%) of Radiation Oncologists was 40-49 years. **NSW**	• All Radiation Oncologists are males. The average age is 45 years • Data on work hours is currently not available.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

	• Females represent 44.4 % of Radiation Oncologists • The average age was 46.2 years and average work hours each week was 44.0 • 9.3% of the workforce are aged over 60 years.	

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 83.3% of Radiation Oncologists were located in a major city or a location considered as MMM1[7] • There was an average of 1.4 Radiation Oncologists per 100,000 population across Australia • New South Wales has the highest proportion of Radiation Oncologists with over 35%. **NSW** • 82 Radiation Oncologists work in Metropolitan Sydney (69%) • 83% of these intend to retire in the next five years • 36 Radiation Oncologists work in Non-Metropolitan Sydney (31%) • 83% of these intend to retire in the next five years • There is 1.6 Radiation Oncologists per 100,000 population across NSW.	• All Radiation Oncology Physicians practice in the Richmond Network • There is 2.3 Radiation Oncologists per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • **New fellows**: There were 24 Radiation Oncology new fellows in 2015. This is a 4.3% increase from 2013 (23) • Female new fellows decreased by 53.3% while male new fellows increased 112.5% between 2013 and 2015 • There were 3 clinicians who trained overseas and obtained their specialist qualification outside of Australia in 2015	Richmond • Unaccredited Training x 1 • Accredited AT x 1

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

	Vocational training: Total number of Radiation Oncology vocational trainees decreased by 22.1% from 122 in 2013 to 95 in 2016. **NSW** • **New fellows**: There were 8 Radiation Oncology new fellows in 2016 • **Advanced trainees**: There were 47 Radiation Oncology advanced trainees in 2017. This is an increase from 41 in 2016.	

Regional Comparisons

The radiation oncology medical workforce profile in Richmond and Clarence Valleys is above, per 100,000 population, the Australian average. Richmond Valley ratio is above the Australia average whereas Clarence Valley is below the average.

Workforce Survey Response

- One Radiation Oncologist in the Richmond Network responded to the survey
- The Radiation Oncologist reports that:
    - The workforce data is consistent with their own knowledge in terms of number of Radiation Oncologists and age and gender profiles. However, there is only 2.2 FTE working in NNSW LHD.

Need

- The average waiting time for an urgent public and private sector outpatient clinic referral is one week.
- The average waiting time for a non-urgent public and private sector outpatient clinic referral is 2-3 weeks
- There is currently no reliance on regular locum workforce
- There is a critical need for additional Radiation Oncology workforce due to:
    - Increasing patient numbers and complexity of work,
    - Need for leave cover
    - Increasing clinical and administrative load
    - Need to support current trainees to complete training requirements
- Patients from Ballina, Byron Bay and Tweed Heads may be seeking private treatment at John Flynn Hospital. The current Radiation Oncology workforce do not have the capacity to develop a footprint in Ballina/Byron Bay
- Workforce constraints mean NNSW LHD is limited in the service it provides in instances where there are new indications for radiotherapy or increasing task complexity requiring Radiation Oncologists to be present during treatment.

Workforce Survey Implications

- The Regional Comparison data that suggests the Richmond Network is resourced favourably 59.5% compared to the Australian average
- Workforce data needs to be further investigated to clarify differences between head count and FTE reported.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.

3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).

4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).

5. Workforce data. Northern NSW Local Health District, 2018.

6. Workforce data. St Vincent's Lismore, 2018.

7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

Rehabilitation Medicine

Rehabilitation medicine involves the diagnosis, assessment and management of a disability due to illness or injury. Rehabilitation physicians work with people with a disability to help them achieve and maintain an optimal quality of life. A minimum of four years full-time advanced training through the Royal Australasian College of Physicians, Australasian Faculty of Rehabilitation Medicine, is required to specialise in this area.[1]

Rehabilitation	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 451 Rehabilitation Medicine Physicians employed in Australia • 37.7% worked in the private sector • 96% of Rehabilitation Medicine Physicians who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 194 Rehabilitation Medicine Physicians employed in NSW • 23% worked in the private sector only while 33% worked in the public and private sectors.	• In 2018, there is 1 Rehabilitation Medicine Physician practising in the Richmond Clarence Network • The Rehabilitation Medicine Physician works at Northern NSW Local Health District and St Vincent's Lismore.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 53.6% of Rehabilitation Medicine Physicians. The average age is 53.3 years and average work hours each week is 37 • Females represented 46.4% of Rehabilitation Medicine Physicians and on average were 6 years younger and worked 3.9 fewer hours per week compared to male Rehabilitation Medicine Physicians • The total average hours for the Rehabilitation Medicine Physician workforce was 35.2 hours per week • The age group with the highest proportion (32%) of	• The Rehabilitation Medicine Physician is female, aged 52 years and works 38 hours per week.

	Rehabilitation Medicine Physicians was 40-49 years. **NSW** • Females represent 46.9% of Rehabilitation Medicine Physicians • The average age was 51.5 years and average work hours each week was 36.6 • 22.7% of the workforce are aged over 60 years.	

Distribution	**Australia and NSW** [1,2,3,4]	**Richmond and Clarence Network** [2,5,6]
	Australia • 86.1% of clinicians were located in a major city or a location considered as MMM1[7] • There is 1.8 Rehabilitation Medicine Physicians per 100,000 population across Australia • New South Wales has the highest proportion of Rehabilitation Medicine Physicians with 45.3% • New South Wales had the highest ratio of Rehabilitation Medicine Physicians per 100,000 population (2.5). **NSW** • 146 Rehabilitation Medicine Physicians work in Metropolitan Sydney (75%) • 75% of these intend to retire in the next five years • 48 Rehabilitation Medicine Physicians work in Non-Metropolitan Sydney (25%) • 54% of these intend to retire in the next five years • There is 2.6 Rehabilitation Medicine Physicians per 100,000 population across NSW.	• 1 Rehabilitation Medicine Physician practices in the Richmond Network • An additional 1 Rehabilitation Medicine Physician practices in the Tweed Byron Network • There is 0.6 Rehabilitation Medicine Physicians per 100,000 population across Richmond Clarence Network.

New Fellows *Vocational Training*	**Australia and NSW** [1,2,3,4]	**Richmond and Clarence Network** [2,5,6]
	Australia • **New fellows**: There were 33 Rehabilitation Medicine new	Richmond • Accredited AT x 1 • Unaccredited Trainee / CMO x 1.5

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

	fellows in 2015. This was a 65% increase from 2013 (20)
	• 69.7% of Rehabilitation Medicine new fellows were female in 2015.
	• The number of overseas trained new fellows who obtained their specialist qualification outside of Australia decreased by 50% from 2 in 2013 to 1 in 2015
	• There were no overseas trained new fellows in Rehabilitation Medicine between 2013 and 2015
	Vocational training: Vocational trainees increased by 4.2% from 191 in 2013 to 199 in 2016. Female trainees outnumbered male trainees in every year between 2013 and 2016. **NSW**
	• **New fellows**: There were 11 Rehabilitation Medicine new fellows in 2016
	• **Advanced trainees**: There were 91 Rehabilitation Medicine advanced trainees in 2017. This is an increase from 79 in 2016.

Regional Comparisons

The rehabilitation medicine medical workforce profile in Richmond and Clarence Valleys is below, per 100,000 population, the Australian average.

Considerations and Emerging Trends
• Subject to Clinical Services Plan

Workforce Survey Response

No response received.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

Sexual Health Medicine

Sexual health medicine is the specialised area of medical practice concerned with healthy sexual relations, including freedom from sexually transmissible infections (STIs), unplanned pregnancy, coercion, and physical or psychological discomfort associated with sexuality. A minimum of three years full-time advanced training through the Royal Australasian College of Physicians, Australasian Chapter of Sexual Health Medicine is required to specialise in this area.[1]

Sexual Health	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • In 2016, there were 114 Sexual Health Medicine Physicians employed in Australia • 28.1% worked in the private sector • 85% of Sexual Health Medicine Physicians who completed the 2016 National Health Workforce Survey indicated they were clinicians. **NSW** • In 2015, there were 46 Sexual Health Medicine Physicians employed in NSW • 23% worked in the private sector only while 11% worked in the public and private sectors.	• In 2018, there are 3 Sexual Health Medicine Physicians practising in the Richmond Clarence Network • All Sexual Health Medicine Physicians work at Northern NSW local Health District. • Survey response: There are two Sexual Health Medicine Physicians working in the Richmond Network. The Richmond Network Sexual Health Medicine Physicians also provide services to Tweed/Byron Network 5 days per fortnight.

Workforce Demographics	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • Males represented 45.4% of Sexual Health Medicine Physicians. The average age was 56.3 years and average work hours each week was 26.6 • Females represented 54.6% of Sexual Health Medicine Physicians and on average were 2.2 years younger and worked 0.6 more hours per week compared to male Sexual Health Medicine Physicians • The total average hours for the Sexual Health Medicine workforce was 26.9 hours per week. **NSW**	• Males represent 66.7% of Sexual Health Medicine Physicians. The average age is 58 years and average work hours each week is 28.5 • 1 female Sexual Health Medicine Physician (33.3%), she is 12 years younger than the average age of male Sexual Health Medicine Physicians and works 38 hours per week • The total average hours for the Sexual Health Medicine workforce is 31.6 hours per week.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

	• Females represent 50.0% of Sexual Health Medicine Physicians • The average age was 54.4 years and average work hours each week was 33.5 • 39.1% of the workforce are aged over 60 years.	

Distribution	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • 84.5% of Sexual Health Medicine Physicians were located in a major city or a location considered as MMM1[7] • There is 0.4 Sexual Health Medicine Physicians per 100,000 population across Australia • Nearly half of all Sexual Health Medicine Physicians indicated their principle place of practice was located in NSW. **NSW** • 37 Sexual Health Medicine Physicians work in Metropolitan Sydney (80%) • 48% of these intend to retire in the next five years • 9 Sexual Health Medicine Physicians work in Non-Metropolitan Sydney (20%) • 72% of these intend to retire in the next five years • There is 0.6 Sexual Health Medicine Physicians per 100,000 population across NSW.	• All Sexual Health Medicine Physicians practice in the Richmond Network • There is 1.8 Sexual Health Medicine Physicians per 100,000 population across Richmond Clarence Network

New Fellows Vocational Training	Australia and NSW [1,2,3,4]	Richmond and Clarence Network [2,5,6]
	Australia • **New fellows**: There were 6 Sexual Health Medicine Physician new fellows in 2015 which is double the number in 2013 (3) • The number of overseas trained new fellows who obtained their specialist qualification outside of	Richmond • Vocational Training AT x1

| | Australia in 2015 (4) was four times higher than the number in 2013 (1)

Vocational training: There was 13 Sexual Health Medicine Physician vocational trainees in 2016. Female trainees outnumbered male trainees in every year between 2013 and 2016. During this period, the total number of trainees decreased by 35% from 20 in 2013 to 13 in 2016.
NSW
• **New fellows**: There were 2 Sexual Health Medicine new fellows in 2016
• **Advanced trainees**: There were 5 Sexual Health Medicine advanced trainees in 2017. This is an increase from 4 in 2016. | |

Regional Comparisons

The sexual health medical workforce profile in Richmond and Clarence Valleys is above, per 100,000 population, the Australian average. Richmond Valley ratio is above the Australia average whereas Clarence Valley is below the average.

Considerations and Emerging Trends
• Increase in demand is expected.

Workforce Survey Response

- One Sexual Health Medicine Physician in the Richmond Network responded to the survey
- The Sexual Health Medicine Physician reports that:
    - There are two Sexual Health Medicine Physicians working in the Richmond Network (not three)
    - The Richmond Network Sexual Health Medicine Physicians also provide services to Tweed/Byron Network 5 days per fortnight.

Need

- The average waiting time for an urgent public sector outpatient clinic referral is one day.
- The average waiting time for a non-urgent public sector outpatient clinic referral is two weeks
- There is currently no reliance on regular locum workforce.
- There is a need for additional Sexual Health Medicine Physician workforce due to growing demand in the Tweed area.
- It is likely increasing Sexually Transmitted Infection and Human Immunodeficiency Virus diagnoses will increase demand in the future.

Workforce Survey Implications

- The Regional Comparison data that suggests the Richmond Network is resourced favourably 84.1% compared to the Australian average (although the calculations need to be adjusted in line with the survey response)
- Workforce data needs to be further investigated to clarify difference in reported head count.

VSA
AUSTRALIA
SERVICE & SYSTEM REDESIGN

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates by Local Government Area (ASGS 2017), 2016 to 2017. Australian Bureau of Statistics, 2018.
3. Medical Career Planning Fact Sheets, NSW Health. Available at: https://www.health.nsw.gov.au/careers/Pages/career-planning.aspx (accessed on 28 April 2020).
4. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
5. Workforce data. Northern NSW Local Health District, 2018.
6. Workforce data. St Vincent's Lismore, 2018.
7. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).

Surgery

Data in this factsheet covers the following surgery subspecialties: cardio-thoracic surgery, neurosurgery, oral and maxillofacial surgery, paediatric surgery, urology and vascular surgery. Depending on the specialty, up to seven years full-time advanced training through the Royal Australasian College of Surgeons or the Royal Australasian College of Dental Surgeons is required to practice:

- Cardio-thoracic surgery encompasses the lung, heart, and/or the great vessels;
- Neurosurgery encompasses disorders of the brain, meninges, skull and their blood supply;
- Oral maxillofacial surgeons specialise in the oral and maxillofacial regions of the neck and head;
- Paediatric surgery encompasses conditions in children usually up to the age of 16 that may require surgery, such as non-cardiac thoracic surgery, general paediatric surgery and paediatric urology;
- Urology is the treatment of problems involving the kidney, bladder, prostate and male reproductive organs; and
- Vascular surgery encompasses diseases of the vascular system.

Surgeon	Australia [1,2]	Richmond and Clarence Network [2,3,4]
	- In 2016, there were 1,271 Surgeons employed in Australia 63.7% worked in the private sector 94% of Surgeons who completed the 2016 National Health Workforce Survey indicated they were clinicians.	- In 2018, there are 13 Surgeons practising in the Richmond Clarence Network - Surgery specialities include cardio-thoracic (1), Neurosurgery (2), Oral maxillofacial (2), Urology (4) and Vascular (4) 7 Surgeons work at Northern NSW Local Health District and St Vincent's Lismore 6 Surgeons work at St Vincent's Lismore.

Workforce Demographics	Australia [1,2]	Richmond and Clarence Network [2,3,4]
	- Males represented 89.1% of Surgeons. The average age was 51.9 years and average work hours each week was 48.6 - Females represented 10.9% of Surgeons and on average were 6.1 years younger and worked 2.8 fewer hours per week compared to male Surgeons - The total average hours for the Surgeon workforce was 48.3 hours per week - The age group with the highest proportion (38%) of Surgeons was 40-49 years.	- Males represent 84.6% of Surgeons. The average age is 49.6 years - Females represent 15.4% of Surgeons and on average are 5.6 years younger than the average age of male Surgeons - Data on work hours is currently not available.

Distribution	Australia [1,2,]	Richmond and Clarence Network [2,3,4]
	• 89% of Surgeons were located in a major city or a location considered as MMM1[5] • There is 4.9 Surgeons per 100,000 population across Australia • New South Wales has the highest proportion of Surgeons with over 32%.	• All 13 Surgeons practice in the Richmond Network • An additional 8 Surgeons practice in the Tweed Byron Network • There is 7.6 Surgeons per 100,000 population across Richmond Clarence Network.

New Fellows Vocational Training	Australia [1,2,]	Richmond and Clarence Network [2,3,4]
	• **New fellows**: There were 57 Surgeon new fellows (52 male and 5 female) in 2015. Female new fellows decreased by 50% and male new fellows decreased by 1.9% from 2013 to 2015. • There were no overseas trained new fellows in Surgery between 2013 and 2015 Vocational training: There were 279 Surgeon trainees in 2016. Female trainees increased by 20.9% whereas male trainees decreased by 3.9% between 2013 and 2016.	Richmond Vascular Surgery Prevocational Training x 1 RMO Vocational Training x 1

Regional Comparisons

The surgical medical workforce profile in Richmond and Clarence Valleys is above, per 100,000 population, the Australian average. Richmond Valley ratio is above the Australia average whereas Clarence Valley is an area of need.

Considerations and Emerging Trends
• Children travelling for paediatric surgery puts enormous pressure on families and creates emotional, social and economic stress for children and families involved. Consideration should be given for the staged approach to redevelopment of a paediatric surgical service.

Workforce Survey Response

• Two Surgeons in the Richmond Network responded to the survey
• The Surgeons report that:
    o The workforce data is consistent with their own knowledge in terms of number of Surgeons and age and gender profiles.

VSA AUSTRALIA
SERVICE & SYSTEM REDESIGN

<u>Need</u>

- o Urgent public and private sector outpatient clinic referrals are seen with no delay.
- o The average waiting time for a non-urgent public and private sector outpatient clinic referral is six weeks.
- o There is currently no reliance on regular locum workforce.
- o There is no critical need for additional Surgeon workforce.

<u>Workforce Survey Implications</u>

- Comments about sufficient Surgeon workforce are supported by the Regional Comparison data that suggests the Richmond Network is resourced favourably 54.8% compared to the Australian average.

References

1. Health Workforce Data Fact Sheets, Department of Health. Available at: http://hwd.health.gov.au/publications.html (accessed on 26 November 2018).
2. Population Estimates for NSW in 2016. Australian Bureau of Statistics. Available at: https://quickstats.censusdata.abs.gov.au/census_services/getproduct/census/2016/quickstat/1 (accessed on 29 April 2020).
3. Workforce data. Northern NSW Local Health District, 2018.
4. Workforce data. St Vincent's Lismore, 2018.
5. Doctor Connect, Department of Health. Available at: http://www.doctorconnect.gov.au/internet/otd/publishing.nsf/Content/Classification-changes (accessed on 26 November 2018).